

CHAPTER

29

**HYDRAULIC
POWER**



777-200/300 FAULT ISOLATION MANUAL

CHAPTER 29 HYDRAULIC POWER

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
29-EFFECTIVE PAGES			29-11 TASKS			29-11 TASKS (cont)		
1 thru 4	SEP 05/2017		201	May 05/2013		237	Sep 05/2016	
29-HOW TO USE THE FIM			202	May 05/2013		238	Sep 05/2016	
1	Jan 05/2013		203	May 05/2013		239	May 05/2013	
2	Jan 05/2013		204	May 05/2013		O 240	Sep 05/2017	
3	Jan 05/2017		205	May 05/2013		O 241	Sep 05/2017	
4	Jan 05/2013		206	May 05/2013		O 242	Sep 05/2017	
5	Jan 05/2013		207	May 05/2013		O 243	Sep 05/2017	
6	Jan 05/2013		208	May 05/2013		O 244	Sep 05/2017	
29-FAULT CODE INDEX			209	May 05/2013		O 245	Sep 05/2017	
101	Jan 05/2013		210	May 05/2013		O 246	Sep 05/2017	
102	May 05/2016		211	May 05/2013		O 247	Sep 05/2017	
R 103	Sep 05/2017		212	May 05/2013		O 248	Sep 05/2017	
104	May 05/2016		213	May 05/2013		O 249	Sep 05/2017	
105	May 05/2016		214	May 05/2013		O 250	Sep 05/2017	
106	May 05/2016		215	May 05/2013		O 251	Sep 05/2017	
R 107	Sep 05/2017		216	May 05/2013		O 252	Sep 05/2017	
108	May 05/2016		217	May 05/2013		O 253	Sep 05/2017	
109	May 05/2016		218	May 05/2013		O 254	Sep 05/2017	
110	May 05/2016		R 219	Sep 05/2017		O 255	Sep 05/2017	
R 111	Sep 05/2017		O 220	Sep 05/2017		O 256	Sep 05/2017	
112	May 05/2016		R 221	Sep 05/2017		O 257	Sep 05/2017	
113	May 05/2016		O 222	Sep 05/2017		O 258	Sep 05/2017	
114	May 05/2016		O 223	Sep 05/2017		O 259	Sep 05/2017	
R 115	Sep 05/2017		O 224	Sep 05/2017		O 260	Sep 05/2017	
116	May 05/2016		O 225	Sep 05/2017		O 261	Sep 05/2017	
117	May 05/2016		O 226	Sep 05/2017		O 262	Sep 05/2017	
118	May 05/2016		O 227	Sep 05/2017		O 263	Sep 05/2017	
29-MAINT MSG INDEX			O 228	Sep 05/2017		O 264	Sep 05/2017	
101	Jan 05/2013		O 229	Sep 05/2017		O 265	Sep 05/2017	
102	May 05/2016		230	Sep 05/2016		O 266	Sep 05/2017	
103	May 05/2016		231	Sep 05/2016		O 267	Sep 05/2017	
104	Jan 05/2013		232	Sep 05/2016		O 268	Sep 05/2017	
105	Sep 05/2016		233	Sep 05/2016		O 269	Sep 05/2017	
106	Sep 05/2016		234	Sep 05/2016		O 270	Sep 05/2017	
107	Sep 05/2016		235	Sep 05/2016		O 271	Sep 05/2017	
108	BLANK		236	Sep 05/2016		O 272	Sep 05/2017	

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

29-EFFECTIVE PAGES



777-200/300 FAULT ISOLATION MANUAL

CHAPTER 29 HYDRAULIC POWER

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
29-11 TASKS (cont)			29-11 TASKS (cont)			29-11 TASKS (cont)		
O 273	Sep 05/2017		O 298.11	Sep 05/2017		O 298.47	Sep 05/2017	
O 274	Sep 05/2017		O 298.12	Sep 05/2017		O 298.48	Sep 05/2017	
O 275	Sep 05/2017		O 298.13	Sep 05/2017		O 298.49	Sep 05/2017	
O 276	Sep 05/2017		O 298.14	Sep 05/2017		O 298.50	Sep 05/2017	
O 277	Sep 05/2017		O 298.15	Sep 05/2017		O 298.51	Sep 05/2017	
O 278	Sep 05/2017		O 298.16	Sep 05/2017		O 298.52	Sep 05/2017	
O 279	Sep 05/2017		O 298.17	Sep 05/2017		O 298.53	Sep 05/2017	
O 280	Sep 05/2017		O 298.18	Sep 05/2017		O 298.54	Sep 05/2017	
O 281	Sep 05/2017		O 298.19	Sep 05/2017		O 298.55	Sep 05/2017	
O 282	Sep 05/2017		O 298.20	Sep 05/2017		O 298.56	Sep 05/2017	
O 283	Sep 05/2017		O 298.21	Sep 05/2017		O 298.57	Sep 05/2017	
O 284	Sep 05/2017		O 298.22	Sep 05/2017		O 298.58	Sep 05/2017	
O 285	Sep 05/2017		O 298.23	Sep 05/2017		O 298.59	Sep 05/2017	
O 286	Sep 05/2017		O 298.24	Sep 05/2017		O 298.60	Sep 05/2017	
O 287	Sep 05/2017		R 298.25	Sep 05/2017		O 298.61	Sep 05/2017	
O 288	Sep 05/2017		O 298.26	Sep 05/2017		O 298.62	Sep 05/2017	
O 289	Sep 05/2017		O 298.27	Sep 05/2017		O 298.63	Sep 05/2017	
O 290	Sep 05/2017		O 298.28	Sep 05/2017		O 298.64	Sep 05/2017	
O 291	Sep 05/2017		O 298.29	Sep 05/2017		O 298.65	Sep 05/2017	
O 292	Sep 05/2017		O 298.30	Sep 05/2017		O 298.66	Sep 05/2017	
O 293	Sep 05/2017		O 298.31	Sep 05/2017		O 298.67	Sep 05/2017	
O 294	Sep 05/2017		O 298.32	Sep 05/2017		O 298.68	Sep 05/2017	
O 295	Sep 05/2017		O 298.33	Sep 05/2017		O 298.69	Sep 05/2017	
O 296	Sep 05/2017		O 298.34	Sep 05/2017		O 298.70	Sep 05/2017	
O 297	Sep 05/2017		O 298.35	Sep 05/2017		O 298.71	Sep 05/2017	
O 298	Sep 05/2017		O 298.36	Sep 05/2017		O 298.72	Sep 05/2017	
O 298.1	Sep 05/2017		O 298.37	Sep 05/2017		O 298.73	Sep 05/2017	
O 298.2	Sep 05/2017		O 298.38	Sep 05/2017		O 298.74	Sep 05/2017	
O 298.3	Sep 05/2017		O 298.39	Sep 05/2017		O 298.75	Sep 05/2017	
O 298.4	Sep 05/2017		O 298.40	Sep 05/2017		O 298.76	Sep 05/2017	
O 298.5	Sep 05/2017		O 298.41	Sep 05/2017		O 298.77	Sep 05/2017	
O 298.6	Sep 05/2017		O 298.42	Sep 05/2017		O 298.78	Sep 05/2017	
O 298.7	Sep 05/2017		O 298.43	Sep 05/2017		O 298.79	Sep 05/2017	
O 298.8	Sep 05/2017		O 298.44	Sep 05/2017		O 298.80	Sep 05/2017	
O 298.9	Sep 05/2017		O 298.45	Sep 05/2017		O 298.81	Sep 05/2017	
O 298.10	Sep 05/2017		O 298.46	Sep 05/2017		O 298.82	Sep 05/2017	

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

29-EFFECTIVE PAGES



777-200/300 FAULT ISOLATION MANUAL

CHAPTER 29 HYDRAULIC POWER

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
29-11 TASKS (cont)			29-11 TASKS (cont)			29-11 TASKS (cont)		
O 298.83	Sep 05/2017		O 298.119	Sep 05/2017		O 298.155	Sep 05/2017	
O 298.84	Sep 05/2017		O 298.120	Sep 05/2017		O 298.156	Sep 05/2017	
O 298.85	Sep 05/2017		O 298.121	Sep 05/2017		O 298.157	Sep 05/2017	
O 298.86	Sep 05/2017		O 298.122	Sep 05/2017		O 298.158	Sep 05/2017	
O 298.87	Sep 05/2017		O 298.123	Sep 05/2017		O 298.159	Sep 05/2017	
O 298.88	Sep 05/2017		O 298.124	Sep 05/2017		R 298.160	Sep 05/2017	
O 298.89	Sep 05/2017		O 298.125	Sep 05/2017		R 298.161	Sep 05/2017	
O 298.90	Sep 05/2017		O 298.126	Sep 05/2017		O 298.162	Sep 05/2017	
O 298.91	Sep 05/2017		O 298.127	Sep 05/2017		O 298.163	Sep 05/2017	
O 298.92	Sep 05/2017		O 298.128	Sep 05/2017		O 298.164	Sep 05/2017	
O 298.93	Sep 05/2017		O 298.129	Sep 05/2017		O 298.165	Sep 05/2017	
O 298.94	Sep 05/2017		O 298.130	Sep 05/2017		O 298.166	Sep 05/2017	
O 298.95	Sep 05/2017		O 298.131	Sep 05/2017		O 298.167	Sep 05/2017	
O 298.96	Sep 05/2017		O 298.132	Sep 05/2017		O 298.168	Sep 05/2017	
O 298.97	Sep 05/2017		O 298.133	Sep 05/2017		O 298.169	Sep 05/2017	
O 298.98	Sep 05/2017		O 298.134	Sep 05/2017		O 298.170	Sep 05/2017	
O 298.99	Sep 05/2017		O 298.135	Sep 05/2017		O 298.171	Sep 05/2017	
O 298.100	Sep 05/2017		O 298.136	Sep 05/2017		O 298.172	Sep 05/2017	
O 298.101	Sep 05/2017		O 298.137	Sep 05/2017		O 298.173	Sep 05/2017	
O 298.102	Sep 05/2017		O 298.138	Sep 05/2017		O 298.174	Sep 05/2017	
O 298.103	Sep 05/2017		O 298.139	Sep 05/2017		O 298.175	Sep 05/2017	
O 298.104	Sep 05/2017		O 298.140	Sep 05/2017		O 298.176	Sep 05/2017	
O 298.105	Sep 05/2017		O 298.141	Sep 05/2017		O 298.177	Sep 05/2017	
O 298.106	Sep 05/2017		O 298.142	Sep 05/2017		O 298.178	Sep 05/2017	
O 298.107	Sep 05/2017		O 298.143	Sep 05/2017		O 298.179	Sep 05/2017	
O 298.108	Sep 05/2017		O 298.144	Sep 05/2017		O 298.180	Sep 05/2017	
O 298.109	Sep 05/2017		O 298.145	Sep 05/2017		O 298.181	Sep 05/2017	
O 298.110	Sep 05/2017		O 298.146	Sep 05/2017		O 298.182	Sep 05/2017	
O 298.111	Sep 05/2017		O 298.147	Sep 05/2017		O 298.183	Sep 05/2017	
O 298.112	Sep 05/2017		O 298.148	Sep 05/2017		O 298.184	Sep 05/2017	
O 298.113	Sep 05/2017		O 298.149	Sep 05/2017		O 298.185	Sep 05/2017	
O 298.114	Sep 05/2017		O 298.150	Sep 05/2017		O 298.186	Sep 05/2017	
O 298.115	Sep 05/2017		O 298.151	Sep 05/2017		O 298.187	Sep 05/2017	
O 298.116	Sep 05/2017		O 298.152	Sep 05/2017		O 298.188	Sep 05/2017	
O 298.117	Sep 05/2017		R 298.153	Sep 05/2017		O 298.189	Sep 05/2017	
O 298.118	Sep 05/2017		R 298.154	Sep 05/2017		O 298.190	Sep 05/2017	

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

29-EFFECTIVE PAGES



**777-200/300
FAULT ISOLATION MANUAL**

**CHAPTER 29
HYDRAULIC POWER**

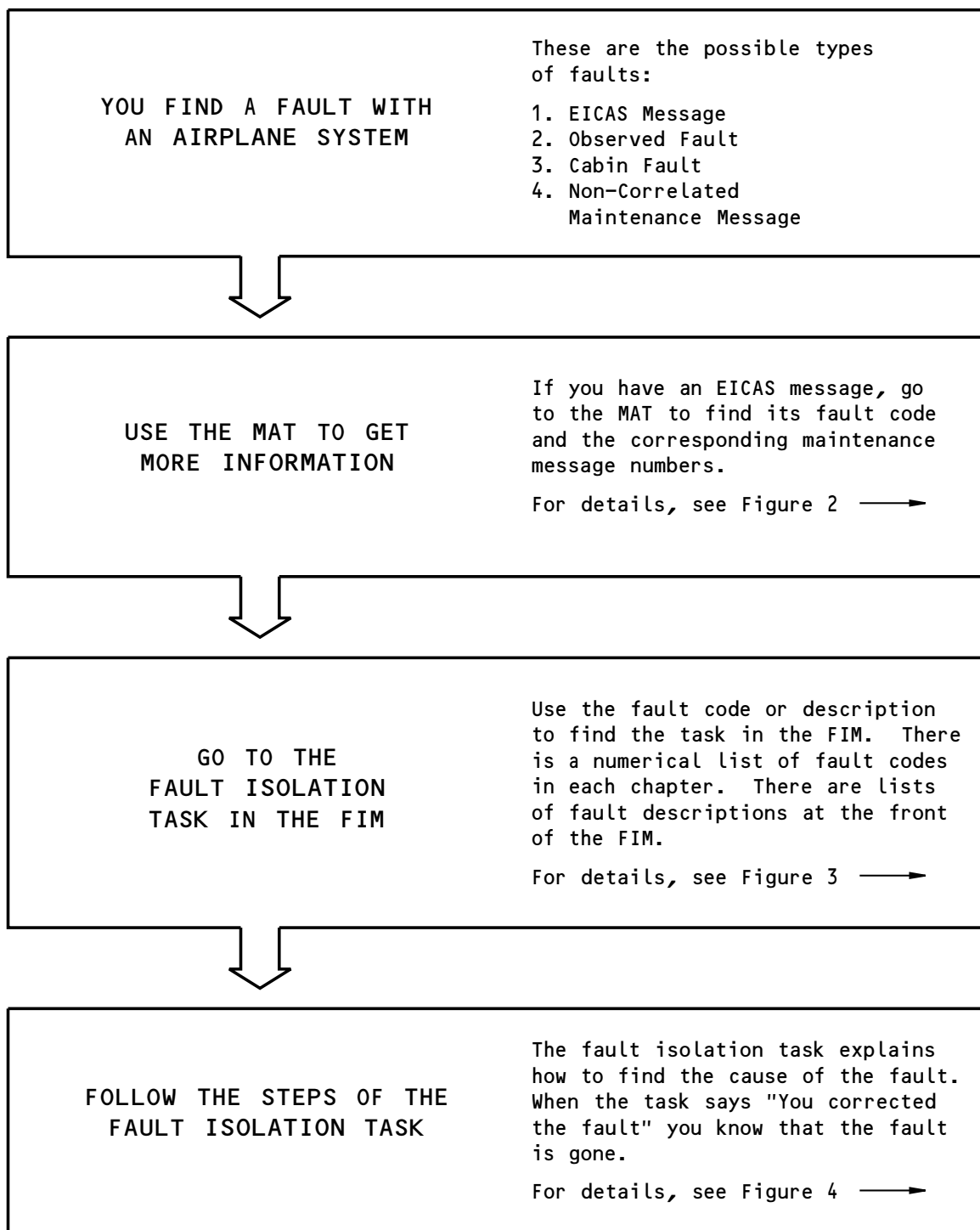
Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
29-11 TASKS (cont)			29-21 TASKS (cont)					
O 298.191	Sep 05/2017		206	Jan 05/2013				
O 298.192	Sep 05/2017		207	Sep 05/2016				
O 298.193	Sep 05/2017		208	Sep 05/2016				
O 298.194	Sep 05/2017		209	Sep 05/2016				
O 298.195	Sep 05/2017		210	Sep 05/2016				
O 298.196	Sep 05/2017		R 211	Sep 05/2017				
O 298.197	Sep 05/2017		O 212	Sep 05/2017				
O 298.198	Sep 05/2017		O 213	Sep 05/2017				
O 298.199	Sep 05/2017		O 214	Sep 05/2017				
O 298.200	Sep 05/2017		O 215	Sep 05/2017				
O 298.201	Sep 05/2017		O 216	Sep 05/2017				
O 298.202	Sep 05/2017		O 217	Sep 05/2017				
O 298.203	Sep 05/2017		O 218	Sep 05/2017				
O 298.204	Sep 05/2017		O 219	Sep 05/2017				
O 298.205	Sep 05/2017		O 220	Sep 05/2017				
O 298.206	Sep 05/2017		O 221	Sep 05/2017				
O 298.207	Sep 05/2017		222	BLANK				
O 298.208	Sep 05/2017		29-21 TASK SUPPORT					
O 298.209	Sep 05/2017		301	Jan 05/2013				
O 298.210	Sep 05/2017		302	Jan 05/2013				
O 298.211	Sep 05/2017		303	Jan 05/2013				
O 298.212	Sep 05/2017		304	BLANK				
O 298.213	Sep 05/2017		29-98 TASKS					
O 298.214	Sep 05/2017		201	Jan 05/2013				
O 298.215	Sep 05/2017		202	BLANK				
O 298.216	Sep 05/2017							
R 298.217	Sep 05/2017							
O 298.218	Sep 05/2017							
A 298.219	Sep 05/2017							
A 298.220	Sep 05/2017							
29-21 TASKS								
201	Jan 05/2013							
202	Sep 05/2016							
203	Sep 05/2016							
R 204	Sep 05/2017							
205	Jan 05/2013							

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

29-EFFECTIVE PAGES



777-200/300 FAULT ISOLATION MANUAL



E84424 S0000132469_V1

Basic Fault Isolation Process
Figure 1

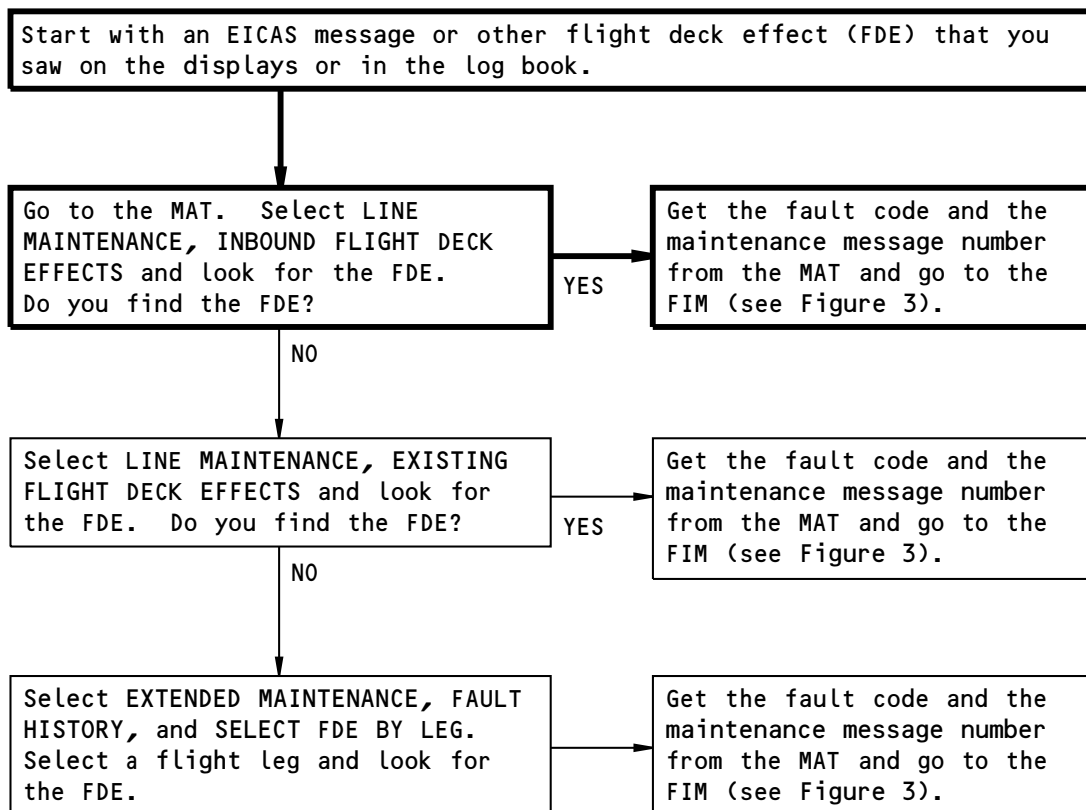
EFFECTIVITY
ARO ALL

29-HOW TO USE THE FIM

D633W103-ARO

Page 1
Jan 05/2013

777-200/300
FAULT ISOLATION MANUAL



NOTE: The bold lines show the most common path.

E84425 S0000132475_V1

Getting Fault Information from the MAT
Figure 2

EFFECTIVITY
ARO ALL

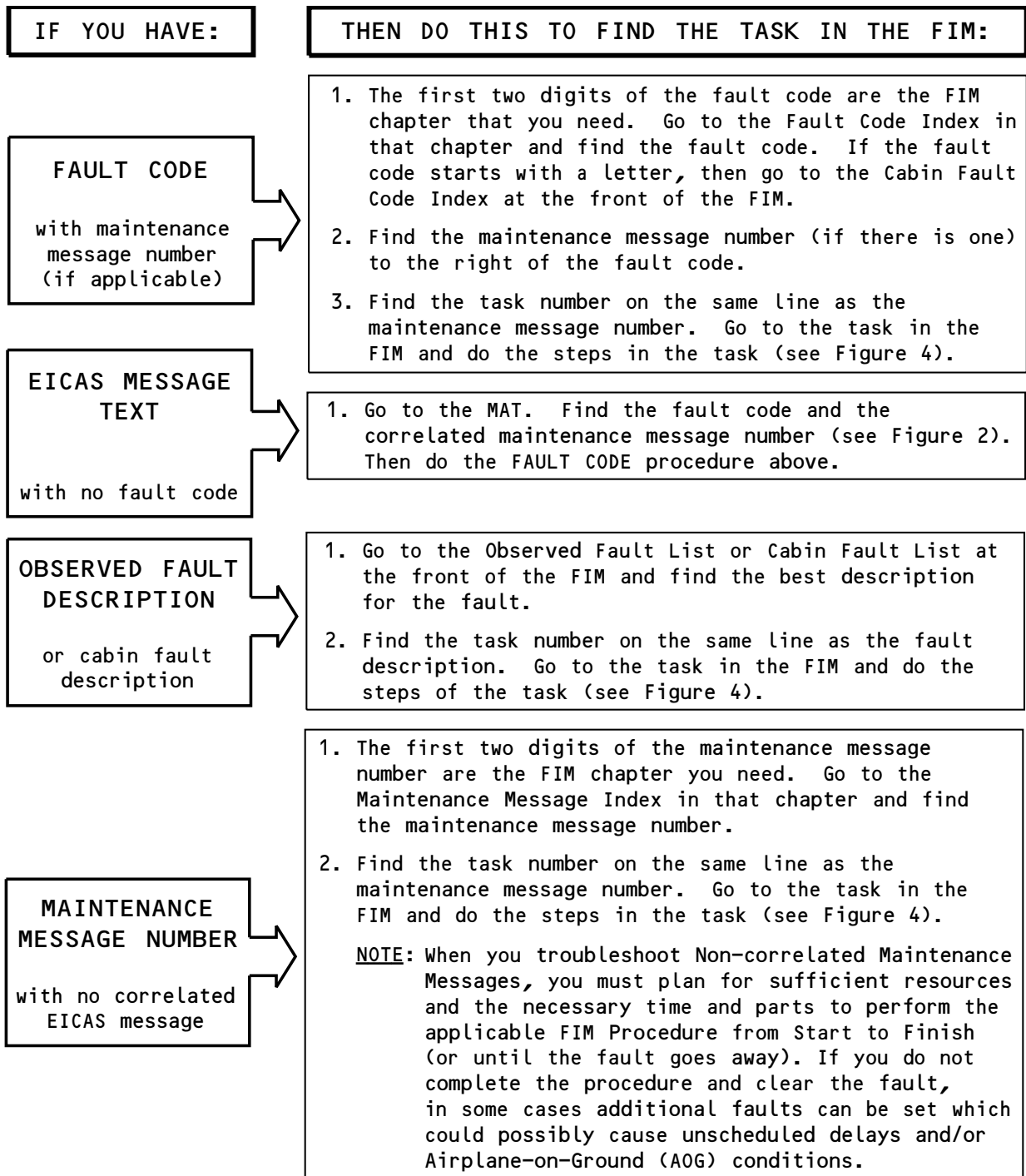
29-HOW TO USE THE FIM

D633W103-ARO

Page 2
Jan 05/2013



777-200/300 FAULT ISOLATION MANUAL



E84427 S0000132476_V2

Finding the Fault Isolation Task in the FIM
Figure 3

EFFECTIVITY
ARO ALL

29-HOW TO USE THE FIM

D633W103-ARO

Page 3
Jan 05/2017



777-200/300 FAULT ISOLATION MANUAL

ASSUMED CONDITIONS AT START OF TASK

- External electrical power is ON
- Hydraulic power and pneumatic power are OFF
- Engines are shut down
- No equipment in the system is deactivated

INITIAL EVALUATION PARAGRAPH

- The Initial Evaluation paragraph at the start of the task helps you determine whether you can detect the fault right now.
- If you cannot detect the fault right now, then the task cannot isolate the fault and the Initial Evaluation paragraph will say that there was an intermittent fault.
- If you have an intermittent fault, you must use your judgement (and follow your airline's policy) to decide which components to replace. Then monitor the airplane to see if the fault happens again on subsequent flights.

FAULT ISOLATION STEPS

- The FIM task steps are presented in a specified order. "The If... then" statements will guide you along a logical path. But if you do not plan to follow the FIM task exactly, make sure that you read it before you start to isolate the fault. Some FIM procedures start with important steps that have an effect on the other steps in the procedure.
- When you are at the endpoint of the path, the step says "You corrected the fault." Complete the step and exit the procedure.
- The Recommended Maintenance Action that shows on the MAT for the maintenance message gives a list of possible causes in order by probability of failure. In the FIM procedure, the possible causes can be in a different order from the MAT.

WIRING CHECKS

When a step says "Do a wiring check", do these three types of electrical checks for the specified contacts (pins):

- continuity from contact to contact
- shorts between the contacts
- shorts from each contact to ground

E84428 S0000132477_V3

Doing the Fault Isolation Task
Figure 4

EFFECTIVITY
ARO ALL

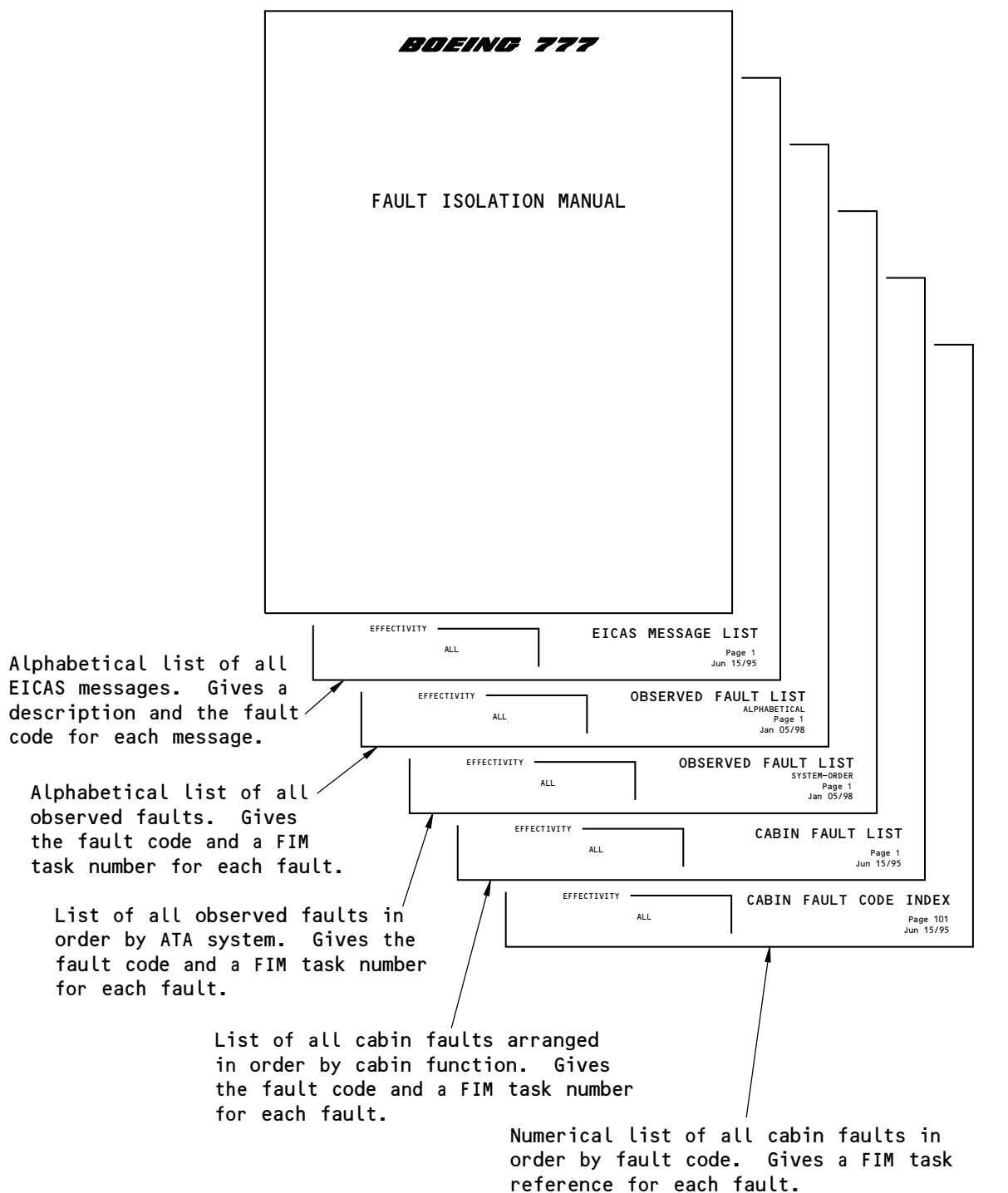
29-HOW TO USE THE FIM

D633W103-ARO

Page 4
Jan 05/2013



777-200/300 FAULT ISOLATION MANUAL



F39750 S0000132478_V1

Subjects at Front of FIM
Figure 5

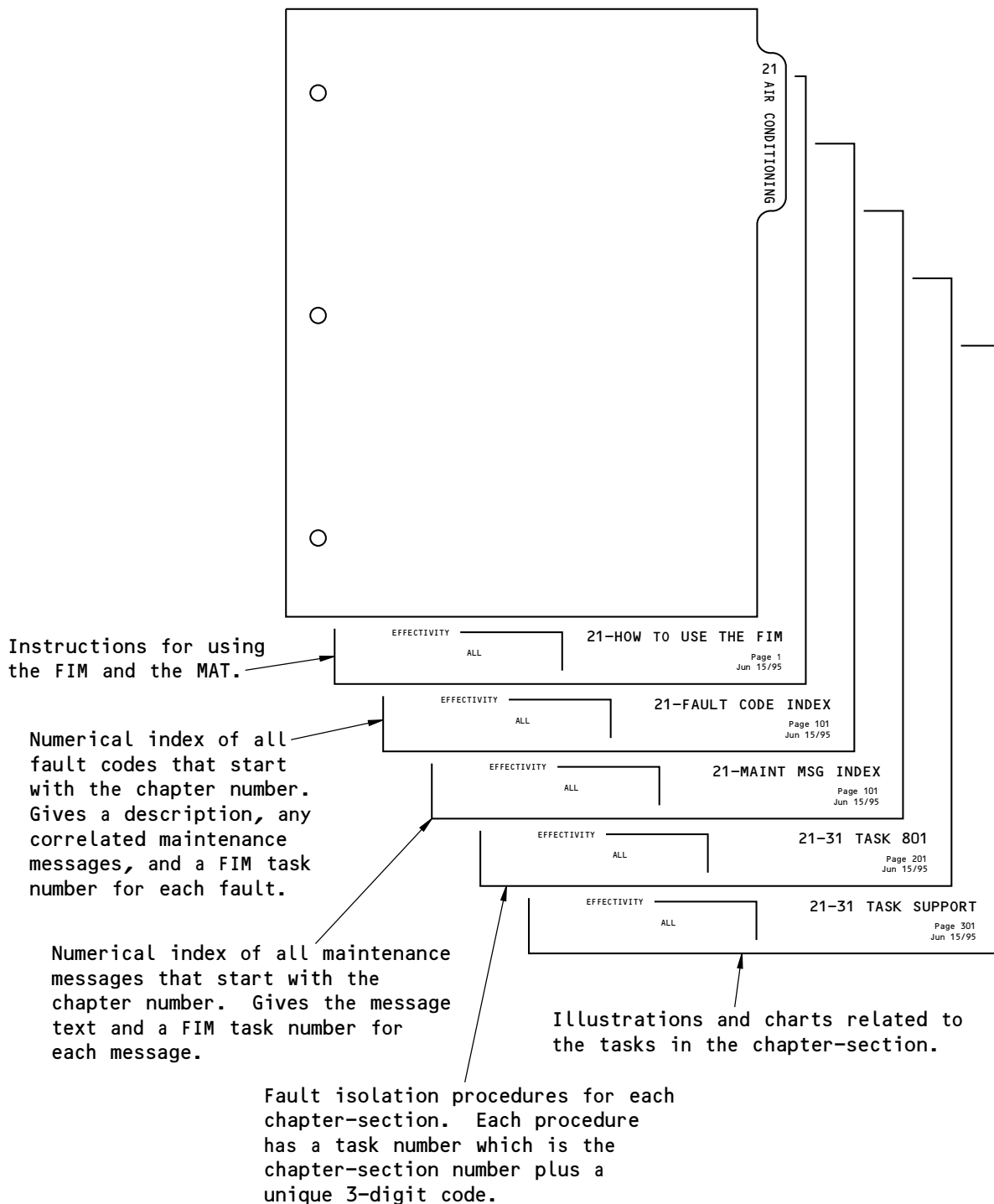
EFFECTIVITY
ARO ALL

29-HOW TO USE THE FIM

D633W103-ARO



777-200/300 FAULT ISOLATION MANUAL



F39837 S0000132479_V1

Subjects in Each FIM Chapter
Figure 6

EFFECTIVITY
ARO ALL

29-HOW TO USE THE FIM

D633W103-ARO

Page 6
Jan 05/2013



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 001 41	HYD PRESS SYS L (EICAS CAUTION)	29-10340	29-11 TASK 813
291 001 42	HYD PRESS SYS R (EICAS CAUTION)	29-10330	29-11 TASK 827
291 001 43	HYD PRESS SYS C (EICAS CAUTION)	29-10150	29-11 TASK 894
291 002 00	HYD QTY LOW L+C (EICAS CAUTION)		29-11 TASK 935
291 003 00	HYD QTY LOW L+R (EICAS CAUTION)		29-11 TASK 935
291 004 00	HYD QTY LOW R+C (EICAS CAUTION)		29-11 TASK 935
291 005 00	HYD QTY LOW L+C+R (EICAS CAUTION)		29-11 TASK 935
291 006 41	HYD QTY LOW L (EICAS ADVISORY)	29-10340	29-11 TASK 813
291 006 42	HYD QTY LOW R (EICAS ADVISORY)	29-10330	29-11 TASK 827
291 006 43	HYD QTY LOW C (EICAS ADVISORY)	29-10150	29-11 TASK 894
291 011 41	HYD PRESS PRI L (EICAS ADVISORY)	23-41360 23-42360 23-43360 24-13815 29-10650 29-10660	23-93 TASK 801 23-93 TASK 802 29-11 TASK 884 24-61 TASK 806 29-11 TASK 825 29-11 TASK 826
291 011 42	HYD PRESS PRI R (EICAS ADVISORY)	23-41720 23-42720 23-43720 24-13815 29-10740 29-10750	23-93 TASK 803 23-93 TASK 804 29-11 TASK 886 24-61 TASK 806 29-11 TASK 867 29-11 TASK 868
291 012 01	HYD PRESS PRI C1 (EICAS ADVISORY)	23-41130 23-42130 23-43130 24-11782 24-11786 24-11787 24-11805 24-11806 29-10550 29-12015 29-17006 29-17010 29-17022	23-93 TASK 801 23-93 TASK 802 29-11 TASK 882 24-51 TASK 838 24-51 TASK 833 24-32 TASK 817 24-08 TASK 801 24-08 TASK 801 29-11 TASK 896 29-11 TASK 893 29-11 TASK 949 29-11 TASK 953 29-11 TASK 958

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 101
Jan 05/2013



777-200/300
FAULT ISOLATION MANUAL

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 012 02	HYD PRESS PRI C2 (EICAS ADVISORY)	23-41140	23-93 TASK 803
		23-42140	23-93 TASK 804
		23-43140	29-11 TASK 883
		24-12056	24-32 TASK 820
		24-12127	24-51 TASK 842
		24-12128	24-51 TASK 843
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
		29-10570	29-11 TASK 898
		29-12010	29-11 TASK 892
		29-17008	29-11 TASK 951
		29-17009	29-11 TASK 952
		29-17023	29-11 TASK 959
291 016 41	HYD PRESS DEM L (EICAS ADVISORY)	23-41340	23-93 TASK 803
		23-42340	23-93 TASK 804
		23-43340	29-11 TASK 842
		24-12056	24-32 TASK 820
		24-12124	24-51 TASK 840
		24-12127	24-51 TASK 842
		24-12806	24-08 TASK 845
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802
		29-10620	29-11 TASK 899
		29-12000	29-11 TASK 890
		29-17007	29-11 TASK 950
		29-17020	29-11 TASK 956
		29-17024	29-11 TASK 955
291 016 42	HYD PRESS DEM R (EICAS ADVISORY)	23-41710	23-93 TASK 801
		23-42710	23-93 TASK 802
		23-43710	29-11 TASK 885
		24-11781	24-51 TASK 837
		24-11786	24-51 TASK 833
		24-11787	24-32 TASK 817
		24-11804	24-08 TASK 801
		29-10710	29-11 TASK 900
		29-12005	29-11 TASK 891

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 102
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 016 42	HYD PRESS DEM R (EICAS ADVISORY)	(continued)	
		29-17005	29-11 TASK 948
		29-17011	29-11 TASK 954
		29-17021	29-11 TASK 957
291 017 01	HYD PRESS DEM C1 (EICAS ADVISORY)	23-41110	23-93 TASK 801
		23-42110	23-93 TASK 802
		23-43110	29-11 TASK 880
		23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		24-12056	24-32 TASK 820
		24-12127	24-51 TASK 842
		24-12128	24-51 TASK 843
		24-13816	24-32 TASK 831
		29-10005	29-11 TASK 938
		29-10180	29-11 TASK 803
		29-10220	29-11 TASK 929
		29-10230	29-11 TASK 930
		29-10420	29-11 TASK 814
		29-10430	29-11 TASK 815
		29-10440	29-11 TASK 816
		29-10510	29-11 TASK 819
		29-10950	29-11 TASK 836
		29-11020	29-11 TASK 840
		29-11090	29-11 TASK 928
		29-11100	29-11 TASK 838
		29-18893	29-11 TASK 913
		31-14011	31-09 TASK 812
		31-14012	31-09 TASK 813
		31-14015	31-09 TASK 816
		31-14017	31-09 TASK 818
		31-17438	31-09 TASK 836
		31-17640	31-10 TASK 815
		31-17905	31-07 TASK 801
		31-17907	31-07 TASK 803
		31-18801	31-08 TASK 810
		31-18803	31-08 TASK 812

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 103
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 017 01	HYD PRESS DEM C1 (EICAS ADVISORY)	(continued) 31-18841 31-18863	31-08 TASK 814 31-08 TASK 816
291 017 02	HYD PRESS DEM C2 (EICAS ADVISORY)	23-41110 23-41120 23-42110 23-42120 23-43110 23-43120 24-12056 24-12127 24-12128 24-13816 29-10007 29-10190 29-10230 29-10470 29-10480 29-10490 29-10530 29-11030 29-11110	23-93 TASK 801 23-93 TASK 803 23-93 TASK 802 23-93 TASK 804 29-11 TASK 880 29-11 TASK 881 24-32 TASK 820 24-51 TASK 842 24-51 TASK 843 24-32 TASK 831 29-11 TASK 940 29-11 TASK 853 29-11 TASK 930 29-11 TASK 858 29-11 TASK 859 29-11 TASK 860 29-11 TASK 862 29-11 TASK 879 29-11 TASK 877
291 021 41	HYD OVERHEAT PRI L (EICAS ADVISORY)	29-10640	29-11 TASK 824
291 021 42	HYD OVERHEAT PRI R (EICAS ADVISORY)	29-10730	29-11 TASK 866
291 022 01	HYD OVERHEAT PRI C1 (EICAS ADVISORY)	29-10540	29-11 TASK 895
291 022 02	HYD OVERHEAT PRI C2 (EICAS ADVISORY)	29-10560	29-11 TASK 897
291 026 41	HYD OVERHEAT DEM L (EICAS ADVISORY)	29-10610	29-11 TASK 823
291 026 42	HYD OVERHEAT DEM R (EICAS ADVISORY)	29-10700	29-11 TASK 864
291 027 01	HYD OVERHEAT DEM C1 (EICAS ADVISORY)	29-10500	29-11 TASK 818
291 027 02	HYD OVERHEAT DEM C2 (EICAS ADVISORY)	29-10520	29-11 TASK 820
291 031 41	HYD PUMP PRI L (EICAS STATUS)	23-41360 23-42360 23-43360 24-13815	23-93 TASK 801 23-93 TASK 802 29-11 TASK 884 24-61 TASK 806

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 104
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 031 41	HYD PUMP PRI L (EICAS STATUS)	(continued)	
		29-10640	29-11 TASK 824
		29-10650	29-11 TASK 825
		29-10660	29-11 TASK 826
291 031 42	HYD PUMP PRI R (EICAS STATUS)	23-41720	23-93 TASK 803
		23-42720	23-93 TASK 804
		23-43720	29-11 TASK 886
		24-13815	24-61 TASK 806
		29-10730	29-11 TASK 866
		29-10740	29-11 TASK 867
		29-10750	29-11 TASK 868
291 032 01	HYD PUMP PRI C1 (EICAS STATUS)	23-41130	23-93 TASK 801
		23-42130	23-93 TASK 802
		23-43130	29-11 TASK 882
		24-11782	24-51 TASK 838
		24-11786	24-51 TASK 833
		24-11787	24-32 TASK 817
		24-11805	24-08 TASK 801
		24-11806	24-08 TASK 801
		29-10540	29-11 TASK 895
		29-10550	29-11 TASK 896
		29-12015	29-11 TASK 893
		29-17006	29-11 TASK 949
		29-17010	29-11 TASK 953
		29-17022	29-11 TASK 958
291 032 02	HYD PUMP PRI C2 (EICAS STATUS)	23-41140	23-93 TASK 803
		23-42140	23-93 TASK 804
		23-43140	29-11 TASK 883
		24-12056	24-32 TASK 820
		24-12127	24-51 TASK 842
		24-12128	24-51 TASK 843
		24-12810	24-08 TASK 802
		24-12811	24-08 TASK 802
		29-10560	29-11 TASK 897
		29-10570	29-11 TASK 898
		29-12010	29-11 TASK 892

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 105
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 032 02	HYD PUMP PRI C2 (EICAS STATUS)	(continued)	
		29-17008	29-11 TASK 951
		29-17009	29-11 TASK 952
		29-17023	29-11 TASK 959
291 036 41	HYD PUMP DEM L (EICAS STATUS)	23-41340	23-93 TASK 803
		23-42340	23-93 TASK 804
		23-43340	29-11 TASK 842
		24-12056	24-32 TASK 820
		24-12124	24-51 TASK 840
		24-12127	24-51 TASK 842
		24-12806	24-08 TASK 845
		24-12808	24-08 TASK 802
		24-12809	24-08 TASK 802
		29-10610	29-11 TASK 823
		29-10620	29-11 TASK 899
		29-12000	29-11 TASK 890
		29-17007	29-11 TASK 950
		29-17020	29-11 TASK 956
		29-17024	29-11 TASK 955
291 036 42	HYD PUMP DEM R (EICAS STATUS)	23-41710	23-93 TASK 801
		23-42710	23-93 TASK 802
		23-43710	29-11 TASK 885
		24-11781	24-51 TASK 837
		24-11786	24-51 TASK 833
		24-11787	24-32 TASK 817
		24-11804	24-08 TASK 801
		29-10700	29-11 TASK 864
		29-10710	29-11 TASK 900
		29-12005	29-11 TASK 891
		29-17005	29-11 TASK 948
		29-17011	29-11 TASK 954
		29-17021	29-11 TASK 957
291 037 01	HYD PUMP DEM C1 (EICAS STATUS)	23-41110	23-93 TASK 801
		23-42110	23-93 TASK 802
		23-43110	29-11 TASK 880
		23-81004	23-91 TASK 804

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 106
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 037 01	HYD PUMP DEM C1 (EICAS STATUS)	(continued)	
		23-81006	23-91 TASK 806
		24-12056	24-32 TASK 820
		24-12127	24-51 TASK 842
		24-12128	24-51 TASK 843
		24-13816	24-32 TASK 831
		29-10005	29-11 TASK 938
		29-10180	29-11 TASK 803
		29-10220	29-11 TASK 929
		29-10230	29-11 TASK 930
		29-10420	29-11 TASK 814
		29-10430	29-11 TASK 815
		29-10440	29-11 TASK 816
		29-10450	29-11 TASK 817
		29-10500	29-11 TASK 818
		29-10510	29-11 TASK 819
		29-10950	29-11 TASK 836
		29-11020	29-11 TASK 840
		29-11040	29-11 TASK 841
		29-11090	29-11 TASK 928
		29-11100	29-11 TASK 838
		29-18893	29-11 TASK 913
		31-14011	31-09 TASK 812
		31-14012	31-09 TASK 813
		31-14015	31-09 TASK 816
		31-14017	31-09 TASK 818
		31-17438	31-09 TASK 836
		31-17640	31-10 TASK 815
		31-17905	31-07 TASK 801
		31-17907	31-07 TASK 803
		31-18801	31-08 TASK 810
		31-18803	31-08 TASK 812
		31-18841	31-08 TASK 814
		31-18863	31-08 TASK 816
291 037 02	HYD PUMP DEM C2 (EICAS STATUS)	23-41110	23-93 TASK 801
		23-41120	23-93 TASK 803

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 107
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 037 02	HYD PUMP DEM C2 (EICAS STATUS)	(continued)	
		23-42110	23-93 TASK 802
		23-42120	23-93 TASK 804
		23-43110	29-11 TASK 880
		23-43120	29-11 TASK 881
		24-12056	24-32 TASK 820
		24-12127	24-51 TASK 842
		24-12128	24-51 TASK 843
		24-13816	24-32 TASK 831
		29-10007	29-11 TASK 940
		29-10190	29-11 TASK 853
		29-10230	29-11 TASK 930
		29-10460	29-11 TASK 861
		29-10470	29-11 TASK 858
		29-10480	29-11 TASK 859
		29-10490	29-11 TASK 860
		29-10520	29-11 TASK 820
		29-10530	29-11 TASK 862
		29-11030	29-11 TASK 879
		29-11050	29-11 TASK 915
		29-11110	29-11 TASK 877
291 041 41	HYD RSVR PRESS L (EICAS STATUS)	29-10996	29-11 TASK 931
291 041 42	HYD RSVR PRESS R (EICAS STATUS)	29-11006	29-11 TASK 932
291 041 43	HYD RSVR PRESS C (EICAS STATUS)	29-11016	29-11 TASK 933
291 051 41	HYD AUTO CONTROL L (EICAS ADVISORY)	23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		29-11060	29-11 TASK 928
		29-18891	29-11 TASK 839
		31-14051	31-09 TASK 821
		31-14052	31-09 TASK 822
		31-14055	31-09 TASK 825
		31-14057	31-09 TASK 827
		31-17438	31-09 TASK 836
		31-17640	31-10 TASK 815
		31-17941	31-07 TASK 831
		31-17943	31-07 TASK 833

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 108
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 051 41	HYD AUTO CONTROL L (EICAS ADVISORY)	(continued)	
		31-18801	31-08 TASK 810
		31-18803	31-08 TASK 812
		31-18841	31-08 TASK 814
		31-18863	31-08 TASK 816
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69491	31-42 TASK 851
		31-69492	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69691	31-42 TASK 878
		31-69692	31-42 TASK 878
291 051 42	HYD AUTO CONTROL R (EICAS ADVISORY)	23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		29-11070	29-11 TASK 928
		29-18892	29-11 TASK 878
		31-14053	31-09 TASK 823
		31-14054	31-09 TASK 824
		31-14056	31-09 TASK 826
		31-14058	31-09 TASK 827
		31-17437	31-09 TASK 835
		31-17639	31-10 TASK 814
		31-17942	31-07 TASK 832
		31-17944	31-07 TASK 834
		31-18802	31-08 TASK 811
		31-18804	31-08 TASK 813
		31-18842	31-08 TASK 814

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 109
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 051 42	HYD AUTO CONTROL R (EICAS ADVISORY)	(continued)	
		31-18864	31-08 TASK 817
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69493	31-42 TASK 851
		31-69494	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69693	31-42 TASK 878
		31-69694	31-42 TASK 878
291 051 43	HYD AUTO CONTROL C (EICAS ADVISORY)	23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		29-11080	29-11 TASK 928
		29-11090	29-11 TASK 928
		29-18893	29-11 TASK 913
		29-18894	29-11 TASK 914
		31-14011	31-09 TASK 812
		31-14012	31-09 TASK 813
		31-14013	31-09 TASK 814
		31-14014	31-09 TASK 815
		31-14015	31-09 TASK 816
		31-14016	31-09 TASK 817
		31-14017	31-09 TASK 818
		31-14018	31-09 TASK 818
		31-17437	31-09 TASK 835
		31-17438	31-09 TASK 836
		31-17639	31-10 TASK 814
		31-17640	31-10 TASK 815

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 110
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 051 43	HYD AUTO CONTROL C (EICAS ADVISORY)	(continued)	
		31-17905	31-07 TASK 801
		31-17906	31-07 TASK 802
		31-17907	31-07 TASK 803
		31-17908	31-07 TASK 804
		31-18801	31-08 TASK 810
		31-18802	31-08 TASK 811
		31-18803	31-08 TASK 812
		31-18804	31-08 TASK 813
		31-18841	31-08 TASK 814
		31-18842	31-08 TASK 814
		31-18863	31-08 TASK 816
		31-18864	31-08 TASK 817
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69491	31-42 TASK 851
		31-69492	31-42 TASK 851
		31-69493	31-42 TASK 851
		31-69494	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69691	31-42 TASK 878
		31-69692	31-42 TASK 878
		31-69693	31-42 TASK 878
		31-69694	31-42 TASK 878
291 056 41	HYDIM CARD HL (EICAS STATUS)	23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		29-11060	29-11 TASK 928

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 111
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 056 41	HYDIM CARD HL (EICAS STATUS)	(continued)	
		29-18891	29-11 TASK 839
		31-14051	31-09 TASK 821
		31-14052	31-09 TASK 822
		31-14055	31-09 TASK 825
		31-14057	31-09 TASK 827
		31-17438	31-09 TASK 836
		31-17640	31-10 TASK 815
		31-17941	31-07 TASK 831
		31-17943	31-07 TASK 833
		31-18801	31-08 TASK 810
		31-18803	31-08 TASK 812
		31-18841	31-08 TASK 814
		31-18863	31-08 TASK 816
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69491	31-42 TASK 851
		31-69492	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69691	31-42 TASK 878
		31-69692	31-42 TASK 878
		NONE	31-09 TASK 838
291 056 42	HYDIM CARD HR (EICAS STATUS)	23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		29-11070	29-11 TASK 928
		29-18892	29-11 TASK 878
		31-14053	31-09 TASK 823

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 112
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 056 42	HYDIM CARD HR (EICAS STATUS)	(continued)	
		31-14054	31-09 TASK 824
		31-14056	31-09 TASK 826
		31-14058	31-09 TASK 827
		31-17437	31-09 TASK 835
		31-17639	31-10 TASK 814
		31-17942	31-07 TASK 832
		31-17944	31-07 TASK 834
		31-18802	31-08 TASK 811
		31-18804	31-08 TASK 813
		31-18842	31-08 TASK 814
		31-18864	31-08 TASK 817
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69493	31-42 TASK 851
		31-69494	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69693	31-42 TASK 878
		31-69694	31-42 TASK 878
		NONE	31-09 TASK 841
291 057 01	HYDIM CARD HCR (EICAS STATUS)	23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		29-11080	29-11 TASK 928
		29-18894	29-11 TASK 914
		31-14013	31-09 TASK 814
		31-14014	31-09 TASK 815
		31-14016	31-09 TASK 817

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 113
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 057 01	HYDIM CARD HCR (EICAS STATUS)	(continued)	
		31-14018	31-09 TASK 818
		31-17437	31-09 TASK 835
		31-17639	31-10 TASK 814
		31-17906	31-07 TASK 802
		31-17908	31-07 TASK 804
		31-18802	31-08 TASK 811
		31-18804	31-08 TASK 813
		31-18842	31-08 TASK 814
		31-18864	31-08 TASK 817
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69493	31-42 TASK 851
		31-69494	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69693	31-42 TASK 878
		31-69694	31-42 TASK 878
		NONE	31-09 TASK 840
291 057 02	HYDIM CARD HCL (EICAS STATUS)	23-81004	23-91 TASK 804
		23-81006	23-91 TASK 806
		29-11090	29-11 TASK 928
		29-18893	29-11 TASK 913
		31-14011	31-09 TASK 812
		31-14012	31-09 TASK 813
		31-14015	31-09 TASK 816
		31-14017	31-09 TASK 818
		31-17438	31-09 TASK 836

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 114
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 057 02	HYDIM CARD HCL (EICAS STATUS)	(continued)	
		31-17640	31-10 TASK 815
		31-17905	31-07 TASK 801
		31-17907	31-07 TASK 803
		31-18801	31-08 TASK 810
		31-18803	31-08 TASK 812
		31-18841	31-08 TASK 814
		31-18863	31-08 TASK 816
		31-54013	31-43 TASK 868
		31-54014	31-43 TASK 869
		31-54121	31-41 TASK 838
		31-54122	31-41 TASK 839
		31-58013	31-43 TASK 872
		31-58014	31-43 TASK 873
		31-58121	31-41 TASK 856
		31-58122	31-41 TASK 857
		31-69401	31-42 TASK 825
		31-69402	31-42 TASK 825
		31-69491	31-42 TASK 851
		31-69492	31-42 TASK 851
		31-69601	31-42 TASK 857
		31-69602	31-42 TASK 857
		31-69691	31-42 TASK 878
		31-69692	31-42 TASK 878
		NONE	31-09 TASK 837
291 061 00	RESERVE BRAKES/STRG (EICAS ADVISORY)	24-13801	24-61 TASK 805
		29-10760	29-11 TASK 830
291 067 00	HYD ISLN VALVE (EICAS STATUS)	24-11787	24-32 TASK 817
		24-13801	24-61 TASK 805
		29-10260	29-11 TASK 804
		29-10270	29-11 TASK 811
		29-10690	29-11 TASK 829
		29-10760	29-11 TASK 830
291 621 41	Hydraulic reservoir: quantity is low - left system.		29-11 TASK 960

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 115
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 621 42	Hydraulic reservoir: quantity is low - right system.		29-11 TASK 960
291 621 43	Hydraulic reservoir: quantity is low - center system.		29-11 TASK 960
291 811 41	Hydraulic return filter module: Bypass relief valve indicator is extended - left system.		29-11 TASK 942
291 811 42	Hydraulic return filter module: Bypass relief valve indicator is extended - right system.		29-11 TASK 942
291 811 43	Hydraulic return filter module: Bypass relief valve indicator is extended - center system.		29-11 TASK 942
291 812 01	Hydraulic alternating current motor pump (ACMP) pressure and case drain filter module: Differential pressure indicator on case drain filter is extended - C1 system.		29-11 TASK 943
291 812 02	Hydraulic alternating current motor pump (ACMP) pressure and case drain filter module: Differential pressure indicator on case drain filter is extended - C2 system.		29-11 TASK 943
291 812 41	Hydraulic alternating current motor pump (ACMP) pressure and case drain filter module: Differential pressure indicator on case drain filter is extended - left system.		29-11 TASK 943
291 812 42	Hydraulic alternating current motor pump (ACMP) pressure and case drain filter module: Differential pressure indicator on case drain filter is extended - right system.		29-11 TASK 943
291 813 01	Hydraulic alternating current motor pump (ACMP) pressure and case drain filter module: Differential pressure indicator on pressure filter is extended - C1 system.		29-11 TASK 943
291 813 02	Hydraulic alternating current motor pump (ACMP) pressure and case drain filter module: Differential pressure indicator on pressure filter is extended - C2 system.		29-11 TASK 943
291 813 41	Hydraulic alternating current motor pump (ACMP) pressure and case drain filter module: Differential pressure indicator on pressure filter is extended - left system.		29-11 TASK 943
291 813 42	Hydraulic alternating current motor pump (ACMP) pressure and case drain filter module: Differential pressure indicator on pressure filter is extended - right system.		29-11 TASK 943

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 116
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 814 01	Hydraulic air driven pump (ADP) pressure and case drain filter module: Differential pressure indicator on case drain filter is extended - C1 system.		29-11 TASK 944
291 814 02	Hydraulic air driven pump (ADP) pressure and case drain filter module: Differential pressure indicator on case drain filter is extended - C2 system.		29-11 TASK 944
291 815 01	Hydraulic air driven pump (ADP) pressure and case drain filter module: Differential pressure indicator on pressure filter is extended - C1 system.		29-11 TASK 944
291 815 02	Hydraulic air driven pump (ADP) pressure and case drain filter module: Differential pressure indicator on pressure filter is extended - C2 system.		29-11 TASK 944
291 816 01	Hydraulic engine driven pump (EDP) pressure and case drain filter module: Differential pressure indicator on case drain filter is extended - C1 system.		29-11 TASK 945
291 816 02	Hydraulic engine driven pump (EDP) pressure and case drain filter module: Differential pressure indicator on case drain filter is extended - C2 system.		29-11 TASK 945
291 817 01	Hydraulic engine driven pump (EDP) pressure and case drain filter module: Differential pressure indicator on pressure filter is extended - C1 system.		29-11 TASK 945
291 817 02	Hydraulic engine driven pump (EDP) pressure and case drain filter module: Differential pressure indicator on pressure filter is extended - C2 system.		29-11 TASK 945
291 818 01	Hydraulic air drive unit (ADU) turbine gearbox assembly: Differential pressure indicator on oil filter is extended - C1 system.		29-11 TASK 946
291 818 02	Hydraulic air drive unit (ADU) turbine gearbox assembly: Differential pressure indicator on oil filter is extended - C2 system.		29-11 TASK 946
291 819 41	Hydraulic return filter module: Differential pressure indicator is extended - left system.		29-11 TASK 942
291 819 42	Hydraulic return filter module: Differential pressure indicator is extended - right system.		29-11 TASK 942
291 819 43	Hydraulic return filter module: Differential pressure indicator is extended - center system.		29-11 TASK 942

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 117
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	MAINT MSG	GO TO FIM TASK
291 821 00	Hydraulic reservoir: Center system reservoir fluid level is high and right system reservoir fluid level is low.		29-11 TASK 947
291 822 00	Hydraulic reservoir: right system reservoir fluid level is high and center system reservoir fluid level is low.		29-11 TASK 947
292 001 00	RAT UNLOCKED (EICAS ADVISORY)		29-98 TASK 801
292 011 00	RAT DEPLOY INOP (EICAS STATUS)	24-13801 29-10250 29-10255	24-61 TASK 805 29-21 TASK 805 29-21 TASK 806
292 021 00	RAT GEN HEAT (EICAS STATUS)	29-10252	29-21 TASK 809
292 811 00	Ram air turbine: does not deploy when RAM AIR TURBINE switch pushed during test on the ground.		29-21 TASK 810
293 001 41	HYD SYS PRESS SNSR L (EICAS STATUS)	29-10810	29-11 TASK 835
293 001 42	HYD SYS PRESS SNSR R (EICAS STATUS)	29-10870	29-11 TASK 874
293 001 43	HYD SYS PRESS SNSR C (EICAS STATUS)	29-10980	29-11 TASK 908
293 012 01	HYD PRESS SYS R+C (EICAS CAUTION)		29-98 TASK 801
293 016 41	HYD PRESS SYS L+C+R (EICAS CAUTION)		29-11 TASK 961
293 016 42	HYD PRESS SYS L+R (EICAS CAUTION)		29-98 TASK 801
293 017 02	HYD PRESS SYS L+C (EICAS CAUTION)		29-98 TASK 801
293 021 41	HYD TEMP IND PRI L (EICAS STATUS)	29-10770	29-11 TASK 831
293 021 42	HYD TEMP IND PRI R (EICAS STATUS)	29-10830	29-11 TASK 870
293 022 01	HYD TEMP IND PRI C1 (EICAS STATUS)	29-10890	29-11 TASK 901
293 022 02	HYD TEMP IND PRI C2 (EICAS STATUS)	29-10900	29-11 TASK 902
293 026 41	HYD TEMP IND DEM L (EICAS STATUS)	29-10780	29-11 TASK 832
293 026 42	HYD TEMP IND DEM R (EICAS STATUS)	29-10840	29-11 TASK 871
293 027 01	HYD TEMP IND DEM C1 (EICAS STATUS)	29-10910	29-11 TASK 903
293 027 02	HYD TEMP IND DEM C2 (EICAS STATUS)	29-10920	29-11 TASK 904
293 111 41	HYD PRESS IND PRI L (EICAS STATUS)	29-10790	29-11 TASK 833
293 111 42	HYD PRESS IND PRI R (EICAS STATUS)	29-10850	29-11 TASK 872
293 112 01	HYD PRESS IND PRI C1 (EICAS STATUS)	29-10930	29-11 TASK 905
293 112 02	HYD PRESS IND PRI C2 (EICAS STATUS)	29-10940	29-11 TASK 906
293 116 41	HYD PRESS IND DEM L (EICAS STATUS)	29-10800	29-11 TASK 834
293 116 42	HYD PRESS IND DEM R (EICAS STATUS)	29-10860	29-11 TASK 873
293 117 01	HYD PRESS IND DEM C1 (EICAS STATUS)	29-10950	29-11 TASK 836
293 117 02	HYD PRESS IND DEM C2 (EICAS STATUS)	29-10960	29-11 TASK 875

EFFECTIVITY
ARO ALL

29-FAULT CODE INDEX

D633W103-ARO

Page 118
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
29-10005	Heater (ADP C1) feedback does not agree with command.	29-11 TASK 938
29-10006	Hydraulic Interface Module (HYDIM)(CR) adu 1 htr on signal is invalid.	29-11 TASK 939
29-10007	Heater (ADP C2) feedback does not agree with command.	29-11 TASK 940
29-10008	Hydraulic Interface Module (HYDIM)(CL) heat the RAT and ADP htrs signal is invalid.	29-11 TASK 941
29-10010	C1 demand pump selector (hyd panel) does not agree with selector position.	29-11 TASK 806
29-10020	C2 demand pump selector (hyd panel) does not agree with selector position.	29-11 TASK 807
29-10030	Air Driven Pump (ADP)(C1) overspeed protection function is failed.	29-11 TASK 801
29-10040	Air Driven Pump (ADP)(C2) overspeed protection function is failed.	29-11 TASK 850
29-10050	Air Driven Pump (ADP)(C1) secondary speed does not follow command.	29-11 TASK 809
29-10060	Air Driven Pump (ADP)(C2) secondary speed does not follow command.	29-11 TASK 855
29-10070	Air Driven Pump (ADP)(C1) speed is out of range.	29-11 TASK 843
29-10080	Air Driven Pump (ADP)(C2) speed is out of range.	29-11 TASK 844
29-10090	Air Driven Pump (ADP)(C1) overspeed reset function is failed.	29-11 TASK 810
29-10100	Air Driven Pump (ADP)(C2) overspeed reset function is failed.	29-11 TASK 856
29-10110	Air Driven Pump (ADP)(C1) reserve power function is inoperative.	29-11 TASK 808
29-10120	Air Driven Pump (ADP)(C2) reserve power function is inoperative.	29-11 TASK 851
29-10130	Air Driven Pump (ADP)(C1) pneumatic power is not available.	29-11 TASK 845
29-10140	Air Driven Pump (ADP)(C2) pneumatic power is not available.	29-11 TASK 846
29-10150*	Reservoir (center) fluid quantity is low.	29-11 TASK 894
29-10160	FSEU 1 isolation feedback signal does not follow command.	29-11 TASK 802
29-10170	FSEU 2 isolation feedback signal does not follow command.	29-11 TASK 852
29-10180	Air Driven Pump (ADP)(C1) auto command circuit is shorted.	29-11 TASK 803
29-10190	Air Driven Pump (ADP)(C2) auto command circuit is shorted.	29-11 TASK 853
29-10200	Ram Air Turbine (RAT) auto deploy circuit from HYDIM (CR) is open or shorted.	29-21 TASK 801
29-10210	Ram Air Turbine (RAT) auto deploy circuit from HYDIM (CL) is open or shorted.	29-21 TASK 804
29-10220	Air Driven Pump (ADP)(C1) control power is not available.	29-11 TASK 929

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

EFFECTIVITY
ARO ALL

29-MAINT MSG INDEX

D633W103-ARO

Page 101
Jan 05/2013



777-200/300 FAULT ISOLATION MANUAL

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
29-10230	Air Driven Pump (ADP)(C2) control power is not available.	29-11 TASK 930
29-10240	Ram Air Turbine (RAT) auto deploy power to HYDIM (CR) is not available.	29-21 TASK 802
29-10250	Ram Air Turbine (RAT) auto deploy power to HYDIM (CL) is not available.	29-21 TASK 805
29-10252	Ram Air Turbine (RAT) heater feedback does not agree with command.	29-21 TASK 809
29-10255	RAT Stow valve position switch (Checkout Module) indicates the stow valve is not in the FLIGHT position.	29-21 TASK 806
29-10260	Valve (reserve isolation) command circuit is failed.	29-11 TASK 804
29-10270	Isolation Valve (nose gear) command circuit is failed.	29-11 TASK 811
29-10280	Relay (L/G Auto-off B) command circuit is failed.	29-11 TASK 857
29-10290	Relay (L/G Auto-off A) command circuit is failed.	29-11 TASK 812
29-10330*	Reservoir (right) fluid quantity is low.	29-11 TASK 827
29-10340*	Reservoir (left) fluid quantity is low.	29-11 TASK 813
29-10350	Air Driven Pump (ADP)(C1) select switch position is invalid.	29-11 TASK 847
29-10360	Air Driven Pump (ADP)(C1) pressure input is invalid.	29-11 TASK 848
29-10370	Air Driven Pump (ADP)(C2) select switch position is invalid.	29-11 TASK 849
29-10380	Air Driven Pump (ADP)(C1) temperature input is invalid.	29-11 TASK 936
29-10390	Reservoir (center) fluid quantity input is invalid.	29-11 TASK 937
29-10400	Air Driven Pump (ADP)(C1) Left ADP air is available signal is invalid.	29-11 TASK 888
29-10410	Air Driven Pump (ADP)(C2) Right ADP air is available signal is invalid.	29-11 TASK 889
29-10420	Logic Speed Control Unit (LSCU)(ADP C1) has a fault.	29-11 TASK 814
29-10430	Air Driven Pump (ADP)(C1) does not follow command.	29-11 TASK 815
29-10440	Air Driven Pump (ADP)(C1) has an overspeed condition or an overspeed circuit is failed.	29-11 TASK 816
29-10450	Turbine Gearbox Assembly (TGA)(ADP C1) has an internal fault.	29-11 TASK 817
29-10460	Turbine Gearbox Assembly (TGA)(ADP C2) has an internal fault.	29-11 TASK 861
29-10470	Logic Speed Control Unit (LSCU)(ADP C2) has a fault.	29-11 TASK 858
29-10480	Air Driven Pump (ADP)(C2) does not follow command.	29-11 TASK 859
29-10490	Air Driven Pump (ADP)(C2) has an overspeed condition or an overspeed circuit is failed.	29-11 TASK 860
29-10500	Air Driven Pump (ADP)(C1) case drain temperature is high.	29-11 TASK 818

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

EFFECTIVITY
ARO ALL

29-MAINT MSG INDEX

D633W103-ARO

Page 102
May 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
29-10510	Air Driven Pump (ADP)(C1) output pressure is out of range.	29-11 TASK 819
29-10520	Air Driven Pump (ADP)(C2) case drain temperature is high.	29-11 TASK 820
29-10530	Air Driven Pump (ADP)(C2) output pressure is out of range.	29-11 TASK 862
29-10540	Alternating Current Motor Pump (ACMP)(C1) case drain temperature is high.	29-11 TASK 895
29-10550	Alternating Current Motor Pump (ACMP)(C1) output pressure is out of range.	29-11 TASK 896
29-10560	Alternating Current Motor Pump (ACMP)(C2) case drain temperature is high.	29-11 TASK 897
29-10570	Alternating Current Motor Pump (ACMP)(C2) output pressure is out of range.	29-11 TASK 898
29-10580	Center hydraulic system pressure is low.	29-11 TASK 863
29-10590	Left hydraulic system pressure is low.	29-11 TASK 821
29-10600	Right hydraulic system pressure is low.	29-11 TASK 822
29-10610	Alternating Current Motor Pump (ACMP)(L) case drain temperature is high.	29-11 TASK 823
29-10620	Alternating Current Motor Pump (ACMP)(L) output pressure is out of range.	29-11 TASK 899
29-10640	Engine Driven Pump (EDP)(L) case drain temperature is high.	29-11 TASK 824
29-10650*	Engine Driven Pump (EDP)(L) output pressure is out of range.	29-11 TASK 825
29-10660	Supply shutoff valve (EDP L) is not in commanded position.	29-11 TASK 826
29-10670	Relay (L/G Auto-off A) is not in commanded position.	29-11 TASK 828
29-10680	Relay (L/G Auto-off B) is not in commanded position.	29-11 TASK 869
29-10690	Isolation Valve (reserve) is not in commanded position.	29-11 TASK 829
29-10700	Alternating Current Motor Pump (ACMP)(R) case drain temperature is high.	29-11 TASK 864
29-10710	Alternating Current Motor Pump (ACMP)(R) pressure is out of range.	29-11 TASK 900
29-10730	Engine Driven Pump (EDP)(R) case drain temperature is high.	29-11 TASK 866
29-10740*	Engine Driven Pump (EDP)(R) output pressure is out of range.	29-11 TASK 867
29-10750	Supply shutoff valve (EDP R) is not in commanded position.	29-11 TASK 868
29-10760	Isolation Valve (nose gear) is not in commanded position.	29-11 TASK 830
29-10770	Temperature transducer (EDP L) signal is out of range.	29-11 TASK 831
29-10780	Temperature transducer (ACMP L) signal is out of range.	29-11 TASK 832
29-10790	Pressure transducer (EDP L) signal is out of range.	29-11 TASK 833
29-10800	Pressure transducer (ACMP L) signal is out of range.	29-11 TASK 834
29-10810	Pressure transducer (system left) signal is out of range.	29-11 TASK 835

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

EFFECTIVITY
ARO ALL

29-MAINT MSG INDEX

D633W103-ARO

Page 103
May 05/2016



777-200/300
FAULT ISOLATION MANUAL

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
29-10820	Pressure transducer (left truck positioner) signal is out of range.	29-11 TASK 805
29-10830	Temperature transducer (EDP R) signal is out of range.	29-11 TASK 870
29-10840	Temperature transducer (ACMP R) signal is out of range.	29-11 TASK 871
29-10850	Pressure transducer (EDP R) signal is out of range.	29-11 TASK 872
29-10860	Pressure transducer (ACMP R) signal is out of range.	29-11 TASK 873
29-10870	Pressure transducer (system right) signal is out of range.	29-11 TASK 874
29-10880	Pressure transducer (right truck positioner) signal is out of range.	29-11 TASK 854
29-10890	Temperature transducer (ACMP C1) signal is out of range.	29-11 TASK 901
29-10900	Temperature transducer (ACMP C2) signal is out of range.	29-11 TASK 902
29-10910	Temperature transducer (ADP C1) signal is out of range.	29-11 TASK 903
29-10920	Temperature transducer (ADP C2) signal is out of range.	29-11 TASK 904
29-10930	Pressure transducer (ACMP C1) signal is out of range.	29-11 TASK 905
29-10940	Pressure transducer (ACMP C2) signal is out of range.	29-11 TASK 906
29-10950	Pressure transducer (ADP C1) signal is out of range.	29-11 TASK 836
29-10960	Pressure transducer (ADP C2) signal is out of range.	29-11 TASK 875
29-10970	Pressure transducer (Ram Air Turbine) signal is out of range.	29-11 TASK 907
29-10980	Pressure transducer (system center) signal is out of range.	29-11 TASK 908
29-10990	Quantity transmitter (reservoir left) signal is out of range.	29-11 TASK 837
29-10995	Temperature transducer (reservoir left) signal is out of range.	29-11 TASK 909
29-10996	Pressure switch (reservoir left) indicates low air pressure.	29-11 TASK 931
29-11000	Quantity transmitter (reservoir right) signal is out of range.	29-11 TASK 876
29-11005	Temperature transducer (reservoir right) signal is out of range.	29-11 TASK 910
29-11006	Pressure switch (reservoir right) indicates low air pressure.	29-11 TASK 932
29-11010	Quantity transmitter (reservoir center) signal is out of range.	29-11 TASK 911
29-11015	Temperature transducer (reservoir center) signal is out of range.	29-11 TASK 912
29-11016	Pressure switch (reservoir center) indicates low air pressure.	29-11 TASK 933
29-11020	Air Driven Pump (ADP)(C1) status A,B,C signals do not follow command.	29-11 TASK 840
29-11030	Air Driven Pump (ADP)(C2) status A,B,C signals do not follow command.	29-11 TASK 879
29-11040	Air Driven Pump (ADP)(C1) runs without command.	29-11 TASK 841
29-11050	Air Driven Pump (ADP)(C2) runs without command.	29-11 TASK 915
29-11060	Hydraulic Interface Module (HYDIM)(L) has an internal fault.	29-11 TASK 928

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

EFFECTIVITY
ARO ALL

29-MAINT MSG INDEX

D633W103-ARO

Page 104
Jan 05/2013



777-200/300 FAULT ISOLATION MANUAL

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
29-11070	Hydraulic Interface Module (HYDIM)(R) has an internal fault.	29-11 TASK 928
29-11080	Hydraulic Interface Module (HYDIM)(CR) has an internal fault.	29-11 TASK 928
29-11090	Hydraulic Interface Module (HYDIM)(CL) has an internal fault.	29-11 TASK 928
29-11100	Air Driven Pump (ADP)(C1) speed is out of range.	29-11 TASK 838
29-11110	Air Driven Pump (ADP)(C2) speed is out of range.	29-11 TASK 877
29-12000	ELCU (HYD ACMP L) in P200 sensed position does not agree with commanded position.	29-11 TASK 890
29-12005	ELCU (HYD ACMP R) in P100 sensed position does not agree with commanded position.	29-11 TASK 891
29-12010	ELCU (HYD ACMP C2) in P200 sensed position does not agree with commanded position.	29-11 TASK 892
29-12015	ELCU (HYD ACMP C1) in P100 sensed position does not agree with commanded position.	29-11 TASK 893
29-17005	Contactor (HYD ACMP R) in P100 is not in commanded position.	29-11 TASK 948
29-17006	Contactor (HYD ACMP C1) in P100 is not in commanded position.	29-11 TASK 949
29-17007	Contactor (HYD ACMP L) in P200 is not in commanded position.	29-11 TASK 950
29-17008	AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Contactor (HYD ACMP C2) in P200 IS not in commanded position. AIMS-2, CMCF LDI 3114-BCG-00W-16; Contactor (HYD ACMP C2) in P200 is not in commanded position.	29-11 TASK 951
29-17009	P200 Power Panel Controller HYD ACMP C2 function is disabled.	29-11 TASK 952
29-17010	P100 Power Panel Controller HYD ACMP C1 function is disabled.	29-11 TASK 953
29-17011	P100 Power Panel Controller HYD ACMP R function is disabled.	29-11 TASK 954
29-17020	AIMS-2, CMCF LDI 3114-BCG-00W-16; Left ACMP Ground Fault has Tripped. AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Left ACMP Ground Fault has tripped.	29-11 TASK 956

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

EFFECTIVITY
ARO ALL

29-MAINT MSG INDEX

D633W103-ARO

Page 105
Sep 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
29-17021	AIMS-2, CMCF LDI 3114-BCG-00W-16; Right ACMP Ground Fault has Tripped. AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; Right ACMP Ground Fault has tripped.	29-11 TASK 957
29-17022	AIMS-2, CMCF LDI 3114-BCG-00W-16; C1 ACMP Ground Fault has Tripped. AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; C1 ACMP Ground Fault has tripped.	29-11 TASK 958
29-17023	AIMS-2, CMCF LDI 3114-BCG-00W-16; C2 ACMP Ground Fault has Tripped. AIMS-1, CPM/Comm OPS S/W 3166-HNP-002-11; AIMS-2, CMCF LDI 3111-BCG-00W-13; AIMS-2, CMCF LDI 3116-BCG-00W-14; AIMS-2, CMCF LDI 3117-BCG-00W-15; C2 ACMP Ground Fault has tripped.	29-11 TASK 959
29-17024	P200 Power Panel Controller HYD ACMP L function is disabled.	29-11 TASK 955
29-18891	Hydraulic Interface Module (HYDIM)(L) has no output on HYDIM data out-17 ARINC 429 Bus.	29-11 TASK 839
29-18892	Hydraulic Interface Module (HYDIM)(R) has no output on HYDIM data out-17 ARINC 429 Bus.	29-11 TASK 878
29-18893	Hydraulic Interface Module (HYDIM)(CL) has no output on HYDIM data out-04 ARINC 429 Bus.	29-11 TASK 913
29-18894	Hydraulic Interface Module (HYDIM)(CR) has no output on HYDIM data out-04 ARINC 429 Bus.	29-11 TASK 914
29-19905	Hydraulic Interface Module (HYDIM)(L) has no input from ARINC Signal Gateway (left), LSCF on ASG Global Bus.	29-11 TASK 920
29-19906	Hydraulic Interface Module (HYDIM)(R) has no input from ARINC Signal Gateway (left), RSCF on ASG Global Bus.	29-11 TASK 921
29-19907	Hydraulic Interface Module (HYDIM)(CL) has no input from ARINC Signal Gateway (left), LSCF on ASG Global Bus.	29-11 TASK 922
29-19908	Hydraulic Interface Module (HYDIM)(CR) has no input from ARINC Signal Gateway (left), RSCF on ASG Global Bus.	29-11 TASK 923
29-19909	Hydraulic Interface Module (HYDIM)(L) has no input from ARINC Signal Gateway (right), LSCF on ASG Global Bus.	29-11 TASK 924

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

EFFECTIVITY
ARO ALL

29-MAINT MSG INDEX

D633W103-ARO

Page 106
Sep 05/2016



**777-200/300
FAULT ISOLATION MANUAL**

MAINT MESSAGE	MESSAGE TEXT	GO TO FIM TASK
29-19910	Hydraulic Interface Module (HYDIM)(R) has no input from ARINC Signal Gateway (right), RSCF on ASG Global Bus.	29-11 TASK 925
29-19911	Hydraulic Interface Module (HYDIM)(CL) has no input from ARINC Signal Gateway (right), LSCF on ASG Global Bus.	29-11 TASK 926
29-19912	Hydraulic Interface Module (HYDIM)(CR) has no input from ARINC Signal Gateway (right), RSCF on ASG Global Bus.	29-11 TASK 927

*If the MAT shows LATCHED for the correlated EICAS message, then you must erase the EICAS message after you complete the FIM task.

EFFECTIVITY
ARO ALL

29-MAINT MSG INDEX

D633W103-ARO

Page 107
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

801. Air-Driven Pump 1 Speed Control Function Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10030.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Replace the air-driven pump (ADP) 1 logic speed control unit (LSCU), M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
2) If the maintenance message shows on the ground test display, then continue.
(2) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
2) If the maintenance message shows on the ground test display, then continue.
(3) Do this check of the wiring:
(a) Remove the HYDIM-CR card, A4, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
(b) Disconnect connector DM29306A from the ADP 1 LSCU.
(c) Do a wiring check between these pins of connector XA4 in the RSCF, P84, and connector DM29306A at the ADP 1 LSCU (SSM 29-11-38):

XA4	DM29306A
pin 11	pin 8
pin 12	pin 8

EFFECTIVITY
ARO ALL

29-11 TASK 801

D633W103-ARO

Page 201
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- (d) Do a continuity check from pins 3 and 10 of connector DM29306A at the ADP 1 LSCU, M29306, to structure ground (SSM 29-11-38).
- (e) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29306A.
 - 3) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

802. HYDIM-CL Isolation Signal to FSEU 1 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10160.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Center Hydraulic Isolation System ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the flap/slat electronic unit 1 (FSEU 1), M27001.

These are the tasks:

Flap/Slat Electronics Unit (FSEU) Removal, AMM TASK 27-51-01-000-801,
Flap/Slat Electronics Unit (FSEU) Installation, AMM TASK 27-51-01-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring:

EFFECTIVITY
ARO ALL

29-11 TASKS 801-802

D633W103-ARO

Page 202
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Remove FSEU 1, M27001. To remove it, do this task: Flap/Slat Electronics Unit (FSEU) Removal, AMM TASK 27-51-01-000-801.
- (c) Do a wiring check between these pins of connector XA4 in the LSCF, P85, and connector DM27001AA at the E1-6 shelf (SSM 29-11-37):

XA4	DM27001AA
pin 18	pin J6

- (d) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-install FSEU 1, M27001. To install it, do this task: Flap/Slat Electronics Unit (FSEU) Installation, AMM TASK 27-51-01-400-801.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.

END OF TASK

803. Air-Driven Pump 1 Auto Control Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10180.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE or NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the center-right hydraulic interface system (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASKS 802-803

D633W103-ARO

Page 203
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the air driven pump (ADP) 1 logic speed control unit (LSCU), M29306.
- These are the tasks:
- Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,
- Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the air-driven pump (ADP) 1 modulating shutoff valve (MSOV), V29305:
- (a) Set the power switch for the HYDIM-CR card, to the OFF position.
- NOTE: Use the power control decal on the RSCF, P84, to find the appropriate switch.
- (b) Disconnect connector DV29305 from the MSOV, V29305.
 - (c) Measure the resistance between pins 1 and 2 of connector DV29305 on the MSOV, V29305 (SSM 29-11-38).
 - (d) If the resistance is less than 30 ohms, then do these steps:
 - 1) Replace the MSOV, V29305.These are the tasks:

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM
TASK 29-11-14-000-801,

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM
TASK 29-11-14-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) Set the power switch for the HYDIM-CR card, to the ON position.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (e) If the resistance is greater than 30 ohms, then continue.
- (4) Do this check of the wiring:
- (a) Disconnect connector DM29306B from the ADP 1 LSCU, M29306.
 - (b) Do a wiring check between these pins of connector DM29306B, at the LSCU, M29306, and connector DV29305, at the MSOV, V29305 (SSM 29-11-38):

EFFECTIVITY
ARO ALL

29-11 TASK 803

D633W103-ARO

Page 204
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

DM29306B

pin 14 pin 1

DV29305

- (c) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-connect connectors DV29305 and DM29306B.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

- (d) If you do not find a problem with the wiring, then continue.

- (e) Re-connect connectors DV29305 and DM29306B.

- (5) Do this check of the wiring:

- (a) Remove HYDIM-CR card, A4 in the (RSCF), P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29306A from the ADP 1 LSCU, M29306.
- (c) Do a wiring check between these pins of connector XA4 in the RSCF, P84 and connector DM29306A for the ADP 1 LSCU, M29306 (SSM 29-11-38):

XA4

pin 11 pin 8

pin 12 pin 8

DM29306A

- (d) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 3) Re-connect connector DM29306A.
- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

804. Reserve Isolation Valve Command Circuit Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10260.

EFFECTIVITY
ARO ALL

29-11 TASKS 803-804

D633W103-ARO

Page 205
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the reserve brakes and steering relay, K29002, in the P110 panel (SSM 29-11-37).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the reserve brakes and steering relay, K29002, in the P110 left power management panel (SSM 29-11-37).
 - (b) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (c) Do a wiring check between these pins at connector XA4 in the LSCF, P85, and connector DK29002 at the P110 left power management panel (SSM 29-11-37):

XA4

DK29002

pin 33 pin X2

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the reserve brakes and steering relay, K29002, in the P110 panel (SSM 29-11-37).
 - 3) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 804

D633W103-ARO

Page 206
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

805. Left Truck Positioner Pressure Transducer Signal to HYDIM Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10820.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left truck positioner pressure transducer, M29111 (AMM 32-32-22/401).
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29111 from the left truck positioner pressure transducer, M29111 (SSM 29-11-12).
 - (c) Do a wiring check between these pins at connector XA17 in the LSCF, P85 and connector DM29111 at the left truck positioner pressure transducer, M29111 (SSM 29-11-12):

XA17	DM29111
pin 71	pin 3
pin 73	pin 2

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29111 to the left truck positioner pressure transducer, M29111 (SSM 29-11-12).

EFFECTIVITY
ARO ALL

29-11 TASKS 804-805

D633W103-ARO

Page 207
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

———— END OF TASK ————

806. C1 Demand Pump Selector and Selector Position Do not Agree - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10010.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the maintenance page on the MFD. to show this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (a) Set the C1 AIR DEMAND selector to the AUTO, then ON position.
 - (b) If the SEL on the maintenance page does not show AUTO, then ON, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 23):
 - a) 23-41110
 - b) 23-42110
 - c) 23-43110
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
 - c) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- d) If the maintenance message 29-10010 does not show on the ground test display, you corrected the fault.
- 3) If the MAT shows NOT ACTIVE for the maintenance messages specified above (or if the messages do not show), then continue.
 - a) Replace the C1 demand selector, S7, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-38).
 - b) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASKS 805-806

D633W103-ARO

Page 208
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- c) If the maintenance message 29-10010 does not show on the ground test display, you corrected the fault.
- (c) If the SEL on the maintenance page shows AUTO, then ON, then continue.
- (2) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the ARINC 629 signal gateway (ASG), A12, in the left system card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the ARINC 629 signal gateway (ASG), A15, in the right system card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

807. C2 Demand Pump Selector and Selector Position Do not Agree - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10020.

EFFECTIVITY
ARO ALL

29-11 TASKS 806-807

D633W103-ARO

Page 209
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the maintenance page on the MFD. To show this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (a) Set the C2 AIR DEMAND selector to the AUTO, then ON position.
 - (b) If the SEL on the maintenance page does not show AUTO, then ON, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 23):
 - a) 23-41120
 - b) 23-42120
 - c) 23-43120
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
 - c) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - d) If the maintenance message 29-10020 does not show on the ground test display, you corrected the fault.
 - 3) If the MAT shows NOT ACTIVE for the maintenance messages specified above (or if the messages do not show), then continue.
 - a) Replace the C2 air demand selector, S8, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-39).
 - b) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - c) If the maintenance message 29-10020 does not show on the ground test display, you corrected the fault.
 - (c) If the SEL on the maintenance page shows AUTO, then ON, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 807

D633W103-ARO

Page 210
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the ARINC 629 signal gateway (ASG), A12, in the left system card file (LSCF), P85.
These are the tasks:
ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the ARINC 629 signal gateway (ASG), A15, in the right system card file (RSCF), P84.
These are the tasks:
ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

808. Air-Driven Pump 1 Reserve Power Function Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10110.

B. Fault Isolation Procedure

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Do this check of the wiring from the ADP 1 LSCU to HYDIM:
- (a) Remove the HYDIM-CR card, A4, in the right systems card file (RSCF), P84, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Remove the connector DM29306A from the ADP LSCU C1, M29306.

EFFECTIVITY
ARO ALL

29-11 TASKS 807-808

D633W103-ARO

Page 211
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- (c) Do a wiring check between these pins of connector DM29306A at the ADP 1 LSCU, M29306, and connector XA4 at the RSCF, P84.

DM29306A	XA4
pin 7	pin 21
pin 14	pin 33

- (d) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-install the HYDIM-CR card, A4, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 3) Re-connect connector DM29306A.
- 4) Do this ground test on the MAT: 29, Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- b) If the maintenance message shows on the ground test display, then continue.

- (e) If you do not find a problem with the wiring, then continue.

- (f) Re-install the HYDIM-CR card, A4, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801

- (2) Replace the ADP 1 wiring harness between the LSCU and turbine gearbox assembly (TGA) (SSM 29-11-38).

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

- (3) Look at the air supply maintenance page on the MFD. To show this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.

- (a) Look at the APU shutoff valve and manifold duct pressure indications on the air supply maintenance page.

- (b) If the APU shutoff valve indication shows CLOSED, then do these steps:

- 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):

- a) 36-10100
- b) 36-10110
- c) 36-10120
- d) 36-10130

- 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 808

D633W103-ARO

Page 212
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- a) Find the maintenance message in the applicable FIM Maintenance Message Index.
- b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message 29-10110 does not show on the ground test display, you corrected the fault.
- (c) If the APU shutoff valve indication shows OPEN, then continue.
- (d) If the manifold duct pressure indication shows less than 20 psig, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10180
 - b) 36-10190
 - c) 36-10200
 - d) 36-10230
 - e) 36-10240
 - f) 36-10250
 - g) 36-10260
 - h) 36-10270
 - i) 36-10280
 - j) 36-10320
 - k) 36-10330
 - l) 36-10340
 - m) 36-10350
 - n) 36-10360
 - o) 36-10370
 - p) 38-10380
 - q) 36-10390
 - r) 36-10400
 - s) 36-10460
 - t) 36-10470
 - u) 36-10480
 - v) 36-10490
 - w) 36-10500
 - x) 36-10510
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.

EFFECTIVITY
ARO ALL

29-11 TASK 808

D633W103-ARO

Page 213
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
 - NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - a) If the maintenance message 29-10110 does not show on the ground test display, you corrected the fault.
 - (e) If the APU shutoff valve indication shows OPEN and manifold duct pressure indication shows greater than 20 psig, then continue.
- (4) Replace the air-driven pump (ADP) 1 logic speed control unit (LSCU), M29306
These are the tasks:
Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,
Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
 - NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (5) Replace center-right hydraulic interface module (HYDIM-CR), A4, in the right systems card file (RSCF), P84,
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) Do this ground test on the MAT: 29, Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
 - NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the ADP 1 turbine gearbox assembly, M29310.
These are the tasks:
Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,
Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
 - NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASK 808

D633W103-ARO

Page 214
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

809. ADP 1 Secondary Speed Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10050.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Replace the air-driven pump (ADP) 1 turbine gearbox assembly (TGA), M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (c) If the maintenance message shows on the ground test display, then continue.

- (2) Replace the ADP 1 logic speed control unit (LSCU), M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (c) If the maintenance message shows on the ground test display, then continue.

- (3) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 808-809

D633W103-ARO

Page 215
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring:
- (a) Remove the HYDIM-CR card, A4, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29306A from the ADP 1 LSCU, M29306.
- (c) Do a wiring check between these pins of connector DM29306A at the ADP 1 LSCU, M29306, and connector XA4 at the RSCF, P84 (SSM 29-11-38):
- | DM29306A | XA4 |
|------------------|------------|
| pin 7 | pin 21 |
| pin 11 | pin 22 |
| pin 12 | pin 28 |
| pin 13 | pin 26 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29306A.
 - 3) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 5) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— END OF TASK —————

810. ADP 1 Overspeed Reset Function Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10090.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Do this check of the overspeed monopole wiring:
- (a) Disconnect connector DM29310B from the air-driven pump (ADP) 1 turbine gearbox assembly (TGA), M29310.
- (b) Do a continuity check between pins 3 and 4 of connector DM29310B (SSM 29-11-38).
- (c) If you find a problem with the wiring, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASKS 809-810

D633W103-ARO

Page 216
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- 1) Replace the ADP 1 TGA, M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,
Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 3) If the maintenance message does not show on the ground test display, you corrected the fault.

(d) If you do not find a problem with the wiring, then continue.

- (2) Do this check of the wiring from the TGA to the LSCU:

(a) Disconnect connector DM29306B from the ADP 1 logic speed control unit (LSCU), M29306.

(b) Do a wiring check between these pins of connector DM29310B at the ADP 1 TGA, M29310, and connector DM29306B at the ADP 1 LSCU (SSM 29-11-38):

DM29310B

pin 3
pin 4

DM29306B

pin 8
pin 9

- (c) If you find a problem with the wiring, then do these steps:

1) Repair the wiring.

2) Re-connect connectors DM29310B and DM29306B.

3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 4) If the maintenance message does not show on the ground test display, you corrected the fault.

(d) If you do not find a problem with the wiring, then continue.

(e) Re-connect connectors DM29310B and DM29306B.

- (3) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

(a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

(b) If the maintenance message does not show on the ground test display, then you corrected the fault.

(c) If the maintenance message shows on the ground test display, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 810

D633W103-ARO

Page 217
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- (4) Replace the ADP 1 LSCU, M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (c) If the maintenance message shows on the ground test display, then continue.

- (5) Do this check of the wiring:

- (a) Remove the HYDIM-CR card, A4, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.

- (b) Disconnect connector DM29306A from the ADP 1 LSCU, M29306.

- (c) Do a wiring check between these pins of connector DM29306A at the ADP 1 LSCU, M29306, and connector XA4 at the RSCF, P84 (SSM 29-11-38):

DM29306A	XA4
pin 7	pin 21

- (d) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.

- 2) Re-connect connector DM29306A.

- 3) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

811. Isolation Valve (Nose Gear) Command Circuit Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10270.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.

- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.

EFFECTIVITY
ARO ALL

29-11 TASKS 810-811

D633W103-ARO

Page 218
May 05/2013



777-200/300 FAULT ISOLATION MANUAL

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the nose gear isolation valve relay, K29003, in the P310 standby power management panel (SSM 29-11-37).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the ground test does not show on the ground test display, you corrected the fault.
 - (c) If the ground test shows on the ground test display, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4 in the left system card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the ground test does not show on the ground test display, you corrected the fault.
 - (c) If the ground test shows on the ground test display, then continue.
- (3) Do this check of the power wiring:
 - (a) Remove the nose gear isolation valve relay, K29003 from the P310 standby power management panel (SSM 29-11-37).
 - (b) Do a check for 28V DC between pin X1 of connector DK29003 of the nose gear isolation valve relay, K29003, and structure ground (SSM 29-11-37).
 - (c) If there is not 28V DC at pin X1 of connector DK29003, then do these steps:
 - 1) Open the P310 standby power management panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C29610.
 - 3) If there is not 28V DC at the circuit breaker, then do these steps:
 - a) Replace this circuit breaker:
(SSM 29-11-37)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	10	C29610	NOSE GEAR ISLN VALVE

- b) Re-install the nose gear isolation valve relay, K29003.
 - c) Do this ground test on the MAT: 29 Hydraulic system, Operational Test, Center Hydraulic Isolation System.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 4) If there is 28V DC at the circuit breaker, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 811

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 219
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) Repair the wiring between these pins of connector DK29003 of the nose gear isolation valve relay, K29003, and the load terminal of circuit breaker C29610 (SSM 29-11-37):

DK29003	C29610
pin X1	pin 2

- b) Re-install the nose gear isolation valve relay, K29003.
- c) Do this ground test on the MAT: 29 Hydraulic system, Operational Test, Center Hydraulic Isolation System.
- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is 28V DC at pin X1 of connector DK29003, then continue.
- (4) Do this check of the command wiring:
- (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Do a wiring check between these pins of connector DK29003 at the P310 standby power management panel and connector XA4 at the LSCF, P85 (SSM 29-11-37):

DK29003	XA4
pin X2	pin 27

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the nose gear isolation valve relay, K29003 (SSM 29-11-37).
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic system, Operational Test, Center Hydraulic Isolation System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

812. Landing Gear Auto Off A Command Circuit Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10290.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay B.
- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 811-812

D633W103-ARO

Page 220
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Replace the landing gear auto off A relay, K32014 in the P110 left power management panel (SSM 32-31-11).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay A.
 - (b) If the ground test does not show on the ground test display, you corrected the fault.
 - (c) If the ground test shows on the ground test display, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay A.
 - (b) If the ground test does not show on the ground test display, you corrected the fault.
 - (c) If the ground test shows on the ground test display, then continue.
- (3) Do this check of the power wiring:
 - (a) Remove the landing gear auto off A relay, K32014 in the P110 left power management panel (SSM 32-31-11).
 - (b) Do a check for 28V DC between pin X1 of connector DK29014 of the landing gear auto off A relay, K32014, and structure ground (SSM 32-31-11).
 - (c) If there is not 28V DC at pin X1 of connector DK29014, then do these steps:
 - 1) Open the P11 pilot's overhead circuit breaker panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C32616.
 - 3) If there is not 28V DC at the circuit breaker, then do these steps:
 - a) Replace this circuit breaker:
(SSM 32-31-11)

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	9	C32616	LDG GEAR RETR AUTO OFF

- b) Re-install the landing gear auto off A relay, K32014.
 - c) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay A.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 4) If there is 28V DC at the circuit breaker, then do these steps:
 - a) Repair the wiring between pin X1 of connector DK32014 of the landing gear auto off A relay, K32014, and the load terminal of circuit breaker C32616 (SSM 32-31-11):

DK32014	C32616
pin X1	pin 2

EFFECTIVITY
ARO ALL

29-11 TASK 812

D633W103-ARO

Page 221
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- b) Re-install the landing gear auto off A relay, K32014.
- c) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay A.
- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is 28V DC at pin X1 of connector DK32014, then continue.
- (4) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Do a wiring check between these pins of connector DK32014 at the P110 left power management panel and connector XA17 at the LSCF, P85 (SSM 32-31-11):

DK32014	XA17
pin X2	pin 33
- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 3) Re-install the landing gear auto off A relay, K32014.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay A.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

813. Reservoir (Left) Fluid Quantity Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10340.

B. Initial Evaluation

- (1) Do the applicable steps from this task to verify the hydraulic fluid level at the left system reservoir:
Hydraulic Reservoir Fluid Level Check, AMM TASK 12-12-01-610-801,
- (2) If the fluid level is too low, then do the Fault Isolation Procedure - Leakage below.
NOTE: The lower sight glass on the hydraulic reservoir will be dark if the fluid level is normal.
The lower sight glass will show red if the fluid level is too low.
- (3) If the fluid level is normal, then continue.
- (4) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure - Indication below.
- (5) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 812-813

D633W103-ARO

Page 222
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure - Indication

- (1) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left reservoir quantity transmitter, M29105.

These are the tasks:

Reservoir Quantity Transmitter Removal, AMM TASK 29-33-02-000-801,

Reservoir Quantity Transmitter Installation, AMM TASK 29-33-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

D. Fault Isolation Procedure - Leakage

- (1) Do a check of the external hydraulic leakage:
 - (a) For the left hydraulic system, do this task: Main Hydraulic Systems External Leakage Check, AMM TASK 29-11-00-200-804.
 - (b) If the external hydraulic leakage is not within the maintenance limits, then do these steps:
 - 1) Repair the leakage.
 - 2) For the left hydraulic system, do this task: Hydraulic Reservoir Filling, AMM TASK 12-12-01-610-802.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the external hydraulic leakage is within the maintenance limits, then continue.
- (2) If the hydraulic fluid level continues to decrease and the external hydraulic leakage is within the maintenance limits, then do this task:

Reservoir Fluid Quantity Problems - Fault Isolation, 29-11 TASK 960,

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.

————— END OF TASK —————

814. Logic Speed Control Unit (ADP 1) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10420.

EFFECTIVITY
ARO ALL

29-11 TASKS 813-814

D633W103-ARO

Page 223
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the air-driven pump (ADP) 1 logic speed control unit (LSCU), M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
- NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CR card, A4, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29306A from the ADP 1 LSCU, M29306.
 - (c) Do a wiring check between these pins of connector DM29306A at the ADP 1 LSCU, M29306, and connector XA4 at the RSCF, P84 (SSM 29-11-38):



777-200/300 FAULT ISOLATION MANUAL

DM29306A	XA4
pin 7	pin 21
pin 11	pin 22
pin 12	pin 28
pin 13	pin 26

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29306A.
 - 3) Re-install the HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task:
Hydraulic Interface Module (HYDIM) Cards Installation, AMM
TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
NOTE: Use an engine or a ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring:
- (a) Disconnect connector DM29306B from the ADP 1 LSCU, M29306.
 - (b) Disconnect connector DM29310B from the Turbine Gearbox Assembly, M29310.
 - (c) Do a wiring check between these pins of connector DM29306B at the ADP 1 LSCU, M29306 and connector DM29310B at the Turbine Gearbox Assembly, M29310 (SSM 29-11-38):

DM29306B	DM29310B
6	1
7	2
8	3
9	4

- (d) Disconnect connector DM29310A from the Turbine Gearbox Assembly, M29310.
- (e) Do a wiring check between these pins of connector DM29306B at the ADP 1 LSCU, M29306 and connector DM29310A at the Turbine Gearbox Assembly, M29310 (SSM 29-11-38):

DM29306B	DM29310A
1	1
2	2
3	4
4	5
10	8
11	9
12	11
13	12

EFFECTIVITY
ARO ALL

29-11 TASK 814

D633W103-ARO

Page 225
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29310A.
 - 3) Re-connect connector DM29310B.
 - 4) Re-connect connector DM29306B.
 - 5) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

END OF TASK

815. Modulating Shutoff Valve (ADP 1) Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10430.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: A failure of the ADP C1 can occur because of freezing. Therefore, the subsequent testing of the ADP C1 will show no fault if the ice has melted. If this is the problem, a check of the ADP C1 heater should be done.

NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check of the modulating shutoff valve (MSOV) and the air-driven pump (ADP):
- (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (b) Make sure that the visual indicator on ADP C1 shows that the MSOV is closed.
 - (c) Listen for excessive air flow through the ADP exhaust duct when the selector is at the OFF position.
 - (d) If there is no excessive air flow through the ADP exhaust duct when the MSOV is closed, then do these steps:
 - 1) Pressurize the center hydraulic system with the ADP C1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.

EFFECTIVITY
ARO ALL

29-11 TASKS 814-815

D633W103-ARO

Page 226
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) Look at the hydraulic maintenance page on the MPD. To show this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - 3) Put the ADP C1 DEMAND selector switch on the overhead panel first to AUTO position, and then to the ON position.
 - 4) If the hydraulic maintenance page shows that the center system pressure is low and the pump is not operated for the AUTO and ON position, then do these steps:
 - a) Replace the ADP 1 MSOV, V29305.
These are the tasks:
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.
 - b) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
 - c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - d) If the maintenance message shows on the ground test display, then continue.
 - e) Replace the ADP C1, M29305.
These are the tasks:
Air-Driven Pump (ADP) Assembly Removal, AMM TASK 29-11-10-000-801,
Air-Driven Pump (ADP) Assembly Installation, AMM TASK 29-11-10-400-801.
 - f) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - g) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the hydraulic maintenance page shows the center system pressure is high and the pump is operated for AUTO or ON position, then continue.
- (e) If there is excessive air flow through the ADP exhaust duct when the MSOV is closed, then do these steps:
- 1) Replace the ADP 1 MSOV, V29305.
These are the tasks:
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASK 815

D633W103-ARO

Page 227
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the C1 DEMAND selector, S7, on the hydraulic/RAT panel, M29004, (SSM 29-11-38).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
- NOTE:** Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring from the modulating shutoff valve (MSOV) to the LSCU:
 - (a) Disconnect connector DV29305 from the ADP 1 MSOV, V29305.
 - (b) Disconnect connector DM29306B from the ADP 1 LSCU, M29306.
 - (c) Do a wiring check between these pins of connector DV29305 at the ADP 1 MSOV, V29305, and connector DM29306B at the ADP 1 LSCU (SSM 29-11-38):

DV29305

pin 1	.....	pin 14
pin 2	.....	pin 15
pin 3	.....	pin 16
pin 4	.....	pin 17

DM29306B

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV29305.
 - 3) Re-connect connector DM29306B.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-connect connector DV29305.
 - (g) Re-connect connector DM29306B.

EFFECTIVITY
ARO ALL

29-11 TASK 815

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 228
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (5) Do this check of the wiring from the LSCU to the HYDIM-CR card:
- Remove the HYDIM-CR card, A4, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - Disconnect connector DM29306A from the ADP 1 LSCU, M29306.
 - Do a wiring check between these pins of connector DM29306A at the ADP 1 LSCU, M29306, and connector XA4 at the RSCF, P84 (SSM 29-11-38):

DM29306A	XA4
pin 8	pin 11
pin 8	pin 12
pin 14	pin 33

- Do a continuity check between pins 5 and 10 of connector DM29306A at the ADP 1 LSCU, M29306, and structure ground (SSM 29-11-38).
 - If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - Re-connect connector DM29306A.
 - Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - If the maintenance message does not show on the ground test display, you corrected the fault.
 - If you do not find a problem with the wiring, then continue.
 - Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (6) Do this check of the wiring from the C1 demand selector to the left overhead panel cardfile (OPCF-L):
- Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-38).
 - Disconnect connector M29004DS7 from the C1 demand selector.
 - Do a wiring check between these pins of connector M29004DS7 at pilot's overhead panel, P5, and connector DM29306A at the ADP 1 LSCU, M29306 (WDM 29-11-38):

M29004DS7	DM29306A
pin U	pin 9

- Disconnect connector D31038 from the P310 standby power management panel.
- Do a wiring check between these pins of connector M29004DS7 at pilot's overhead panel, P5, and connector D31038 at the P310 panel (WDM 29-11-38):

M29004DS7	D31038
pin M	pin 3

- Disconnect connector DM23117H from the OPCF-L, M23117.

EFFECTIVITY
ARO ALL

29-11 TASK 815

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 229
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (g) Do a wiring check between these pins of connector M29004DS7 at pilot's overhead panel, P5, and connector DM23117H at the maintenance panel, P61 (WDM 29-11-38):

M29004DS7	DM23117H
pin H	pin A15
pin K	pin A16
pin J	pin A14
pin L	pin A13

- (h) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-connect connectors M29004DS7, DM29306A, D31038, and DM23117H.
- 3) Re-install the hydraulic/ram air turbine module, M29004.
- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or a ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

- (7) Do this check of the Air-Driven Pump (ADP) C1 heater:

- (a) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
- (b) If the current was less than 1.5 amps on the ground wire and the RAT GEN HEAT status message is shown, do this task: RAT Generator Heater Problems - Fault Isolation, 29-21 TASK 809.
- (c) If the current was less than 1.5 amps on the ground wire and the RAT GEN HEAT status message is not shown, then continue.
- (d) Replace the ADP 1 heater relay, K29021.
 - 1) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - 2) If the current was more than 1.5 amps on the ground wire, you corrected the fault.
 - 3) If the current was less than 1.5 amps on the ground wire, then continue.
- (e) Do a check of the wiring.
 - 1) Disconnect the connector, DM29010, from the ADP C1 heater (SSM 29-11-38).
 - 2) Do a wiring check between these pins of connector D21039P at the P210 panel and the connector DM29010 at the ADP C1 heater (SSM 29-11-38):

D21039P	DM29010
pin 22	pin 2

- 3) If you find a problem with the wiring then do these steps:

- a) Repair the wiring.
- b) Re-connect the connector DM29010 at the ADP C1 heater.
- c) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.

EFFECTIVITY
ARO ALL

29-11 TASK 815

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 230
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- d) If the current on the ground wire is more than 1.5 amps, you corrected the fault.
- (f) If you do not find a problem with the wiring then do a check of the ADP C1 heater:
 - 1) Do a continuity check between pins 2 and 6 of the connector on the ADP C1 heater, M29010 (SSM 29-11-38).
 - 2) If you find a problem with the ADP C1 heater, replace the ADP C1 heater.
 - a) These are the tasks:
Air-Driven Pump (ADP) Heater Removal, AMM TASK 29-11-18-000-801,
Air-Driven Pump (ADP) Heater Installation, AMM TASK 29-11-18-400-801.
 - b) Re-connect the connector DM29010.
 - c) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - d) If the current on the ground wire is more than 1.5 amps, you corrected the fault.
- (g) If you do not find a problem with the ADP C1 heater, then continue.
- (h) Re-connect the connector DM29010.
- (8) If the ADP 1 modulating and shutoff valve, V29305, was not already replaced as part of step 1, then do these steps:

These are the tasks:

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (9) Replace the ADP 1 turbine gearbox assembly, M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
ARO ALL

29-11 TASK 815

D633W103-ARO

Page 231
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

816. Air-Driven Pump 1 Overspeed Condition Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10440.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the overspeed monopole wiring:
 - (a) Disconnect connector DM29310B from the air-driven pump (ADP) 1 turbine gearbox assembly (TGA), M29310.
 - (b) Do a continuity check between pins 3 and 4 of connector DM29310B (SSM 29-11-38).
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29310B.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - (d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (2) Replace the ADP 1 turbine gearbox assembly (TGA), M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) Do this check of the wiring from the TGA to the LSCU:

EFFECTIVITY
ARO ALL

29-11 TASK 816

D633W103-ARO

Page 232
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- (a) Disconnect connector DM29306B from the ADP 1 logic speed control unit (LSCU), M29306.
- (b) Do a wiring check between these pins of connector DM29310B at the ADP 1 TGA, M29310, and connector DM29306B at the ADP 1 LSCU (SSM 29-11-38):

DM29310B	DM29306B
pin 3	pin 8
pin 4	pin 9

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29310B.
 - 3) Re-connect connector DM29306B.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Re-connect connector DM29010B.

- (4) Replace the ADP 1 LSCU, M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASK 816

D633W103-ARO

Page 233
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (6) Do this check of the wiring from the LSCU to the HYDIM-CR card:
 - (a) Remove the HYDIM-CR card, A4, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29306A from the ADP 1 LSCU, M29306.
 - (c) Do a wiring check between these pins of connector DM29306A at the ADP 1 LSCU, M29306, and connector XA4 at the RSCF, P84 (SSM 29-11-38):

DM29306A	XA4
pin 11	pin 22
pin 12	pin 28
pin 13	pin 26
pin 14	pin 33

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29306A.
 - 3) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

817. Turbine Gearbox Assembly (ADP 1) Internal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10450.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: A failure of the ADP C1 can occur because of freezing. Therefore, the subsequent testing of the ADP C1 will show no fault if the ice has melted. If this is the problem, a check of the ADP C1 heater should be done.

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASKS 816-817

D633W103-ARO

Page 234
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the wiring harness between the air-driven pump (ADP) 1 logic speed control unit (LSCU), M29306 and the turbine gearbox assembly (TGA), M29310 (WDM 29-11-38).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the Air-Driven Pump (ADP) C1 heater:
 - (a) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the ADP 1 TGA, M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,
Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the ADP 1 LSCU, M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,
Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASK 817

D633W103-ARO

Page 235
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

818. ADP (1) Case Drain Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10500.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Pressurize the center hydraulic system with the air driven pump (ADP) 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- (c) Operate ADP 1 until the ADP 1 temperature on the hydraulic maintenance page becomes stable.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
- (e) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Do this check of the hydraulic internal leakage:
- (a) For the center hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
- (b) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
- 1) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- 2) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.

EFFECTIVITY
ARO ALL

29-11 TASKS 817-818

D633W103-ARO

Page 236
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- 3) Operate ADP 1 until the ADP 1 temperature on the hydraulic maintenance page becomes stable.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (c) If the hydraulic internal leakage is less than 6.5 gpm, then continue.
- (2) Replace the ADP 1 temperature transducer, M29313.

These are the tasks:

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.

 - (a) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) Operate ADP 1 until the ADP 1 temperature on the hydraulic maintenance page becomes stable.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Replace the Air-Driven Pump (ADP) 1 pump.

These are the tasks:

Air-Driven Pump (ADP) Pump Removal, AMM TASK 29-11-11-000-801,

Air-Driven Pump (ADP) Pump Installation, AMM TASK 29-11-11-400-801.

 - (a) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate ADP 1 until the ADP 1 temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (e) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Replace the ADP 1 turbine gearbox assembly (TGA), M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 818

D633W103-ARO

Page 237
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- (b) Operate ADP 1 until the ADP 1 temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (5) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the right systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- (b) Operate ADP 1 until the ADP 1 temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

819. ADP (1) Output Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10510.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the center hydraulic system with the Air Driven Pump (ADP) 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASKS 818-819

D633W103-ARO

Page 238
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Look at the hydraulic maintenance page on the MFD, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804
 - (a) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) Look at the C DEMAND PUMP PRESS indication on the hydraulic maintenance page.
 - (c) If the C DEMAND PUMP PRESS indication is difference than the center pump pressure, then do these steps:
 - 1) Replace the ADP 1 pressure transducer, M29318
These are the tasks:
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.
 - 2) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the C DEMAND PUMP PRESS indication is same as the center pump pressure, then continue.
- (2) Replace the Air-Driven Pump (ADP) 1 pump.
These are the tasks:
Air-Driven Pump (ADP) Pump Removal, AMM TASK 29-11-11-000-801,
Air-Driven Pump (ADP) Pump Installation, AMM TASK 29-11-11-400-801.
 - (a) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
 - (d) Remove the adapter from the self-sealing fitting.
 - (e) Install the adapter to the port on the ADP 1.
 - (f) Re-connect the self-sealing fitting of the supply hose to the adapter on the ADP 1.
- (3) Do a check for blocking of the supply hose:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



777-200/300
FAULT ISOLATION MANUAL



WARNING

DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



CAUTION

IMMEDIATELY CLEAN ALL HYDRUALIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the self-sealing fitting of the supply hose from the adapter on the ADP 1.
- (c) Install the adapter to the self-sealing fitting of the supply hose.
NOTE: A container is necessary to catch the hydraulic fluid flow from the supply hose.
- (d) Remove the adapter from the port of the ADP 1.
- (e) Tighten the adapter to 855-945 pound-inches.
- (f) If there is no hydraulic fluid drained from the supply hose, then do these steps:
 - 1) Replace the self-sealing fitting and the supply hose (AMM TASK 29-11-11-400-801).
 - 2) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (g) If there is hydraulic fluid drained from the supply hose, then continue.
- (h) Remove the adapter from the self-sealing fitting.
- (i) Install the adapter to the port on the ADP 1.
- (j) Re-connect the self-sealing fitting of the supply hose to the adapter on the ADP 1.
- (4) Do a check for blocking of the pressure hose:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



WARNING

DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



CAUTION

IMMEDIATELY CLEAN ALL HYDRUALIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the check valve of the pressure hose from the adapter on the ADP 1.
- (c) Manually push the check valve poppet for approximately 2 seconds at the force of 5-10 pounds.

NOTE: A container is necessary to catch the hydraulic fluid flow from the supply hose.

EFFECTIVITY
ARO ALL

29-11 TASK 819

D633W103-ARO

Page 240
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (d) If the poppet does not move, is broken or there is no hydraulic fluid drained from the pressure hose, then do these steps:
 - 1) Replace the check valve (AMM TASK 29-11-11-400-801).
 - 2) If the check valve was found broken, then do these steps:
 - a) Do an inspection for broken pieces in the hydraulic line and damage to other components from the broken pieces.
 - b) Do a check of the ADP pressure filter for contamination. To check it, do this task: Filter Elements of the Air Driven Pumps (ADPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-811.
 - 3) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If there is hydraulic fluid drained from the pressure hose, then continue.
- (f) Re-connect the check valve of the pressure hose to the adapter on the ADP 1.
- (5) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29, Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the ADP 1 LSCU, M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 819

D633W103-ARO

Page 241
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (7) Replace the ADP 1 turbine gearbox assembly, M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.

The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

820. **ADP (2) Case Drain Temperature Problems - Fault Isolation**

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10520.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Pressurize the center hydraulic system with the air driven pump (ADP) 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- (c) Operate ADP 2 until the ADP 2 temperature on the hydraulic maintenance page becomes stable.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
- (e) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Do this check of the hydraulic internal leakage:
- (a) For the center hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
- (b) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
- 1) Pressurize the center hydraulic system with ADP 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- 2) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- 3) Operate ADP 2 until the ADP 2 temperature on the hydraulic maintenance page becomes stable.

EFFECTIVITY
ARO ALL

29-11 TASKS 819-820

D633W103-ARO

Page 242
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the hydraulic internal leakage is less than 6.5 gpm, then continue.
- (2) Replace the ADP 2 temperature transducer, M29315.

These are the tasks:

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.

 - (a) Pressurize the center hydraulic system with ADP 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) Operate ADP 2 until the ADP 2 temperature on the hydraulic maintenance page becomes stable.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Replace the Air-Driven Pump (ADP) 2 pump.

These are the tasks:

Air-Driven Pump (ADP) Pump Removal, AMM TASK 29-11-11-000-801,

Air-Driven Pump (ADP) Pump Installation, AMM TASK 29-11-11-400-801.

 - (a) Pressurize the center hydraulic system with ADP 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate ADP 2 until the ADP 2 temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (e) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Replace the ADP 2 turbine gearbox assembly (TGA), M29314.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 820

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 243
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the center hydraulic system with ADP 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- (b) Operate ADP 2 until the ADP 2 temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (5) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the center hydraulic system with ADP 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- (b) Operate ADP 2 until the ADP 2 temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

821. Left Hydraulic System Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10590.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASKS 820-821

D633W103-ARO

Page 244
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (2) Look at the MAT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- (3) If the hydraulic maintenance page shows that the left ACMP pressure is greater than 2600 psi and system pressure is less than 2400 psi, then do these steps:

- (a) Replace the left ACMP pressure filter.

These are the tasks:

Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-40-000-801,

Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-40-400-801.

- (b) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (c) If the hydraulic maintenance page shows that system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - 1) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 2) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the hydraulic maintenance page shows that the system pressure is less than 2400 psi, then continue.
- (e) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (f) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (g) If the hydraulic maintenance page shows that system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - 1) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 2) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (h) If the hydraulic maintenance page shows that the system pressure is less than 2400 psi, then continue.
- (i) Replace the left hydraulic system pressure transducer, M29101.

These are the tasks:

Hydraulic System Pressure Transducer Removal, AMM TASK 29-31-01-000-801,
Hydraulic System Pressure Transducer Installation, AMM TASK 29-31-01-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 821

D633W103-ARO

Page 245
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (j) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (k) If the hydraulic maintenance page shows that system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - 1) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 2) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (l) If the hydraulic maintenance page shows that the system pressure is less than 2400 psi, then continue.
- (m) Examine the hydraulic lines between the left ACMP supply and system pressure transducer for blocking.
- (n) If there is blocking, repair or clean the hydraulic lines.
- (o) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (p) If the hydraulic maintenance page shows that system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - 1) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 2) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (4) If the hydraulic maintenance page shows that the left ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then do these steps:
 - (a) Close the left wing and tail flight control shutoff valves.
 - (b) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the hydraulic maintenance page shows that the left ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then do these steps:
 - 1) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 2) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the hydraulic maintenance page shows that the left ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - a) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - b) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASK 821

D633W103-ARO

Page 246
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) If the hydraulic maintenance page shows that the left ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then continue.
- 5) Replace the left alternating current motor pump (ACMP), M29104.
These are the tasks:
Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801,
Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801.
- 6) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 7) If the hydraulic maintenance page shows that the left ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - a) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - b) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 8) If the hydraulic maintenance page shows that the left ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then continue.
- 9) Examine the hydraulic lines between the left ACMP supply and reservoir for blocking.
- 10) If there is blocking, repair or clean the hydraulic lines
- 11) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 12) If the hydraulic maintenance page shows that the left ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - a) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - b) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 13) If the hydraulic maintenance page shows that the left ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then continue.
- 14) Examine the thrust reverser system for high internal leakage.
- 15) If the hydraulic internal leakage in the thrust reverser system, repair the thrust reverser.
- 16) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 17) If the hydraulic maintenance page shows that the left ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:

EFFECTIVITY
ARO ALL

29-11 TASK 821

D633W103-ARO

Page 247
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - b) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 18) If the hydraulic maintenance page shows that the left ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then continue.
- (d) If the hydraulic maintenance page shows that the left ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, then continue.
- (e) For the left hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
- (f) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
- 1) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 2) If the hydraulic maintenance page shows that the left ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - 3) Operate the left ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 4) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

822. Right Hydraulic System Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10600.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (2) Look at the MAT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.

EFFECTIVITY
ARO ALL

29-11 TASKS 821-822

D633W103-ARO

Page 248
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (3) If the hydraulic maintenance page shows that the left ACMP pressure is greater than 2600 psi and system pressure is less than 2400 psi, then do these steps:
- (a) Replace the right ACMP pressure filter.
- These are the tasks:
- Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-40-000-801,
Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-40-400-801.
- (b) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (c) If the hydraulic maintenance page shows that system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
- 1) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 2) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the hydraulic maintenance page shows that the system pressure is less than 2400 psi, then continue.
- (e) Replace the right hydraulic interface module (HYDIM-L) card, A17, in the right systems card file (RSCF), P84.
- These are the tasks:
- Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (f) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (g) If the hydraulic maintenance page shows that system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
- 1) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 2) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (h) If the hydraulic maintenance page shows that the system pressure is less than 2400 psi, then continue.
- (i) Replace the right hydraulic system pressure transducer, M29201.
- These are the tasks:
- Hydraulic System Pressure Transducer Removal, AMM TASK 29-31-01-000-801,
Hydraulic System Pressure Transducer Installation, AMM TASK 29-31-01-400-801.
- (j) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (k) If the hydraulic maintenance page shows that system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:

EFFECTIVITY
ARO ALL

29-11 TASK 822

D633W103-ARO

Page 249
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
- 2) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (l) If the hydraulic maintenance page shows that the system pressure is less than 2400 psi, then continue.
- (m) Examine the hydraulic lines between the right ACMP supply and system pressure transducer for blocking.
- (n) If there is blocking, repair or clean the hydraulic lines.
- (o) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (p) If the hydraulic maintenance page shows that system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - 1) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 2) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (4) If the hydraulic maintenance page shows that the right ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then do these steps:
 - (a) Close the right wing and tail flight control shutoff valves.
 - (b) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the hydraulic maintenance page shows that the right ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then do these steps:
 - 1) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 2) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the hydraulic maintenance page shows that the right ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - a) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - b) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 4) If the hydraulic maintenance page shows that the right ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 822

D633W103-ARO

Page 250
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 5) Replace the right alternating current motor pump (ACMP), M29204.
These are the tasks:
Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801,
Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801.
- 6) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 7) If the hydraulic maintenance page shows that the right ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - a) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - b) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 8) If the hydraulic maintenance page shows that the right ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then continue.
- 9) Examine the hydraulic lines between the right ACMP supply and reservoir for blocking.
- 10) If there is blocking, repair or clean the hydraulic lines
- 11) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 12) If the hydraulic maintenance page shows that the right ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - a) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - b) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 13) If the hydraulic maintenance page shows that the right ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then continue.
- 14) Examine the thrust reverser system for high internal leakage.
- 15) If the hydraulic internal leakage in the thrust reverser system, repair the thrust reverser.
- 16) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 17) If the hydraulic maintenance page shows that the right ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - a) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).

EFFECTIVITY
ARO ALL

29-11 TASK 822

D633W103-ARO

Page 251
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- b) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 18) If the hydraulic maintenance page shows that the right ACMP pressure is less than 2600 psi and system pressure is less than 2400 psi, then continue.
- (d) If the hydraulic maintenance page shows that the right ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, then continue.
- (e) For the right hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
- (f) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
 - 1) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 2) If the hydraulic maintenance page shows that the right ACMP pressure is greater than 2600 psi and system pressure is greater than 2400 psi, you corrected the fault. Do these steps to complete the task:
 - 3) Operate the right ACMP until the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show).
 - 4) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

823. ACMP (Left) Case Drain Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10610.

B. Description

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (1) The AC Motor Pump (ACMP) has a Temperature Switch that is a part of the pump.
 - (a) The switch closes at 221°F (105°C) and opens again when the pump temperature decreases to 167°F (75°C).
 - (b) The ACMP Temperature Switch provides an overheat indication that is independent of the ACMP Temperature Transducer.
NOTE: Some ACMP problems can stop the fluid flow from the case drain and cause a pump overheat that is not detected by the ACMP Case Drain Temperature Transducer.
 - (c) The ACMP Temperature Switch is connected in parallel with the ACMP Temperature Transducer. When it closes, the switch circuit provides a signal to the Hydraulic Interface Module (HYDIM) Card that is equivalent to the transducer signal at 232.9°F (111.6°C).
 - (d) The valid signal for the ACMP Temperature Transducer is 1 to 40 mA instead of the typical range of 1 to 23 mA. This allows the total signal from the Switch Circuit and the Transducer to be detected as an overheat condition instead of a Transducer problem.
 - (e) An ACMP Temperature Transducer problem that causes the Temperature Signal to be larger than normal (drifting high) can be detected as an overheat condition instead of a Transducer problem.

EFFECTIVITY
ARO ALL

29-11 TASKS 822-823

D633W103-ARO

Page 252
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

- (f) An ACMP Temperature Switch problem that causes the Temperature Signal to be larger than normal (short circuit) can be detected as an ACMP Temperature Transducer problem instead of an overheat condition.

ARO ALL

C. Possible Causes

- (1) Left ACMP Electrical Load Control Unit (ELCU), M29103
- (2) Left ACMP, M29104
- (3) Left ACMP Temperature Transducer, M29110
- (4) Left HYDIM Card, A17
- (5) Wiring

D. Related Data

- (1) WDM 29-11-12

E. Initial Evaluation

- (1) Do a check of the fault history for maintenance messages 29-10610, 29-10620 or 29-17003.
 - (a) If the fault history shows ACTIVE or LATCHED for any combination of these maintenance messages, then do these steps:

NOTE: A history of intermittent ACMP or ELCU fault messages can be an indication of a degraded component that will soon fail in service.

 - 1) Replace the Left ACMP ELCU, M29103. These are the tasks:
 - ELCU Removal, AMM TASK 24-51-05-000-801
 - ELCU Installation, AMM TASK 24-51-05-400-801
 - 2) Replace the Left ACMP. These are the tasks:
 - Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801
 - Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801
 - (b) If maintenance messages 29-10620 and 29-17003 do not show in the fault history, then continue.
- (2) If the Maintenance Access Terminal (MAT) shows ACTIVE for maintenance message 29-10610, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for maintenance message 29-10610, then do these steps:
 - (a) Pressurize the Left Hydraulic System with the Left ACMP. This is the task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate the Left ACMP until the Left ACMP Temperature on the HYD Maintenance Page becomes stable.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after the temperature becomes stable, then there was an intermittent problem.

EFFECTIVITY
ARO ALL

29-11 TASK 823

D633W103-ARO

Page 253
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) Remove the Main Hydraulic System Power. This is the task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 2) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do a check for internal hydraulic leakage:

NOTE: A higher than normal rate of internal leakage can cause the hydraulic fluid to become hot.

- a) For the Left Hydraulic System, do the Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
 - 1) If the internal hydraulic leakage is greater than 6.5 gpm, repair/replace defective components as necessary.
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the internal hydraulic leakage is less than 6.5 gpm, then continue.
- (2) Replace the Left ACMP Temperature Transducer, M29110. These are the tasks:
 - Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-40-000-801
 - Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-40-400-801
- a) Do the Repair Confirmation at the end of this task.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (3) Do this check of the Left ACMP Temperature Switch Circuit (WDM 29-11-12):
 - a) Disconnect connector DM29104B from the Left ACMP temperature switch M29104.
 - b) Measure the resistance between Pin 3 of connector DM29104B and structure ground.
 - 1) If the resistance is not 663-733 ohms, then do these steps:
 - a) Repair the wiring.
 - b) Do the Repair Confirmation at the end of this task.
 - 2) If the resistance is 663-733 ohms, then continue.
 - c) Make sure the ACMP Temperature is less than 167°F (75°C).
 - d) Do a check for continuity between pins 2 and 3 of the ACMP connector.
 - 1) If you find continuity and the ACMP Temperature is less than 167°F (75°C), then do these steps:
 - a) Replace the Left ACMP, M29104. These are the tasks:
 - Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801
 - Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801
 - b) Re-connect connector DM29104B.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find continuity, then continue.

ARO ALL

EFFECTIVITY
ARO ALL

29-11 TASK 823

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 254
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (4) Replace the Left HYDIM Card, A17, in the Left System Card File (LSCF), P85. These are the tasks:
 - Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801
 - Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Pressurize the Left Hydraulic System with the Left ACMP. This is the task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (2) Look at the MAINT INFO Page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- (3) Operate the Left ACMP until the Left ACMP Temperature on the HYD Maintenance Page becomes stable.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), after the temperature becomes stable, then you corrected the problem.
 - 1) Remove the Main Hydraulic System Power. This is the task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue the Fault Isolation Procedure at the subsequent step.

END OF TASK

824. EDP (Left) Case Drain Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10640.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the left hydraulic system with the left engine driven pump (EDP). To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate the left EDP until the left EDP temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (e) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Do a check of the orientation of the check valve on the case drain line for the left engine-driven pump (EDP).
- (2) If the orientation of the check valve is not correct, then install the check valve correctly.

EFFECTIVITY
ARO ALL

29-11 TASKS 823-824

D633W103-ARO

Page 255
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate the left EDP until the left EDP temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (e) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do this check of the hydraulic internal leakage:
- (a) For the left hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
 - (b) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
 - 1) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 2) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - 3) Operate the left EDP until the left EDP temperature on the hydraulic maintenance page becomes stable.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the hydraulic internal leakage is less than 6.5 gpm, then continue.
- (4) Replace the left EDP temperature transducer, M29106.

These are the tasks:

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-42-000-801,

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-42-400-801.

- (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- (b) Operate the left EDP until the left EDP temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 824

D633W103-ARO

Page 256
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (5) Replace the left engine-driven pump (EDP).

These are the tasks:

Engine-Driven Pump (EDP) Removal, AMM TASK 29-11-05-000-801-002,

Engine-Driven Pump (EDP) Installation, AMM TASK 29-11-05-400-801-002.

- (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate the left EDP until the left EDP temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (e) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (6) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- (b) Operate the left EDP until the left EDP temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

825. EDP (Left) Output Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10650.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.

EFFECTIVITY
ARO ALL

29-11 TASKS 824-825

D633W103-ARO

Page 257
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (3) If the engine-driven pump (EDP) operates for more than 5 minutes without hydraulic fluid, then it is recommended that you replace the EDP.

NOTE: Operation of the EDP without hydraulic fluid for more than 5 minutes will usually cause damage to the EDP. A damaged EDP can operate satisfactorily during an operational check, but will usually fail after a short time in-service.

C. Fault Isolation Procedure

- (1) Do a check of the orientation of the check valve on the case drain line for the left engine-driven pump (EDP).
- (2) If the orientation of the check valve is not correct, then install the check valve correctly.
 - (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Look at the hydraulic maintenance page on the MFD, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804
 - (a) Pressurize the left hydraulic system with left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) Look at the L PRIMARY PUMP PRESS indication on the hydraulic maintenance page.
 - (c) If the L PRIMARY PUMP PRESS indication is difference than the left pump pressure, then do these steps:
 - 1) Replace left EDP pressure transducer, M29108.

These are the tasks:
Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-42-000-801,
Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-42-400-801.
 - 2) Pressurize the left hydraulic system with left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the L PRIMARY PUMP PRESS indication is the same as the center pump pressure, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 825

D633W103-ARO

Page 258
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (4) Replace the left engine-driven pump (EDP).

These are the tasks:

Engine-Driven Pump (EDP) Removal, AMM TASK 29-11-05-000-801-002,

Engine-Driven Pump (EDP) Installation, AMM TASK 29-11-05-400-801-002.

- (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (5) Do a check for blocking of the supply hose:
- (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



IMMEDIATELY CLEAN ALL HYDRAULIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the self-sealing fitting of the supply hose from the adapter on the left EDP.
 - (c) Remove the adapter from the port of the left EDP.
 - (d) Install the adapter to the self-sealing fitting of the supply hose.

NOTE: A container is necessary to catch the hydraulic fluid drain from the supply hose.
 - (e) Tighten the adapter to 855-945 pound-inches.
 - (f) If there is no hydraulic fluid drained from the supply hose, then do these steps:
 - 1) Replace the self-sealing fitting and the supply hose (AMM TASK 29-11-10-400-801).
 - 2) Pressurize the left hydraulic system with left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (g) If there is hydraulic fluid drained from the supply hose, then continue.
 - (h) Remove the adapter from the self-sealing fitting.
 - (i) Install the adapter to the port on the left EDP.
 - (j) Re-connect the self-sealing fitting of the supply hose to the adapter on the left EDP.
- (6) Do a check for blocking of the pressure hose:

EFFECTIVITY
ARO ALL

29-11 TASK 825

D633W103-ARO

Page 259
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



WARNING

DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



CAUTION

IMMEDIATELY CLEAN ALL HYDRAULIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the check valve of the pressure hose from the adapter on the left EDP.
- (c) Manually push the check valve poppet for approximately 2 seconds at the force of 5-10 pounds.
- NOTE: A container is necessary to catch the hydraulic fluid drain from the supply hose.
- (d) If the poppet does not move, is broken or there is no hydraulic fluid drained from the pressure hose, then do these steps:
- 1) Replace the check valve (AMM TASK 29-11-10-400-801).
 - 2) If the check valve was found broken, then do these steps:
 - a) Do an inspection for broken pieces in the hydraulic line and damage to other components from the broken pieces.
 - b) Do a check of the EDP pressure filter for contamination. To check it, do this task: Filter Elements of the Engine Driven Pumps (EDPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-810.
 - 3) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If there is hydraulic fluid drained from the pressure hose, then continue.
- (f) Re-connect the check valve of the pressure hose to the adapter on the left EDP.
- (7) Do a check for blocking of the case drain hose:
- (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



WARNING

DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



CAUTION

IMMEDIATELY CLEAN ALL HYDRAULIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the check valve of the case drain hose from the adapter on the left EDP.

EFFECTIVITY
ARO ALL

29-11 TASK 825

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 260
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) Manually push the check valve poppet for approximately 2 seconds at the force of 5-10 pounds.
- NOTE: A container is necessary to catch the hydraulic fluid drain from the supply hose.
- (d) If the poppet does not move, is broken or there is no hydraulic fluid drained from the case drain hose, then do these steps:
- 1) Replace the check valve (AMM TASK 29-11-10-400-801).
 - 2) If the check valve was found broken, then do these steps:
 - a) Do an inspection for broken pieces in the hydraulic line and damage to other components from the broken pieces.
 - b) Do a check of the EDP pressure filter for contamination. To check it, do this task: Filter Elements of the Engine Driven Pumps (EDPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-810.
 - 3) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If there is hydraulic fluid drained from the case drain hose, then continue.
- (f) Re-connect the check valve of the case drain hose to the adapter on the left EDP.
- (8) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.
- These are the tasks:
- Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (9) Do this check of the L EDP switch:
- (a) Set the left engine fire switch, S26101, to the NORM position.
 - (b) Set the L EDP switch, S2, to the ON position.
 - (c) Remove the hydraulic/RAT panel, P5 (WDM 29-11-11).
 - (d) Do a continuity check between pin 12 and pin 10 of connector on the L EDP switch, S2 (WDM 29-11-11).
 - (e) If there is continuity between pin 12 and pin 10, then do these steps:
 - 1) Replace the L EDP switch, S2 (WDM 29-11-11).
 - 2) Re-install the hydraulic/RAT panel, P5 (WDM 29-11-11).

EFFECTIVITY
ARO ALL

29-11 TASK 825

D633W103-ARO

Page 261
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 3) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (f) If there is no continuity between pin 12 and pin 10, then continue.
- (10) Do this check of the hydraulic/RAT panel:
 - (a) Do a continuity check between pin 40 and pin 41 of connector DM29004A on the hydraulic/RAT panel, P5 (WDM 29-11-11).
 - (b) If there is continuity between pin 40 and pin 41, then do these steps:
 - 1) Install a new hydraulic/RAT panel, P5 (WDM 29-11-11).
 - 2) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If there is no continuity between pin 40 and pin 41, then continue.
- (11) Do this wiring check:
 - (a) Disconnect connector DV29001 from the left EDP depressurization valve, V29001.
 - (b) Do a wiring check between these pin of connector DM29004A at the P5 panel and connector DV29001 at the depressurization valve, V29001 (WDM 29-11-11):

DM29004A	DV29001
pin 40	pin 3
 - (c) Remove the left engine fire switch, S26101 from the aft aisle stand panel, P8 (WDM 29-11-11).
 - (d) Do a wiring check between these pin of connector DM29004A at the P5 panel and connector DS26101 at the P8 panel (WDM 29-11-11):

DM29004A	DS26101
pin 40	pin 28
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV29001.
 - 3) Re-install the left engine fire switch, S26101.
 - 4) Re-install the hydraulic/RAT panel, P5.
 - 5) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.

EFFECTIVITY
ARO ALL

29-11 TASK 825

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 262
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - f) If you find a problem with the wiring, then continue.
 - g) Re-connect connector DV29001.
 - h) Re-install the hydraulic/RAT panel, P5.
- (12) Install a new left engine fire switch, S26101 (WDM 29-11-11).
 - (a) Pressurize the left hydraulic system with the left EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

826. Supply Shutoff Valve (EDP Left) Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10660.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Make sure that this circuit breaker is closed:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C29603	LEFT EDP SUPPLY SHUTOFF VALVE

- (b) Make sure that the left engine driven pump (EDP) does not operate.
- (c) Pull and hold the left engine fire switch, S26101, for 30 seconds while you push the manual override switch.

NOTE: The manual override switch is on the P8 aisle stand panel.
- (d) After 1.5 minutes, if the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
- (e) After 1.5 minutes, if the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left engine-driven pump (EDP) supply shutoff valve.

These are the tasks:

Engine-Driven Pump (EDP) Supply Shutoff Valve Removal, AMM TASK 29-11-30-000-801,
Engine-Driven Pump (EDP) Supply Shutoff Valve Installation, AMM TASK 29-11-30-400-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 825-826

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 263
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Look at the hydraulic synoptic page on the MFD. To see this page, do this task: Showing a System Synoptic Page, AMM TASK 31-61-00-800-816.
- (b) Make sure that the left EDP does not operate.
- (c) If the valve shows OPEN on the hydraulic synoptic page, then do these steps:
 - 1) Pull and hold the left engine fire switch, S26101, in the closed position for 30 seconds.
 - 2) If the valve shows CLOSED on the hydraulic synoptic page and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 3) If the valve shows OPEN on the hydraulic synoptic page and the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (d) If the valve shows CLOSED on the hydraulic synoptic page, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Look at the hydraulic synoptic page on the MFD. To see this page, do this task: Showing a System Synoptic Page, AMM TASK 31-61-00-800-816.
- (b) Make sure that the left EDP does not operate.
- (c) If the valve shows OPEN on the hydraulic synoptic page, then do these steps:
 - 1) Pull and hold the left engine fire switch, S26101, in the closed position for 30 seconds.
 - 2) If the valve shows CLOSED on the hydraulic synoptic page and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 3) If the valve shows OPEN on the hydraulic synoptic page and the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (d) If the valve shows CLOSED on the hydraulic synoptic page, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DV29102 from the left EDP supply shutoff valve, V29102.
 - (c) Do a wiring check between these pins of connector XA17 in the LSCF, P85, and connector DV29102 at the left EDP supply shutoff valve, V29102 (SSM 29-11-11):

XA17	DV29102
pin 44	pin 5
pin 45	pin 4

- (d) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV29102.

EFFECTIVITY
ARO ALL

29-11 TASK 826

D633W103-ARO

Page 264
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Look at the hydraulic synoptic page on the MFD. To see this page, do this task: Showing a System Synoptic Page, AMM TASK 31-61-00-800-816.
 - 5) Make sure that the left EDP does not operate.
 - 6) If the valve shows OPEN on the hydraulic synoptic page, then do these steps:
 - a) Pull and hold the left engine fire switch, S26101, in the closed position for 30 seconds.
 - b) If the valve shows CLOSED on the hydraulic synoptic page and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (4) Put the L(R) GEN CTRL switches to the OFF position then to the ON position to reset the generator system.
- NOTE: The OFF light on the GEN CTRL switch will come on when the switch is out (or OFF) and will turn off when the GEN CTRL switch is pushed in (or ON), this will reset the Gen Ctrl Relay.

————— END OF TASK —————

827. Reservoir (Right) Fluid Quantity Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10330.

B. Initial Evaluation

- (1) Do the applicable steps from this task to verify the hydraulic fluid level at the right system reservoir:
Hydraulic Reservoir Fluid Level Check, AMM TASK 12-12-01-610-801,
- (2) If the fluid level is too low, then do the Fault Isolation Procedure - Leakage below.
NOTE: The lower sight glass on the hydraulic reservoir will be dark if the fluid level is normal.
The lower sight glass will show red if the fluid level is too low.
- (3) If the fluid level is normal, then continue.
- (4) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (5) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure - Indication

- (1) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right reservoir quantity transmitter, M29205.

EFFECTIVITY
ARO ALL

29-11 TASKS 826-827

D633W103-ARO

Page 265
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

These are the tasks:

Reservoir Quantity Transmitter Removal, AMM TASK 29-33-02-000-801,
Reservoir Quantity Transmitter Installation, AMM TASK 29-33-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

D. Fault Isolation Procedure - Leakage

- (1) Do a check of the external hydraulic leakage:
 - (a) For the right hydraulic system, do this task: Main Hydraulic Systems External Leakage Check, AMM TASK 29-11-00-200-804.
 - (b) If the external hydraulic leakage is not within the maintenance limits, then do these steps:
 - 1) Repair the leakage.
 - 2) For the right hydraulic system, do this task: Hydraulic Reservoir Filling, AMM TASK 12-12-01-610-802.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the external hydraulic leakage is within the maintenance limits, then continue.
- (2) If the hydraulic fluid level continues to decrease and the external hydraulic leakage is within the maintenance limits, then do this task:

Reservoir Fluid Quantity Problems - Fault Isolation, 29-11 TASK 960,

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.

————— END OF TASK —————

828. Landing Gear Auto-Off A Relay Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10670.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-off Relay A.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the landing gear auto-off A relay, K32014 in the P110 left power management panel (SSM 32-31-11).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-off Relay A.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 827-828

D633W103-ARO

Page 266
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.
- These are the tasks:
- Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-off Relay A.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring:
- (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Remove the landing gear auto-off A relay, K32014 from the P110 left power management panel (SSM 32-31-11).
- (c) Do a wiring check between these pins of connector DK32014 at the P110 left power management panel and connector XA17 at the LSCF, P85 (SSM 32-31-11):
- | DK29014 | XA17 |
|------------------|-------------|
| pin B2 | pin 28 |
| pin X2 | pin 33 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the landing gear auto-off A relay.
 - 3) Re-install the HYDIM-L card, A17, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-off A Relay.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

829. Reserve Isolation Valve Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10690.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.

EFFECTIVITY
ARO ALL

29-11 TASKS 828-829

D633W103-ARO

Page 267
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the reserve isolation valve relay, K29002 in the P110 left power management panel (SSM 29-11-37).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the reserve isolation valve, V29302.

These are the tasks:

Reserve Isolation Valve Removal, AMM TASK 29-11-31-000-801,
Reserve Isolation Valve Installation, AMM TASK 29-11-31-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring from the reserve isolation valve relay to the reserve isolation valve:
 - (a) Remove the reserve isolation valve, K29002 from the P110 left power management panel (SSM 29-11-37).
 - (b) Disconnect connector DV29302 from the reserve isolation valve, V29302.
 - (c) Do a wiring check between these pins of connector DK29002 at the P110 left power management panel and connector DV29302 at the reserve isolation valve, V29302 (SSM 29-11-37):

DK29002		DV29302
pin A1	.....	pin 2
pin A3	.....	pin 3

- (d) If you find a problem with the wiring, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 829

D633W103-ARO

Page 268
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Repair the wiring.
- 2) Re-install the reserve isolation valve relay, K29002.
- 3) Re-connect connector DV29302.
- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the reserve isolation valve relay, K29002.
- (5) Do this check of the wiring from the reserve isolation valve to the HYDIM-CL:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Do a wiring check between these pins of connector DV32302 at the reserve isolation valve, V29302, and connector XA4 at the LSCF, P85 (SSM 29-11-37):

DV29302		XA4
pin 4	.....	pin 48
pin 5	.....	pin 46

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV29302.
 - 3) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

830. Nose Gear Isolation Valve Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10760.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 829-830

D633W103-ARO

Page 269
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Replace the nose gear isolation valve relay, K29003 in the P310 standby power management panel (SSM 29-11-37).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the nose gear isolation valve, V29303.

These are the tasks:

Nose Gear Isolation Valve Removal, AMM TASK 29-11-32-000-801,

Nose Gear Isolation Valve Installation, AMM TASK 29-11-32-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring from the nose gear isolation valve relay to the nose gear isolation valve:
 - (a) Remove the nose gear isolation valve, K29003 from the P310 standby power management panel .
 - (b) Disconnect connector DV29303 from the nose gear isolation valve, V29303.
 - (c) Do a wiring check between these pins of connector DK29003 at the P310 standby power management panel and connector DV29303 at the nose gear isolation valve, V29303 (SSM 29-11-37):

DK29003

DV29303

pin A1 pin 2

pin A3 pin 3

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the nose gear isolation valve relay, K29003.
 - 3) Re-connect connector DV29303.

EFFECTIVITY
ARO ALL

29-11 TASK 830

D633W103-ARO

Page 270
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the nose gear isolation valve relay, K29003.
- (5) Do this check of the wiring from the nose gear isolation valve to the HYDIM-CL:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Do a wiring check between these pins of connector DV29303 at the nose gear isolation valve, V29303, and connector XA4 at the LSCF, P85 (SSM 29-11-37):

DV29303		XA4
pin 4	.....	pin 47
pin 5	.....	pin 49
- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV29303.
 - 3) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

831. Temperature Transducer (EDP Left) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10770.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left engine-driven pump (EDP) temperature transducer, M29106.

These are the tasks:

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-42-000-801,

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-42-400-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 830-831

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 271
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29106 from the left EDP temperature transducer, M29106.
 - (c) Do a wiring check between these pins of connector DM29106 at the left EDP temperature transducer, M29106 and connector XA17 at the LSCF, P85 (SSM 29-11-11):

DM29106		XA17
pin 1	.....	pin 65
pin 2	.....	pin 67
- (d) Do a continuity check between pin 3 of connector DM29106 at the left EDP temperature transducer, M29106, and structure ground (SSM 29-11-11).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29106.
 - 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

832. Temperature Transducer (ACMP Left) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10780.

B. General

- (1) The ACMP has a temperature switch that is a part of the pump. It closes at 105C and reopens when the pump temperature decreases to 75C.
- (2) The ACMP temperature switch provides an overheat indication that is independent of the ACMP temperature transducer.

NOTE: Some ACMP faults can stop the fluid flow from the case drain and cause a pump overheat that is not detected by the ACMP case drain temperature transducer.

EFFECTIVITY
ARO ALL

29-11 TASKS 831-832

D633W103-ARO

Page 272
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) The ACMP temperature switch is connected in parallel with the ACMP temperature transducer. When it closes, the switch circuit provides a signal to the HYDIM card that is equivalent to the transducer signal at 111.6C.
- (b) The valid signal for the ACMP temperature transducer is 1 to 40 ma instead of the typical range of 1 to 23 ma. This allows the total signal from the switch circuit and the transducer to be detected as an overheat condition instead of as a transducer fault.
- (c) An ACMP temperature transducer fault that causes the temperature signal to be larger than normal (drifting high) can be detected as an overheat condition instead of as a transducer fault.
- (d) An ACMP temperature switch fault that causes the temperature signal to be larger than normal (short circuit) can be detected as an ACMP temperature transducer fault instead of as an overheat condition.

C. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Replace the left alternating current motor pump (ACMP) temperature transducer, M29110.
These are the tasks:
Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-40-000-801,
Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-40-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Do this check of the wiring:
 - (a) Make sure connector DM29104B is correctly installed on the Left ACMP temperature switch M29104.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 2) If the MAT shows ACTIVE for the maintenance message, then continue.
 - (b) Disconnect connector DM29104B from the Left ACMP temperature switch M29104.
NOTE: This checks the resistor for the temperature switch.
 - (c) Measure the resistance between pin 3 of connector DM29104B and structure ground.
 - 1) If the resistance is not 663-733 ohms, then do these steps:
 - a) Repair the wiring.
 - b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - c) Re-connect connector DM29104B.
 - 2) If the resistance is 663-733 ohms, then continue.
 - (d) Re-connect connector DM29104B.

EFFECTIVITY
ARO ALL

29-11 TASK 832

D633W103-ARO

Page 273
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (3) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Do this check of the wiring:
- (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29110 from the left ACMP temperature transducer, M29110.
 - (c) Do a wiring check between these pins of connector DM29110 at the left ACMP temperature transducer, M29110, and connector XA17 at the LSCF, P85 (SSM 29-11-12):
- | DM29110 | XA17 |
|-----------------|--------|
| pin 1 | pin 69 |
| pin 2 | pin 68 |
- (d) Do a continuity check between pin 3 of connector DM29110 at the left ACMP temperature transducer, M29110, and structure ground. (SSM 29-11-12).
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29110.
 - 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

833. Pressure Transducer (EDP Left) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10790.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left engine-driven pump (EDP) pressure transducer, M29108.

These are the tasks:

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-42-000-801,

EFFECTIVITY
ARO ALL

29-11 TASKS 832-833

D633W103-ARO

Page 274
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-42-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29108 from the left EDP pressure transducer, M29108.
 - (c) Do a wiring check between these pins of connector DM29108 at the left EDP pressure transducer, M29108, and connector XA17 at the LSCF, P85 (SSM 29-11-11):

DM29108		XA17
pin 2	.....	pin 62
pin 3	.....	pin 63

- (d) Do a continuity check between pin 1 of connector DM29108 at the left EDP pressure transducer, M29108, and structure ground (SSM 29-11-11).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29108.
 - 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

834. Pressure Transducer (ACMP Left) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10800.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 833-834

D633W103-ARO

Page 275
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Replace the left alternating current motor pump (ACMP) pressure transducer, M29109.

These are the tasks:

Left and Right System Alternating Current Motor Pump (ACMP) Pressure Transducer Removal, AMM TASK 29-31-02-000-801,

Left and Right System Alternating Current Motor Pump (ACMP) Pressure Transducer Installation, AMM TASK 29-31-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
- (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29109 from the left ACMP pressure transducer, M29109.
- (c) Do a wiring check between these pins of connector DM29109 at the left ACMP pressure transducer, M29109, and connector XA17 at the LSCF, P85 (SSM 29-11-12):

DM29109	XA17
pin 2	pin 66
pin 3	pin 64

- (d) Do a continuity check between pin 1 of connector DM29109 at the left ACMP pressure transducer, M29109, and structure ground (SSM 29-11-12).
- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29109.
 - 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

835. Pressure Transducer (System Left) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10810.

EFFECTIVITY
ARO ALL

29-11 TASKS 834-835

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 276
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left hydraulic system pressure transducer, M29101.

These are the tasks:

Hydraulic System Pressure Transducer Removal, AMM TASK 29-31-01-000-801,
Hydraulic System Pressure Transducer Installation, AMM TASK 29-31-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29101 from the left system hydraulic pressure transducer, M29101.
 - (c) Do a wiring check between these pins of connector DM29101 at the left system hydraulic pressure transducer, M29101, and connector XA17 at the LSCF, P85 (SSM 29-11-12):

DM29101	XA17
pin 2	pin 61
pin 3	pin 59

- (d) Do a continuity check between pin 1 of connector DM29101 at the left system hydraulic pressure transducer, M29101, and structure ground (SSM 29-11-12).
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29101.
 - 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

EFFECTIVITY
ARO ALL

29-11 TASK 835

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 277
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

836. Pressure Transducer (ADP 1) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10950.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the air-driven pump (ADP) 1 pressure transducer, M29318.

These are the tasks:

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29318 from the ADP 1 pressure transducer, M29318.
 - (c) Do a wiring check between these pins of connector DM29318 at the ADP 1 pressure transducer, M29318, and connector XA4 at the LSCF, P85 (SSM 29-11-33):

DM29318	XA4
pin 2	pin 61
pin 3	pin 59

- (d) Do a continuity check between pin 1 of connector DM29318 at the ADP 1 pressure transducer, M29318, and structure ground (SSM 29-11-33).
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29318.

EFFECTIVITY
ARO ALL

29-11 TASK 836

D633W103-ARO

Page 278
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

———— **END OF TASK** ————

837. Quantity Transmitter (Reservoir Left) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10990.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left reservoir quantity transmitter, M29105.

These are the tasks:

Reservoir Quantity Transmitter Removal, AMM TASK 29-33-02-000-801,

Reservoir Quantity Transmitter Installation, AMM TASK 29-33-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29105 from the left reservoir quantity transmitter, M29105.
 - (c) Do a wiring check between these pins of connector DM29105 at the left reservoir quantity transmitter, M29105, and connector XA17 at the LSCF, P85 (SSM 29-11-13):

DM29105	XA17
pin 1	pin 90
pin 3	pin 82
pin 5	pin 84

- (d) Do a continuity check between pin 4 of connector DM29105 at the left reservoir quantity transmitter, M29105, and structure ground (SSM 29-11-13).

EFFECTIVITY
ARO ALL

29-11 TASKS 836-837

D633W103-ARO

Page 279
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29105.
 - 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

838. Air-Driven Pump 1 Speed Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11100.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: A failure of the ADP C1 can occur because of freezing. Therefore, the subsequent testing of the ADP C1 will show no fault if the ice has melted. If this is the problem, a check of the ADP C1 heater should be done.

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If one or more maintenance message show on the ground test display, then do these steps:
- 1) Find each message in the Maintenance Message Index.
 - 2) Do the specified fault isolation task.
- (b) If no maintenance message shows on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the air-driven pump (ADP) 1 modulating shutoff valve (MSOV), V29305:
- (a) Set the power switch for the HYDIM-CR card, to the OFF position.
- NOTE: Use the power control decal on the RSCF, P84, to find the appropriate switch.
- (b) Disconnect connector DV29305 from the MSOV, V29305.
- (c) Measure the resistance between pins 1 and 2 of connector DV29305 on the MSOV, V29305 (WDM 29-11-38).
- (d) If the resistance is less than 30 ohms, then do these steps:
- 1) Replace the MSOV, V29305.
- These are the tasks:
- Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
- Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 837-838

D633W103-ARO

Page 280
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

- 3) Set the power switch for the HYDIM-CR card, to the ON position.

- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (e) If the resistance is greater than 30 ohms, then continue.

- (2) Do this check of the wiring:

- (a) Disconnect connector DM29306B from the ADP 1 LSCU, M29306.

- (b) Do a wiring check between these pins of connector DM29306B, at the LSCU, M29306, and connector DV29305, at the MSOV, V29305 (WDM 29-11-38):

DM29306B

DV29305

pin 14 pin 1

- (c) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.

- 2) Re-connect connectors DV29305 and DM29306B.

- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

- (d) If you do not find a problem with the wiring, then continue.

- (e) Re-connect connectors DV29305 and DM29306B.

- (3) Do this check of the wiring:

- (a) Remove HYDIM-CR card, A4 in the (RSCF), P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.

- (b) Disconnect connector DM29306A from the ADP 1 LSCU, M29306.

- (c) Do a wiring check between these pins of connector XA4 in the RSCF, P84 and connector DM29306A for the ADP 1 LSCU, M29306 (WDM 29-11-38):

XA4

DM29306A

pin 11 pin 8

pin 12 pin 8

- (d) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.

- 2) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 3) Re-connect connector DM29306A.

EFFECTIVITY
ARO ALL

29-11 TASK 838

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 281
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (g) Re-connect connector DM29306A.
- (4) Do this check of the wiring:
- (a) Disconnect connector DM29306B from the ADP 1 LSCU, M29306.
- (b) Disconnect connector DM29310B from the Turbine Gearbox Assembly, M29310.
- (c) Do a wiring check between these pins of connector DM29306B at the ADP 1 LSCU, M29306 and connector DM29310B at the Turbine Gearbox Assembly, M29310 (SSM 29-11-38):

DM29306B	DM29310B
6	1
7	2
8	3
9	4

- (d) Disconnect connector DM29310A from the Turbine Gearbox Assembly, M29310.
- (e) Do a wiring check between these pins of connector DM29306B at the ADP 1 LSCU, M29306 and connector DM29310A at the Turbine Gearbox Assembly, M29310 (SSM 29-11-38):

DM29306B	DM29310A
1	1
2	2
3	4
4	5
10	8
11	9
12	11
13	12

- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29310A.
 - 3) Re-connect connector DM29310B.
 - 4) Re-connect connector DM29306B.

EFFECTIVITY
ARO ALL

29-11 TASK 838

D633W103-ARO

Page 282
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 5) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 6) If the maintenance message does not show on the ground test display, you corrected the fault.
- (g) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the air-driven pump (ADP) 1 modulating shutoff valve (MSOV), V29305:
 - (a) Pressurize the center hydraulic system with the ADP C1. Do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) Put the ADP C1 selector switch on the overhead panel to the ON position.
 - (c) Make sure the visual indicator on ADP C1 MSOV shows the MSOV is fully open.
 - (d) If the ADP C1 MSOV does not show fully open, do these steps:
 - 1) Replace the MSOV, V29305. Do these tasks:
 - Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801
 - Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) Do this check of the Air-Driven Pump (ADP) C1 heater:
 - (a) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - (b) If the current was less than 1.5 amps on the ground wire and the RAT GEN HEAT status message is shown, do this task: RAT Generator Heater Problems - Fault Isolation, 29-21 TASK 809.
 - (c) If the current was less than 1.5 amps on the ground wire and the RAT GEN HEAT status message is not shown, then continue.
 - (d) Replace the ADP 1 heater relay, K29021.
 - 1) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - 2) If the current was more than 1.5 amps on the ground wire, you corrected the fault.
 - 3) If the current was less than 1.5 amps on the ground wire, then continue.
 - (e) Do a check of the wiring.
 - 1) Disconnect the connector, DM29010, from the ADP C1 heater (WDM 29-11-40).
 - 2) Do a wiring check between these pins of connector D21039P at the P210 panel and the connector DM29010 at the ADP C1 heater (WDM 29-11-40):



777-200/300 FAULT ISOLATION MANUAL

D21039P

pin 2 pin 2

DM29010

pin 2

- 3) If you find a problem with the wiring then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM29010 at the ADP C1 heater.
 - c) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - d) If the current on the ground wire is more than 1.5 amps, you corrected the fault.
- (f) If you do not find a problem with the wiring then do a check of the ADP C1 heater:
 - 1) Do a continuity check between pins 2 and 6 of the connector on the ADP C1 heater, M29010 (WDM 29-11-40).
 - 2) If you find a problem with the ADP C1 heater, replace the ADP C1 heater.
 - a) These are the tasks:
Air-Driven Pump (ADP) Heater Removal, AMM TASK 29-11-18-000-801,
Air-Driven Pump (ADP) Heater Installation, AMM TASK 29-11-18-400-801.
 - b) Re-connect the connector DM29010.
 - c) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - d) If the current on the ground wire is more than 1.5 amps, you corrected the fault.
 - e) Re-connect the connector DM29010.
 - f) If the current on the ground wire is less than 1.5 amps, then continue.
- (7) If the ADP 1 modulating and shutoff valve, V29305, was not already replaced as part of step 5, then do these steps:

These are the tasks:

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (8) Replace the ADP 1 turbine gearbox assembly, M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 838

D633W103-ARO

Page 284
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

839. HYDIM (Left) No Output on HYDIM Data Out-17 ARINC 429 Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-18891.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Cycle the power supply to the HYDIM-L card, A17, in the left systems card file (LSCF), P85. Do the following steps:
 - (a) Set the power switch for the HYDIM card to OFF position.

NOTE: Use the power control decal on the front of the cardfile to find the appropriate switch.
 - (b) Wait 10 seconds.
 - (c) Set the power switch for the HYDIM card to ON position.

NOTE: Use the power control decal on the front of the cardfile to find the appropriate switch.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the power supply unit (PSU) linear monitor card-2, A18 in the left systems card file (LSCF), P85.

EFFECTIVITY
ARO ALL

29-11 TASKS 838-839

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 285
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

These are the tasks:

Card File Power Supply (CFPS) Installation, AMM TASK 31-09-01-400-801,

Card File Power Supply (CFPS) Removal, AMM TASK 31-09-01-000-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the left AIRINC Signal Gateway (ASG) card, A12 in the left systems card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Replace the right AIRINC Signal Gateway (ASG) card, A15 in the left systems card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (6) Replace the left system cardfile chassis, P85 (WDM 29-11-12).
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

840. ADP 1 Status A,B,C Signals Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11020.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 839-840

D633W103-ARO

Page 286
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Do this check of the power wiring:
 - (a) Disconnect connector DM29306A from the air-driven pump (ADP) 1 logic speed control unit (LSCU).
 - (b) Do a check for 28V DC from pin 6 of connector DM29306A to structure ground.
 - (c) If there is not 28V DC at pin 6 of connector DM29306A, then do these steps:
 - 1) Repair the wiring between pin 6 of connector DM29306A in the ADP 1 LSCU, M29306, and the load terminal of circuit breaker C29609 (SSM 29-11-38):

DM29306A	C29609
pin 6	pin 2

- 2) Re-connect connector DM29306A.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is 28V DC at pin 6 of connector DM29306A, then continue.
- (2) Do this check of the wiring from the ADP 1 LSCU to the HYDIM-CR:
 - (a) Remove the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right system card file (RSCF), P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Do a wiring check between these pins of connector DM29306A at the ADP 1 LSCU, M29306, and connector XA4 at the RSCF, P84 (SSM 29-11-38):

DM29306A	XA4
pin 11	pin 22
pin 12	pin 28
pin 13	pin 26

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29306A.
 - 3) Re-install the HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find a problem with the wiring, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 840

D633W103-ARO

Page 287
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (e) Re-install the HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (3) Replace the ADP 1 modulating and shutoff valve, V29305.

These are the tasks:

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

- (4) Replace the ADP 1 LSCU, M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

- (5) Replace the HYDIM-CR card, A4, in the RSCF, P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

- (6) Replace the ADP 1 turbine gearbox assembly, M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 840

D633W103-ARO

Page 288
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

841. Modulating Shutoff Valve (ADP 1) Command Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11040.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (a) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (b) If the ADP 1 pressure on the hydraulic maintenance page is greater than 200 psig, then do these steps:
 - 1) Replace the pressure transducer check valve on the ADP 1 pressure and case drain filter module.
These are the tasks:
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 840-841

D633W103-ARO

Page 289
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (c) If the ADP 1 pressure on the hydraulic maintenance page is less than 200 psig, then continue.
- (2) Do this task: Pressurize the Pneumatic System, AMM TASK 36-00-00-860-802.
 - (a) Do a check for spinning sound from the ADP 1 and air from the exhaust manifold.
 - (b) If there is spinning sound from the ADP 1 and air from the exhaust manifold, then do these steps:
 - 1) Replace the air driven pump (ADP) 1 modulating shutoff valve (MSOV), V29305.
These are the tasks:
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If there is no spinning sound from the ADP 1 and no air from the exhaust manifold, then continue.
- (3) Replace the ADP 1 pressure transducer, M29318.
These are the tasks:
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 841

D633W103-ARO

Page 290
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

842. Demand Pump (Left) Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43340.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the L DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in the AUTO or ON position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in the AUTO and ON positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the L demand selector, S6, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-12).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the L DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the AUTO or ON position, then continue.
- (2) Do this check of the wiring from the L demand selector to the right overhead panel cardfile (OPCF-R):
 - (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-12).
 - (b) Disconnect connector M29004DS6 from the L demand selector.
 - (c) Disconnect connector DM23217H from the OPCF-R M23217.
 - (d) Do a wiring check between these pins of connector M29004DS6 at pilot's overhead panel, P5, and connector DM23217H at the maintenance panel, P61 (WDM 29-11-12):

M29004DS6

pin G	.....
pin H	.....
pin J	.....
pin K	.....

DM23217H

pin A15
pin A14
pin A13
pin A16

EFFECTIVITY
ARO ALL

29-11 TASKS 841-842

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 291
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M29004DS6 and DM23217H.
 - 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the L DEMAND selector first to AUTO, then to OFF.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connector M29004DS6.
 - (h) Re-install the hydraulic/ram air turbine module, M29004
 - (3) Replace the OPCF-R chassis, M23217.
- These are the tasks:
- Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the L DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.

— END OF TASK —

843. Air Driven Pump 1 Speed Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10070.

B. Fault Isolation Procedure

NOTE: The order of the troubleshooting steps on this task are different from the order of the steps on the MAT ground test.

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the air supply maintenance page on the MFD. To show this page, do this task:
Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (a) Look at the APU shutoff valve and manifold duct pressure indications on the air supply maintenance page.
 - (b) If the APU shutoff valve indication shows CLOSED, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10100
 - b) 36-10110
 - c) 36-10120
 - d) 36-10130

EFFECTIVITY
ARO ALL

29-11 TASKS 842-843

D633W103-ARO

Page 292
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message 29-10070 does not show on the ground test display, you corrected the fault.
- (c) If the APU shutoff valve indication shows OPEN, then continue.
- (d) If the manifold duct pressure indication shows less than 20 psig, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10180
 - b) 36-10190
 - c) 36-10200
 - d) 36-10230
 - e) 36-10240
 - f) 36-10250
 - g) 36-10260
 - h) 36-10270
 - i) 36-10280
 - j) 36-10320
 - k) 36-10330
 - l) 36-10340
 - m) 36-10350
 - n) 36-10360
 - o) 36-10370
 - p) 38-10380
 - q) 36-10390
 - r) 36-10400
 - s) 36-10460
 - t) 36-10470
 - u) 36-10480
 - v) 36-10490
 - w) 36-10500
 - x) 36-10510
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 843

D633W103-ARO

Page 293
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) Find the maintenance message in the applicable FIM Maintenance Message Index.
- b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message 29-10070 does not show on the ground test display, you corrected the fault.
- (e) If the APU shutoff valve indication shows OPEN and manifold duct pressure indication shows greater than 20 psig, then continue.
- (2) Replace the ADP 1 modulating and shutoff valve, V29305.

These are the tasks:

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the air driven pump (ADP) 1 logic speed control unit (LSCU), M29306.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 843

D633W103-ARO

Page 294
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the ADP 1 turbine gearbox assembly (TGA), M29310.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

844. Air Driven Pump 2 Speed Out of Range - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10080.

B. Fault Isolation Procedure

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the air supply maintenance page on the MFD. To show this page, do this task:
Showing a Maintenance Page, AMM TASK 31-61-00-800-804.

- (a) Look at the APU shutoff valve, center isolation valve, and manifold duct pressure indications on the air supply maintenance page.

- (b) If the APU shutoff valve indication shows CLOSED, then do these steps:

- 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):

- a) 36-10100
- b) 36-10110
- c) 36-10120
- d) 36-10130

- 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:

- a) Find the maintenance message in the applicable FIM Maintenance Message Index.

EFFECTIVITY
ARO ALL

29-11 TASKS 843-844

D633W103-ARO

Page 295
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
 - NOTE:** Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - a) If the maintenance message 29-10080 does not show on the ground test display, you corrected the fault.
- (c) If the APU shutoff valve indication shows OPEN, then continue.
- (d) If the center isolation valve indication shows CLOSED, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10140
 - b) 36-10150
 - c) 36-10160
 - d) 36-13001
 - e) 35-13002
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
 - NOTE:** Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - a) If the maintenance message 29-10080 does not show on the ground test display, you corrected the fault.
- (e) If the center isolation valve indication shows OPEN, then continue.
- (f) If the manifold duct pressure indication shows less than 20 psig, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10180
 - b) 36-10190
 - c) 36-10200
 - d) 36-10230
 - e) 36-10240
 - f) 36-10250
 - g) 36-10260
 - h) 36-10270
 - i) 36-10280
 - j) 36-10320
 - k) 36-10330

EFFECTIVITY
ARO ALL

29-11 TASK 844

D633W103-ARO

Page 296
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- l) 36-10340
 - m) 36-10350
 - n) 36-10360
 - o) 36-10370
 - p) 38-10380
 - q) 36-10390
 - r) 36-10400
 - s) 36-10460
 - t) 36-10470
 - u) 36-10480
 - v) 36-10490
 - w) 36-10500
 - x) 36-10510
- 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
- a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message 29-10080 does not show on the ground test display, you corrected the fault.
- (g) If the APU shutoff valve and center isolation valve indications show OPEN and manifold duct pressure indication shows greater than 20 psig, then continue.
- (2) Replace the ADP 2 modulating and shutoff valve, V29304.
- These are the tasks:
- Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM
TASK 29-11-14-000-801,
- Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM
TASK 29-11-14-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the air driven pump (ADP) 2 logic speed control unit (LSCU), M29321.
- These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASK 844

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 297
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the ADP 2 turbine gearbox assembly (TGA), M29314.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

845. **Air Driven Pump 1 Pneumatic Power Problems - Fault Isolation**

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10130.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

EFFECTIVITY
ARO ALL

29-11 TASKS 844-845

D633W103-ARO

Page 298
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (1) Look at the air supply maintenance page on the MFD. To show this page, do this task:
Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (a) Look at the APU shutoff valve and manifold duct pressure indications on the air supply maintenance page.
 - (b) If the APU shutoff valve indication shows CLOSED, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10100
 - b) 36-10110
 - c) 36-10120
 - d) 36-10130
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message 29-10130 does not show on the ground test display, you corrected the fault.
 - (c) If the APU shutoff valve indication shows OPEN, then continue.
 - (d) If the manifold duct pressure indication shows less than 20 psig, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10180
 - b) 36-10190
 - c) 36-10200
 - d) 36-10230
 - e) 36-10240
 - f) 36-10250
 - g) 36-10260
 - h) 36-10270
 - i) 36-10280
 - j) 36-10320
 - k) 36-10330
 - l) 36-10340
 - m) 36-10350
 - n) 36-10360
 - o) 36-10370

EFFECTIVITY
ARO ALL

29-11 TASK 845

D633W103-ARO

Page 298.1
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

- p) 38-10380
 - q) 36-10390
 - r) 36-10400
 - s) 36-10460
 - t) 36-10470
 - u) 36-10480
 - v) 36-10490
 - w) 36-10500
 - x) 36-10510
- 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
- a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message 29-10130 does not show on the ground test display, you corrected the fault.
- (e) If the APU shutoff valve indication shows OPEN and manifold duct pressure indication shows greater than 20 psig, then continue.
- (2) Replace the right air supply cabin pressure controller (ASCPC), M36112.
- These are the tasks:
- ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.
- These are the tasks:
- Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASK 845

D633W103-ARO

Page 298.2
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

846. Air Driven Pump 2 Pneumatic Power Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10140.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the air supply maintenance page on the MFD. To show this page, do this task:
Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (a) Look at the APU shutoff valve, center isolation valve, and manifold duct pressure indications on the air supply maintenance page.
 - (b) If the APU shutoff valve indication shows CLOSED, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10100
 - b) 36-10110
 - c) 36-10120
 - d) 36-10130
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message 29-10140 does not show on the ground test display, you corrected the fault.
 - (c) If the APU shutoff valve indication shows OPEN, then continue.
 - (d) If the center isolation valve indication shows CLOSED, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10140
 - b) 36-10150
 - c) 36-10160
 - d) 36-13001
 - e) 36-13002

EFFECTIVITY
ARO ALL

29-11 TASKS 845-846

D633W103-ARO

Page 298.3
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message 29-10140 does not show on the ground test display, you corrected the fault.
- (e) If the center isolation valve indication shows OPEN, then continue.
- (f) If the manifold duct pressure indication shows less than 20 psig, then do these steps:
 - 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10180
 - b) 36-10190
 - c) 36-10200
 - d) 36-10230
 - e) 36-10240
 - f) 36-10250
 - g) 36-10260
 - h) 36-10270
 - i) 36-10280
 - j) 36-10320
 - k) 36-10330
 - l) 36-10340
 - m) 36-10350
 - n) 36-10360
 - o) 36-10370
 - p) 38-10380
 - q) 36-10390
 - r) 36-10400
 - s) 36-10460
 - t) 36-10470
 - u) 36-10480
 - v) 36-10490
 - w) 36-10500
 - x) 36-10510
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 846

D633W103-ARO

Page 298.4
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) Find the maintenance message in the applicable FIM Maintenance Message Index.
- b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message 29-10140 does not show on the ground test display, you corrected the fault.
 - (g) If the APU shutoff valve and center isolation valve indications show OPEN and manifold duct pressure indication shows greater than 20 psig, then continue.
- (2) Replace the left air supply cabin pressure controller (ASCPC), M36111.

These are the tasks:
ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

847. Air Driven Pump 1 Selector Switch Position Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10350.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

EFFECTIVITY
ARO ALL

29-11 TASKS 846-847

D633W103-ARO

Page 298.5
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 23):
 - (a) 23-48801
 - (b) 23-48802
 - (c) 23-48841
 - (d) 23-48842
 - (e) 23-48861
 - (f) 23-48862
 - (g) 23-41110
 - (h) 23-42110
 - (i) 23-43110
 - (j) If the MAT shows ACTIVE or LATCHED for one of the maintenance message specified above, then do these steps:
 - 1) Find each message in the Maintenance Message Index.
 - 2) Do the specified fault isolation task.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message 29-10350 does not show on the ground test display, you corrected the fault.
 - (k) If none of the specified maintenance messages show in Present Leg Faults, then continue.
- (2) Replace the ARINC 629 signal gateway (ASG) card, A12, in the left system card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the ARINC 629 signal gateway (ASG) card, A15, in the right system card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

EFFECTIVITY
ARO ALL

29-11 TASK 847

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.6
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

848. Air Driven Pump 1 Pressure Input Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10360.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the ground test display on the MAT for these maintenance messages:
 - (a) 29-10380
 - (b) 29-10390
- (2) If the two maintenance messages specified above show on the ground test display with the message 29-10360, then do these steps:
 - (a) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (b) If the maintenance messages related to the left ASG in the left cardfile and right ASG in the right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or a ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 847-848

D633W103-ARO

Page 298.7
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the right cardfile show in Existing Faults, then do these steps:
- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the left cardfile show in Existing Faults, then do these steps:
- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (f) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message shows on the ground test display, then continue.
- (g) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASK 848

D633W103-ARO

Page 298.8
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) If the two maintenance messages specified above do not show on the ground test display with the message 29-10360, then do these steps:
- (a) Replace the air-driven pump (ADP) 1 pressure transducer, M29318.
- These are the tasks:
- Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,
- Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.
- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- b) If the maintenance message shows on the ground test display, then continue.
- (b) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
- These are the tasks:
- Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
- Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- b) If the maintenance message shows on the ground test display, then continue.
- (c) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.
- These are the tasks:
- Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
- Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or a ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
ARO ALL

29-11 TASK 848

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.9
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

849. Air Driven Pump 2 Selector Switch Position Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10370.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA chapter 23):

- (a) 23-48801
- (b) 23-48802
- (c) 23-48841
- (d) 23-48842
- (e) 23-48861
- (f) 23-48862
- (g) 23-41120
- (h) 23-42120
- (i) 23-43120

- (j) If the MAT shows ACTIVE or LATCHED for one of the maintenance message specified above, then do these steps:

- 1) Find each message in the applicable FIM Maintenance Message Index.
- 2) Do the specified fault isolation task.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message 29-10370 does not show on the ground test display, you corrected the fault.

- (k) If none of the specified maintenance messages show in Present Leg Faults, then continue.

- (2) Replace the ARINC 629 signal gateway (ASG) card, A12, in the left system card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 849

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.10
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (3) Replace the ARINC 629 signal gateway (ASG) card, A15, in the right system card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

- (4) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

850. Air-Driven Pump 2 Speed Control Function Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10040.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Replace the air-driven pump (ADP) 2 logic speed control unit (LSCU), M29321.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASKS 849-850

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.11
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29321A from the ADP 2 LSCU.
 - (c) Do a wiring check between these pins of connector XA4 in the LSCF, P85, and connector DM29321A at the ADP 2 LSCU (SSM 29-11-39):

XA4	DM29321A
pin 11	pin 8
pin 12	pin 8

- (d) Do a continuity check from pins 3 and 10 of connector DM29321A at the ADP 2 LSCU, M29321, to structure ground (SSM 29-11-39).
- (e) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29321A.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

851. Air-Driven Pump 2 Reserve Power Function Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10120.

EFFECTIVITY
ARO ALL

29-11 TASKS 850-851

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.12
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Fault Isolation Procedure

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

(1) Do this check of the wiring from the ADP 2 LSCU to HYDIM:

- (a) Remove the HYDIM-CL card, A4, in the left systems card file (LSCF), P85, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Remove the connector DM29321A from the ADP LSCU C2, M29321.
- (c) Do a wiring check between these pins of connector DM29321A at the ADP 2 LSCU, M29321, and connector XA4 at the LSCF, P85.

DM29321A	XA4
pin 7	pin 24
pin 14	pin 21

(d) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-install the HYDIM-CL card, A4, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 3) Re-connect connector DM29321A.
- 4) Do this ground test on the MAT: 29, Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- b) If the maintenance message shows on the ground test display, then continue.

(e) If you do not find a problem with the wiring, then continue.

- (f) Re-install the HYDIM-CL card, A4, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801

(2) Replace the ADP 2 wiring harness between the LSCU and the turbine gearbox assembly (TGA) (SSM 29-11-39).

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

(3) Look at the air supply maintenance page on the MFD. To show this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.

- (a) Look at the APU shutoff valve, center isolation valve, and manifold duct pressure indications on the air supply maintenance page.

EFFECTIVITY
ARO ALL

29-11 TASK 851

D633W103-ARO

Page 298.13
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the APU shutoff valve indication shows CLOSED, then do these steps:
- 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10100
 - b) 36-10110
 - c) 36-10120
 - d) 36-10130
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message 29-10120 does not show on the ground test display, you corrected the fault.
- (c) If the APU shutoff valve indication shows OPEN, then continue.
- (d) If the center isolation valve indication shows CLOSED, then do these steps:
- 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):
 - a) 36-10140
 - b) 36-10150
 - c) 36-10160
 - d) 36-13001
 - e) 36-13002
 - 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message 29-10120 does not show on the ground test display, you corrected the fault.
- (e) If the center isolation valve indication shows OPEN, then continue.
- (f) If the manifold duct pressure indication shows less than 20 psig, then do these steps:
- 1) Look at the Present Leg Faults display on the MAT for these maintenance messages (select SORT by ATA and chapter 36):

EFFECTIVITY
ARO ALL

29-11 TASK 851

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.14
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- a) 36-10180
 - b) 36-10190
 - c) 36-10200
 - d) 36-10230
 - e) 36-10240
 - f) 36-10250
 - g) 36-10260
 - h) 36-10270
 - i) 36-10280
 - j) 36-10320
 - k) 36-10330
 - l) 36-10340
 - m) 36-10350
 - n) 36-10360
 - o) 36-10370
 - p) 38-10380
 - q) 36-10390
 - r) 36-10400
 - s) 36-10460
 - t) 36-10470
 - u) 36-10480
 - v) 36-10490
 - w) 36-10500
 - x) 36-10510
- 2) If the MAT shows ACTIVE or LATCHED for one of the maintenance messages specified above, then do these steps:
- a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified fault isolation task for each maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message 29-10120 does not show on the ground test display, you corrected the fault.
- (g) If the APU shutoff valve and center isolation valve indications show OPEN and manifold duct pressure indication shows greater than 20 psig, then continue.
- (4) Replace the air-driven pump (ADP) 2 logic speed control unit (LSCU), M29321.
- These are the tasks:
- Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,

EFFECTIVITY
ARO ALL

29-11 TASK 851

D633W103-ARO

Page 298.15
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (5) Replace center-right hydraulic interface module (HYDIM-CL), A4, in the left systems card file (LSCF), P85,

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29, Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the ADP 2 turbine gearbox assembly, M29314.

These are the tasks:

Air-Driven Pump (ADP) Assembly Removal, AMM TASK 29-11-10-000-801,

Air-Driven Pump (ADP) Assembly Installation, AMM TASK 29-11-10-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

852. HYDIM-CL Isolation Signal to FSEU 2 Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10170.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Center Hydraulic Isolation System ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASKS 851-852

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.16
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the flap/slat electronic unit 2 (FSEU 2), M27002.

These are the tasks:

Flap/Slat Electronics Unit (FSEU) Removal, AMM TASK 27-51-01-000-801,
Flap/Slat Electronics Unit (FSEU) Installation, AMM TASK 27-51-01-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Remove FSEU 2, M27002. To install it, do this task: Flap/Slat Electronics Unit (FSEU) Removal, AMM TASK 27-51-01-000-801.
 - (c) Do a wiring check between these pins of connector XA4 in the LSCF, P85, and connector DM27002AA at the E4-11 shelf (SSM 29-11-37):

XA4	DM27002AA
pin 38	pin J6
- (d) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-install FSEU 2, M27002. To install it, do this task: Flap/Slat Electronics Unit (FSEU) Installation, AMM TASK 27-51-01-400-801.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Center Hydraulic Isolation System.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

853. Air-Driven Pump 2 Auto Control Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10190.

EFFECTIVITY
ARO ALL

29-11 TASKS 852-853

D633W103-ARO

Page 298.17
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure.
- (b) IF the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

- (2) Replace the air driven pump (ADP) 2 logic speed control unit (LSCU), M29321.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

- (3) Do this check of the air driven pump (ADP) 2 modulating shutoff valve (MSOV), V29304:

- (a) Set the power switch for the HYDIM-CL card, to the OFF position.

NOTE: Use the power control decal on the LSCF, P85, to find the appropriate switch.

- (b) Disconnect connector DV29304 from the MSOV, V29304.

- (c) Measure the resistance between pins 1 and 2 of connector DV29304 at the MSOV, V29304 (WDM 29-11-39).

- (d) If the resistance is less than 30 ohms, then do these steps:

- 1) Replace the MSOV, V29304.

EFFECTIVITY
ARO ALL

29-11 TASK 853

D633W103-ARO

Page 298.18
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

These are the tasks:

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.

- 2) Set the power switch for the HYDIM-CL card, to the ON position.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the resistance is greater than 30 ohms, then continue.
- (4) Do this check of the wiring:
 - (a) Disconnect connector DM29321B from the ADP 2 LSCU, M29321.
 - (b) Do a wiring check between these pins of connector DM29321B, at the LSCU, M29321, and connector DV29304, at the MSOV, V29304 (WDM 29-11-39):

DM29321B	DV29304
pin 14	pin 1

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DV29304 and DM29321B.
 - 3) Set the power switch for the HYDIM-CL card, to the ON position.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Re-connect connectors DV29304 and DM29321B.

- (5) Do this check of the wiring:
 - (a) Disconnect connector DM29321A from the ADP 2 LSCU, M29321.
 - (b) Remove HYDIM-CL card, A4 in the (LSCF), P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (c) Do a wiring check between these pins of connector XA4 in the LSCF, P85 and connector DM29321A for the ADP 2 LSCU, M29321 (SSM 29-11-39):

XA4	DM29321A
pin 11	pin 8
pin 12	pin 8

- (d) If you find a problem with the wiring, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 853

D633W103-ARO

Page 298.19
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Repair the wiring.
- 2) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 3) Re-connect connector DM29321A.
- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

854. Right Truck Positioner Pressure Transducer Signal to HYDIM Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10880.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right truck positioner pressure transducer, M29211 (AMM 32-32-22/401).
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29211 from the right truck positioner pressure transducer, M29211 (SSM 29-11-22).
 - (c) Do a wiring check between these pins at connector XA17 in the RSCF, P84 and connector DM29211 at the left truck positioner pressure transducer, M29211 (SSM 29-11-22):

EFFECTIVITY
ARO ALL

29-11 TASKS 853-854

D633W103-ARO

Page 298.20
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

XA17	DM29211
pin 71	pin 3
pin 73	pin 2

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29211 to the right truck positioner pressure transducer, M29211 (SSM 29-11-22).
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

———— END OF TASK ————

855. ADP 2 Secondary Speed Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10060.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Replace the air-driven pump (ADP) 2 turbine gearbox assembly (TGA), M29314.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.

- (c) If the maintenance message shows on the ground test display, then continue.

- (2) Replace the ADP 2 logic speed control unit (LSCU), M29321.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASKS 854-855

D633W103-ARO

Page 298.21
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29321A from the ADP 2 LSCU, M29321.
 - (c) Do a wiring check between these pins of connector DM29321A at the ADP 2 LSCU, M29321, and connector XA4 at the LSCF, P85 (SSM 29-11-39):

DM29321A	XA4
pin 7	pin 24
pin 11	pin 29
pin 12	pin 22
pin 13	pin 28

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29321A.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 5) If the maintenance message does not show on the ground test display, then you corrected the fault.

————— **END OF TASK** —————

856. ADP 2 Overspeed Reset Function Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10100.

EFFECTIVITY
ARO ALL

29-11 TASKS 855-856

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.22
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Do this check of the overspeed monopole wiring:
 - (a) Disconnect connector DM29314B from the air-driven pump (ADP) 2 turbine gearbox assembly (TGA), M29314.
 - (b) Do a continuity check between pins 3 and 4 of connector DM29314B (SSM 29-11-39).
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Replace the ADP 2 TGA, M29314.
These are the tasks:
Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,
Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find a problem with the wiring, then continue.

- (2) Do this check of the wiring from the TGA to the LSCU:
 - (a) Disconnect connector DM29321B from the ADP 2 logic speed control unit (LSCU), M29321.
 - (b) Do a wiring check between these pins of connector DM29314B at the ADP 1 TGA, M29314, and connector DM29321B at the ADP 2 LSCU (SSM 29-11-39):

DM29314B

pin 3	.....	pin 8
pin 4	.....	pin 9

DM29321B

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM29314B and DM29321B.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Re-connect connectors DM29314B and DM29321B.

- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASK 856

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.23
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
(c) If the maintenance message shows on the ground test display, then continue.

- (4) Replace the ADP 2 LSCU, M29321.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, operational test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, then you corrected the fault.
(c) If the maintenance message shows on the ground test display, then continue.

- (5) Do this check of the wiring:

- (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
(b) Disconnect connector DM29321A from the ADP 2 LSCU, M29321.
(c) Do a wiring check between these pins of connector DM29321A at the ADP 2 LSCU, M29321, and connector XA4 at the LSCF, P85 (SSM 29-11-39):

DM29321A	XA4
pin 7	pin 24

- (d) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-connect connector DM29321A.
- 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
ARO ALL

29-11 TASK 856

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.24
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

857. Landing Gear Auto Off B Command Circuit Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10280.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay B.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the landing gear auto off B relay, K32016 in the P310 standby power management panel (SSM 32-31-11).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay B.
 - (b) If the ground test does not show on the ground test display, you corrected the fault.
 - (c) If the ground test shows on the ground test display, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay B.
 - (b) If the ground test does not show on the ground test display, you corrected the fault.
 - (c) If the ground test shows on the ground test display, then continue.
- (3) Do this check of the power wiring:
 - (a) Remove the landing gear auto off B relay, K32016 in the P310 standby power management panel (SSM 32-31-11).
 - (b) Do a check for 28V DC between pin X1 of connector DK29016 of the landing gear auto off A relay, K32016, and structure ground (SSM 32-31-11).
 - (c) If there is not 28V DC at pin X1 of connector DK29016, then do these steps:
 - 1) Open the P11 pilot's overhead circuit breaker panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C32616.
 - 3) If there is not 28V DC at the circuit breaker, then do these steps:
 - a) Replace this circuit breaker:
(SSM 32-31-11)

EFFECTIVITY
ARO ALL

29-11 TASK 857

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.25
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	9	C32616	LDG GEAR RETR AUTO OFF

- b) Re-install the landing gear auto off B relay, K32016.
 - c) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay B.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 4) If there is 28V DC at the circuit breaker, then do these steps:
- a) Repair the wiring between these pins of connector DK32016 of the landing gear auto off B relay, K32016, and the load terminal of circuit breaker C32616 (SSM 32-31-11).

DK29016	C29616
pin X1	pin 2

- b) Re-install the landing gear auto off B relay, K32016.
 - c) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay B.
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If there is 28V DC at pin X1 of connector DK32016, then continue.
- (4) Do this check of the wiring:
- (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Do a wiring check between these pins of connector DK32016 at the P310 standby power management panel and connector XA17 at the RSCF, P84 (SSM 32-31-11):

DK32016	XA17
pin X2	pin 33

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 3) Re-install the landing gear auto off B relay, K32016.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-Off Relay B.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

858. Logic Speed Control Unit (ADP 2) Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10470.

EFFECTIVITY
ARO ALL

29-11 TASKS 857-858

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.26
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the air-driven pump (ADP) 2 logic speed control unit (LSCU), M29321

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29321A from the ADP 2 LSCU, M29321.
 - (c) Do a wiring check between these pins of connector DM29321A at the ADP 2 LSCU, M29321, and connector XA4 at the LSCF, P85 (SSM 29-11-39):

EFFECTIVITY
ARO ALL

29-11 TASK 858

D633W103-ARO

Page 298.27
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

DM29321A	XA4
pin 7	pin 24
pin 11	pin 29
pin 12	pin 22
pin 13	pin 28

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29321A.
 - 3) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring:
- (a) Disconnect connector DM29321B from the ADP 2 LSCU, M29321.
 - (b) Disconnect connector DM29314B from the Turbine Gearbox Assembly, M29314.
 - (c) Do a wiring check between these pins of connector DM29321B at the ADP 2 LSCU, M29321 and connector DM29314B at the Turbine Gearbox Assembly, M29314 (SSM 29-11-39):

DM29321B	DM29314B
6	1
7	2
8	3
9	4

- (d) Disconnect connector DM29314A from the Turbine Gearbox Assembly, M29314.
- (e) Do a wiring check between these pins of connector DM29321B at the ADP 2 LSCU, M29321 and connector DM29314A at the Turbine Gearbox Assembly, M29314 (SSM 29-11-39):

DM29321B	DM29314A
1	1
2	2
3	4
4	5
10	8
11	9
12	11
13	12

EFFECTIVITY
ARO ALL

29-11 TASK 858

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.28
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29314A.
 - 3) Re-connect connector DM29314B.
 - 4) Re-connect connector DM29321B.
 - 5) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.

END OF TASK

859. Modulating Shutoff Valve (ADP 2) Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10480.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: A failure of the ADP C2 can occur because of freezing. Therefore, the subsequent testing of the ADP C2 will show no fault if the ice has melted. If this is the problem, a check of the ADP C2 heater should be done.

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do a check of the modulating shutoff valve (MSOV) and the air-driven pump (ADP):
- (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (b) Make sure that the visual indicator on ADP C2 shows that the MSOV is closed.
 - (c) Listen for excessive air flow through the ADP exhaust duct when the selector is at the OFF position.
 - (d) If there is no excessive air flow through the ADP exhaust duct when the MSOV is closed, then do these steps:
 - 1) Pressurize the center hydraulic system with the ADP C2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.

EFFECTIVITY
ARO ALL

29-11 TASKS 858-859

D633W103-ARO

Page 298.29
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) Look at the hydraulic maintenance page on the MPD. To show this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - 3) Put the ADP C2 DEMAND selector switch on the overhead panel first to AUTO position, and then to the ON position.
 - 4) If the hydraulic maintenance page shows that the center system pressure is low and the pump is not operated for the AUTO and ON position, then do these steps:
 - a) Replace the ADP 2 MSOV, V29304.
These are the tasks:
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.
 - b) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - d) If the maintenance message shows on the ground test display, then continue.
 - e) Replace the ADP C2, M29309.
These are the tasks:
Air-Driven Pump (ADP) Assembly Removal, AMM TASK 29-11-10-000-801,
Air-Driven Pump (ADP) Assembly Installation, AMM TASK 29-11-10-400-801.
 - f) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - g) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 5) If the hydraulic maintenance page shows the center system pressure is high and the pump is operated for AUTO or ON position, then continue.
- (e) If there is excessive air flow through the ADP exhaust duct when the MSOV is closed, then do these steps:
- 1) Replace the ADP 2 MSOV, V29304.
These are the tasks:
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 859

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.30
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- 4) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the C2 DEMAND selector, S8, on the hydraulic/RAT panel, M29004, (SSM 29-11-39).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do this check of the wiring from the modulating shutoff valve (MSOV) to the LSCU:
 - (a) Disconnect connector DV29304 from the ADP 2 MSOV, V29304.
 - (b) Disconnect connector DM29321B from the ADP 2 LSCU, M29321.
 - (c) Do a wiring check between these pins of connector DV29304 at the ADP 2 MSOV, V29304, and connector DM29321B at the ADP 2 LSCU (SSM 29-11-39):

DV29304	DM29321B
pin 1	pin 14
pin 2	pin 15
pin 3	pin 16
pin 4	pin 17

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV29304.
 - 3) Re-connect connector DM29321B.

EFFECTIVITY
ARO ALL

29-11 TASK 859

D633W103-ARO

Page 298.31
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DV29304.
- (g) Re-connect connector DM29321B.
- (5) Do this check of the wiring from the LSCU to the HYDIM-CL card:
- (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29321A from the ADP 2 LSCU, M29321.
- (c) Do a wiring check between these pins of connector DM29321A at the ADP 2 LSCU, M29321, and connector XA4 at the LSCF, P85 (SSM 29-11-39):
- | DM29321A | XA4 |
|-----------------|------------|
| pin 8 | pin 11 |
| pin 8 | pin 12 |
| pin 14 | pin 21 |
- (d) Do a continuity check between pins 5 and 10 of connector DM29321A at the ADP 2 LSCU, M29321, and structure ground (SSM 29-11-39).
- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29321A.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (6) Do this check of the wiring from the C2 demand selector to the right overhead panel cardfile (OPCF-R):
- (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-39).
- (b) Disconnect connector M29004DS8 from the C2 demand selector.
- (c) Do a wiring check between these pins of connector M29004DS8 at pilot's overhead panel, P5, and connector DM29321A at the ADP 2 LSCU, M29321 (WDM 29-11-39):

EFFECTIVITY
ARO ALL

29-11 TASK 859

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.32
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

M29004DS8

pin C pin 9

DM29321A

- (d) Disconnect connector D31038 from the P310 standby power management panel.
- (e) Do a wiring check between these pins of connector M29004DS8 at pilot's overhead panel, P5, and connector D31038 at the P310 panel (WDM 29-11-39):

M29004DS8

pin S pin 4

D31038

- (f) Disconnect connector DM23217H from the OPCF-R, M23217.
- (g) Do a wiring check between these pins of connector M29004DS8 at pilot's overhead panel, P5, and connector DM23217H at the maintenance panel, P61 (WDM 29-11-39):

M29004DS8

pin H pin B17
pin J pin B16
pin K pin B18
pin L pin B15

DM23217H

- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M29004DS8, DM229321A, D31038, and DM23217H.
 - 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

- (7) Do this check of the Air-Driven Pump (ADP) C2 heater:

- (a) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
- (b) If the current was less than 1.5 amps on the ground wire and the RAT GEN HEAT status message is shown, do this task: RAT Generator Heater Problems - Fault Isolation, 29-21 TASK 809.
- (c) If the current was less than 1.5 amps on the ground wire and the RAT GEN HEAT status message is not shown, do a check of the wiring.
 - 1) Disconnect the connector, DM29011, from the ADP C2 heater (SSM 29-11-39).
 - 2) Do a wiring check between these pins of connector D21034P at the P210 panel and the connector DM29011 at the ADP C2 heater (SSM 29-11-39):

D21034P

pin 28 pin 2

DM29011

- 3) If you find a problem with the wiring then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 859

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.33
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) Repair the wiring.
 - b) Re-connect the connector DM29011 at the ADP C2 heater.
 - c) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - d) If the current in the ground wire was more than 1.5 amps, you corrected the fault.
- (d) If you do not find a problem with the wiring then do a check of the ADP C2 heater:
- 1) Do a continuity check between pins 2 and 6 of the connector on the ADP C2 heater, M29011 (SSM 29-11-39).
 - 2) If you find a problem with the ADP C2 heater, replace the ADP C2 heater, M29011.
 - a) These are the tasks:
Air-Driven Pump (ADP) Heater Removal, AMM TASK 29-11-18-000-801,
Air-Driven Pump (ADP) Heater Installation, AMM TASK 29-11-18-400-801.
 - b) Re-connect the connector DM29011.
 - c) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - d) If the current in the ground wire was more than 1.5 amps, you corrected the fault.
- (e) If you do not find a problem with the ADP C2 heater, then continue.
- (f) Re-connect the connector DM29011 at the ADP C2 heater.
- (8) If the ADP 2 modulating and shutoff valve, V29304, was not already replaced as part of step 1, then do these steps:
- These are the tasks:
- Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
- Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE:** Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (9) Replace the air-driven pump (ADP) 2 turbine gearbox assembly (TGA), M29314.
- These are the tasks:
- Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,
- Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
- NOTE:** Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASK 859

D633W103-ARO

Page 298.34
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

860. Air-Driven Pump 2 Overspeed Condition Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10490.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the overspeed monopole wiring:
 - (a) Disconnect connector DM29314B from the air-driven pump (ADP) 2 turbine gearbox assembly (TGA), M29314.
 - (b) Do a continuity check between pins 3 and 4 of connector DM29314B (SSM 29-11-39).
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29314B.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
- (2) Replace the air-driven pump (ADP) 2 turbine gearbox assembly (TGA), M29314.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASKS 859-860

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.35
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring from the TGA to the LSCU:
 - (a) Disconnect connector DM29314B from the ADP 2 TGA, M29314.
 - (b) Disconnect connector DM29321B from the ADP 2 logic speed control unit (LSCU), M29321.
 - (c) Do a wiring check between these pins of connector DM29314B at the ADP 2 TGA, M29314, and connector DM29321B at the ADP 2 LSCU (SSM 29-11-39):

DM29314B		DM29321B	
pin 3	.....	pin 8	
pin 4	.....	pin 9	

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29314B.
 - 3) Re-connect connector DM29321B.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM29314B.
- (g) Re-connect connector DV29321B.

- (4) Replace the ADP 2 LSCU, M29321.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

EFFECTIVITY
ARO ALL

29-11 TASK 860

D633W103-ARO

Page 298.36
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (6) Do this check of the wiring from the LSCU to the HYDIM-CL card:
- (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29321A from the ADP 2 LSCU, M29321.
- (c) Do a wiring check between these pins of connector DM29321A at the ADP 2 LSCU, M29321, and connector XA4 at the LSCF, P85 (SSM 29-11-39):

DM29321A	XA4
pin 11	pin 29
pin 12	pin 22
pin 13	pin 28
pin 14	pin 21

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29321A.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
- NOTE:** Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

861. Turbine Gearbox Assembly (ADP 2) Internal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10460.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.

EFFECTIVITY
ARO ALL

29-11 TASKS 860-861

D633W103-ARO

Page 298.37
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: A failure of the ADP C2 can occur because of freezing. Therefore, the subsequent testing of the ADP C2 will show no fault if the ice has melted. If this is the problem, a check of the ADP C2 heater should be done.

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the wiring harness between the air-driven pump (ADP) 2 logic speed control unit (LSCU), M29321 and the turbine gearbox assembly (TGA), M29314 (WDM 29-11-39).

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Do this check of the Air-Driven Pump (ADP) C2 heater:
- (a) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the air-driven pump (ADP) 2 turbine gearbox assembly (TGA), M29314.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the ADP 2 logic speed control unit (LSCU), M29321.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

EFFECTIVITY
ARO ALL

29-11 TASK 861

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.38
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.
- (5) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

862. ADP (2) Output Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10530.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the center hydraulic system with the air driven pump (ADP) 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASKS 861-862

D633W103-ARO

Page 298.39
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Look at the hydraulic maintenance page on the MFD, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804
 - (a) Pressurize the center hydraulic system with ADP 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) Look at the C DEMAND PUMP PRESS indication on the hydraulic maintenance page.
 - (c) If the C DEMAND PUMP PRESS indication is difference than the center pump pressure, then do these steps:
 - 1) Replace the ADP 2 pressure transducer, M29316
These are the tasks:
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.
 - 2) Pressurize the center hydraulic system with ADP 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the C DEMAND PUMP PRESS indication is same as the center pump pressure, then continue.
- (2) Replace the Air-Driven Pump (ADP) 2 pump.
These are the tasks:
Air-Driven Pump (ADP) Pump Removal, AMM TASK 29-11-11-000-801,
Air-Driven Pump (ADP) Pump Installation, AMM TASK 29-11-11-400-801.
 - (a) Pressurize the center hydraulic system with ADP 2. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check for blocking of the supply hose:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.

EFFECTIVITY
ARO ALL

29-11 TASK 862

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.40
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

(WARNING PRECEDES)



IMMEDIATELY CLEAN ALL HYDRUALIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the self-sealing fitting of the supply hose from the adapter on the ADP 2.
- (c) Remove the adapter from the port of the ADP 2.
- (d) Install the adapter to the self-sealing fitting of the supply hose.
NOTE: A container is necessary to catch the hydraulic fluid drain from the supply hose.
- (e) Tighten the adapter to 855-945 pound-inches.
- (f) If there is no hydraulic fluid drained from the supply hose, then do these steps:
 - 1) Replace the self-sealing fitting and the supply hose (AMM TASK 29-11-11-400-801).
 - 2) Pressurize the center hydraulic system with ADP 1. To pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (g) If there is hydraulic fluid drained from the supply hose, then continue.
- (h) Remove the adapter from the self-sealing fitting.
- (i) Install the adapter to the port on the ADP 2.
- (j) Re-connect the self-sealing fitting of the supply hose to the adapter on the ADP 2.
- (4) Do a check for blocking of the pressure hose:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



IMMEDIATELY CLEAN ALL HYDRUALIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the check valve of the pressure hose from the adapter on the ADP 2.
- (c) Manually push the check valve poppet for approximately 2 seconds at the force of 5-10 pounds.
NOTE: A container is necessary to catch the hydraulic fluid drain from the supply hose.
- (d) If the poppet does not move, is broken or there is no hydraulic fluid drained from the pressure hose, then do these steps:
 - 1) Replace the check valve (AMM TASK 29-11-11-400-801).
 - 2) If the check valve was found broken, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 862

D633W103-ARO

Page 298.41
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) Do an inspection for broken pieces in the hydraulic line and damage to other components from the broken pieces.
- b) Do a check of the ADP pressure filter for contamination. To check it, do this task: Filter Elements of the Air Driven Pumps (ADPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-811.
- 3) Pressurize the center hydraulic system with ADP 1. to pressurize it, do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If there is hydraulic fluid drained from the pressure hose, then continue.
- (f) Re-connect the check valve of the pressure hose to the adapter on the ADP 2.
- (5) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29, Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2)

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (6) Replace the air driven pump (ADP) 2 logic speed control unit (LSCU), M29321.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (7) Replace the ADP 2 turbine gearbox assembly (TGA), M29314.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 862

D633W103-ARO

Page 298.42
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

863. Center Hydraulic System Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10580.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) For the center hydraulic system, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Do this check of the hydraulic internal leakage:
 - (a) For the center hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
 - (b) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
 - 1) Do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
 - 2) For the center hydraulic system, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the hydraulic internal leakage is less than 6.5 gpm, then continue.
- (2) Operate the main hydraulic system with only the Primary pumps, C1 ELEC and C2 ELEC.
 - (a) Observe the EICAS Hydraulic Maintenance Display, ensure the center system pressure is above 2700.
 - (b) If center system pressure is not above 2700, replace the center system pressure transducer M29301.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:

EFFECTIVITY
ARO ALL

29-11 TASKS 862-863

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.43
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Put the C1 ELEC switch on the Hydraulic System Control Panel (P5) to the off (de-selected) position.
 - (a) Observe the EICAS Hydraulic Maintenance Display, ensure the center primary pump pressure (C2) is above 2700.
 - (b) If center system primary pump pressure (C2) is not above 2700, replace the Alternating Current Motor Pump (ACMP) (C2), M29311 (P210).

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,

Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Put the C1 ELEC switch on the Hydraulic System Control Panel (P5) to the on (selected) position.
- (5) Put the C2 ELEC switch on the Hydraulic System Control Panel (P5) to the off (de-selected) position.
 - (a) Observe the EICAS Hydraulic Maintenance Display, ensure the center primary pump pressure (C1) is above 2700.
 - (b) If center system primary pump pressure (C1) is not above 2700, replace the Alternating Current Motor Pump (ACMP) (C1), M29304 (P110).

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,

Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (6) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) For the center hydraulic system, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

EFFECTIVITY
ARO ALL

29-11 TASK 863

D633W103-ARO

Page 298.44
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (7) Operate the main hydraulic system with only the Primary pumps, C1 ELEC and C2 ELEC.
 - (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
197JL	Air Driven Pump (ADP) Access Door
 - (b) Listen to the C1 and C2 air driven pumps (ADP) for an indication that either is being back-driven (operating with ADP off and pneumatic system depressurized).

NOTE: Back-driving occurs when a failure of the check valves downstream of the pump outlet allows center hydraulic system pressure to back-drive the pump and the ADP in reverse.
 - (c) If either is being back-driven, replace the ADP pressure hose mounted check valve, the pressure and case drain filter module associated with the back-driven ADP, and the ADP assembly.
 - 1) Remove the ADP pressure hose mounted check valve: Air-Driven Pump (ADP) Hose-Mounted Check Valve Removal, AMM TASK 29-11-06-000-803.
 - 2) Install a new ADP pressure hose mounted check valve: Air-Driven Pump (ADP) Hose-Mounted Check Valve Installation, AMM TASK 29-11-06-400-802.
 - 3) Remove the ADP pressure and case drain filter module: Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801.
 - 4) Install a new ADP pressure and case drain filter module: Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.
 - 5) Remove the ADP assembly: Air-Driven Pump (ADP) Assembly Removal, AMM TASK 29-11-10-000-801.
 - 6) Install a new ADP assembly: Air-Driven Pump (ADP) Assembly Installation, AMM TASK 29-11-10-400-801.
 - (d) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
197JL	Air Driven Pump (ADP) Access Door
 - (e) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

864. ACMP (Right) Case Drain Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10700.

EFFECTIVITY
ARO ALL

29-11 TASKS 863-864

D633W103-ARO

Page 298.45
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Description

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (1) The ACMP has a Temperature Switch that is a part of the pump.
 - (a) The switch closes at 221°F (105°C) and opens again when the pump temperature decreases to 167°F (75°C).
 - (b) The ACMP Temperature Switch provides an overheat indication that is independent of the ACMP Temperature Transducer.

NOTE: Some ACMP problems can stop the fluid flow from the case drain and cause a pump overheat that is not detected by the ACMP Case Drain Temperature Transducer.
 - (c) The ACMP Temperature Switch is connected in parallel with the ACMP Temperature Transducer. When it closes, the switch circuit provides a signal to the HYDIM Card that is equivalent to the transducer signal at 232.9°F (111.6°C).
 - (d) The valid signal for the ACMP Temperature Transducer is 1 to 40 mA instead of the typical range of 1 to 23 mA. This allows the total signal from the Switch Circuit and the Transducer to be detected as an overheat condition instead of a Transducer problem.
 - (e) An ACMP Temperature Transducer problem that causes the Temperature Signal to be larger than normal (drifting high) can be detected as an overheat condition instead of a Transducer problem.
 - (f) An ACMP Temperature Switch problem that causes the Temperature Signal to be larger than normal (short circuit) can be detected as an ACMP Temperature Transducer problem instead of an overheat condition.

ARO ALL

C. Possible Causes

- (1) Right ACMP ELCU, M29203
- (2) Right ACMP, M29204
- (3) Right ACMP Temperature Transducer, M29210
- (4) Right HYDIM Card, A17
- (5) Wiring

D. Related Data

- (1) WDM 29-11-22

E. Initial Evaluation

- (1) Do a check of the fault history for maintenance messages 29-10700, 29-10710, or 29-17001.
 - (a) If the fault history shows ACTIVE or LATCHED for any combination of these maintenance messages, then do these steps:

NOTE: A history of intermittent ACMP or ELCU fault messages can be an indication of a degraded component that will soon fail in service.

 - 1) Replace the Right ACMP ELCU, M29203. These are the tasks:
 - ELCU Removal, AMM TASK 24-51-05-000-801
 - ELCU Installation, AMM TASK 24-51-05-400-801
 - 2) Replace the Right ACMP, M29204. These are the tasks:
 - Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801

EFFECTIVITY
ARO ALL

29-11 TASK 864

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.46
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801
- (b) If maintenance messages 29-10710 and 29-17001 do not show in the fault history, then continue.
- (2) If the MAT shows ACTIVE for maintenance message 29-10700, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for maintenance message 29-10700, then do these steps:
 - (a) Pressurize the Right Hydraulic System with the Right ACMP. This is the task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the MAINT INFO Page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate the Right ACMP until the Right ACMP Temperature on the HYD Maintenance Page becomes stable.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after the temperature becomes stable, then there was an intermittent problem.
 - a) Remove the Main Hydraulic System Power. This is the task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 2) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do a check for internal hydraulic leakage:
 - NOTE: A higher than normal rate of internal leakage can cause the hydraulic fluid to become hot.
 - (a) For the Right Hydraulic System, do the Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
 - 1) If the internal hydraulic leakage is greater than 6.5 gpm, repair/replace defective components as necessary.
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the internal hydraulic leakage is less than 6.5 gpm, then continue.
- (2) Replace the Right ACMP Temperature Transducer, M29210. These are the tasks:
 - Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-40-000-801
 - Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-40-400-801
- (a) Do the Repair Confirmation at the end of this task.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (3) Do this check of the ACMP Temperature Switch Circuit (WDM 29-11-22):
 - (a) Disconnect connector DM29204B from the Right ACMP, M29204.
 - (b) Measure the resistance between pin 3 of connector DM29204B and structure ground.
 - 1) If the resistance is not 663-733 ohms, then do these steps:
 - a) Repair the wiring.
 - b) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
ARO ALL

29-11 TASK 864

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.47
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

- 2) If the resistance is 663-733 ohms, then continue.
- (c) Make sure the ACMP Temperature is less than 167°F (75°C).
- (d) Do a check for continuity between pins 2 and 3 of the ACMP connector.
 - 1) If you find continuity and the ACMP Temperature is less than 167°F (75°C), then do these steps:
 - a) Replace the Right ACMP, M29204. These are the tasks:
 - Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801
 - Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801
 - b) Re-connect connector DM29204B.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find continuity, then continue.

ARO ALL

- (4) Replace the Right HYDIM Card, A17, in the Right System Card File (RSCF), P84. These are the tasks:
 - Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801
 - Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Pressurize the Right Hydraulic System with the Right ACMP. This is the task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (2) Look at the MAINT INFO Page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- (3) Operate the Right ACMP until the Right ACMP Temperature on the HYD Maintenance Page becomes stable.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), after the temperature becomes stable, then you corrected the problem.
 - 1) Remove the Main Hydraulic System Power. This is the task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

865. Depressurization Valve (EDP Right) Response Problems - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASKS 864-865

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.48
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the right hydraulic system with the right engine driven pump (EDP). To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
- (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

B. Fault Isolation Procedure

- (1) Replace the right engine-driven pump (EDP).

These are the tasks:

Engine-Driven Pump (EDP) Removal, AMM TASK 29-11-05-000-801-002,

Engine-Driven Pump (EDP) Installation, AMM TASK 29-11-05-400-801-002.

- (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

866. EDP (Right) Case Drain Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10730.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASKS 865-866

D633W103-ARO

Page 298.49
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the right hydraulic system with the right engine driven pump (EDP). To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- (c) Operate the right EDP until the right EDP temperature on the hydraulic maintenance page becomes stable.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
- (e) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Do a check of the orientation of the check valve on the case drain line for the right engine-driven pump (EDP).
- (2) If the orientation of the check valve is not correct, then install the check valve correctly.
 - (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate the right EDP until the right EDP temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (e) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do this check of the hydraulic internal leakage:
 - (a) For the right hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
 - (b) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
 - 1) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 2) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - 3) Operate the right EDP until the right EDP temperature on the hydraulic maintenance page becomes stable.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASK 866

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.50
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the hydraulic internal leakage is less than 6.5 gpm, then continue.
- (4) Replace the right EDP temperature transducer, M29206.
- These are the tasks:
- Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-42-000-801,
- Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-42-400-801.
- (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- (b) Operate the right EDP until the right EDP temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (5) Replace the right engine-driven pump (EDP).
- These are the tasks:
- Engine-Driven Pump (EDP) Removal, AMM TASK 29-11-05-000-801-002,
- Engine-Driven Pump (EDP) Installation, AMM TASK 29-11-05-400-801-002.
- (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- (c) Operate the right EDP until the right EDP temperature on the hydraulic maintenance page becomes stable.
- (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (6) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.
- These are the tasks:
- Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
- Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- (b) Operate the right EDP until the right EDP temperature on the hydraulic maintenance page becomes stable.

EFFECTIVITY
ARO ALL

29-11 TASK 866

D633W103-ARO

Page 298.51
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

867. EDP (Right) Output Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10740.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the right hydraulic system with the right engine driven pump (EDP). To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (3) If the engine-driven pump (EDP) operates for more than 5 minutes without hydraulic fluid, then it is recommended that you replace the EDP.

NOTE: Operation of the EDP without hydraulic fluid for more than 5 minutes will usually cause damage to the EDP. A damaged EDP can operate satisfactorily during an operational check, but will usually fail after a short time in-service.

C. Fault Isolation Procedure

- (1) Do a check of the orientation of the check valve on the case drain line for the right engine-driven pump (EDP).
- (2) If the orientation of the check valve is not correct, then install the check valve correctly.
 - (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Look at the hydraulic maintenance page on the MFD, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804
 - (a) Pressurize the right hydraulic system with right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.

EFFECTIVITY
ARO ALL

29-11 TASKS 866-867

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.52
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) Look at the R PRIMARY PUMP PRESS indication on the hydraulic maintenance page.
- (c) If the R PRIMARY PUMP PRESS indication is difference than the left pump pressure, then do these steps:
 - 1) Replace right EDP pressure transducer, M29208.
These are the tasks:
Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-42-000-801,
Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-42-400-801.
 - 2) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the R PRIMARY PUMP PRESS indication is same as the center pump pressure, then continue.
- (4) Replace the right engine-driven pump (EDP).
These are the tasks:
Engine-Driven Pump (EDP) Removal, AMM TASK 29-11-05-000-801-002,
Engine-Driven Pump (EDP) Installation, AMM TASK 29-11-05-400-801-002.
 - (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (5) Do a check for blocking of the supply hose:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



WARNING

DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



CAUTION

IMMEDIATELY CLEAN ALL HYDRAULIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the self-sealing fitting of the supply hose from the adapter on the right EDP.
- (c) Remove the adapter from the port of the right EDP.

EFFECTIVITY
ARO ALL

29-11 TASK 867

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.53
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (d) Install the adapter to the self-sealing fitting of the supply hose.
NOTE: A container is necessary to catch the hydraulic fluid flow from the supply hose.
- (e) Tighten the adapter to 855-945 pound-inches.
- (f) If there is no hydraulic fluid drained from the supply hose, then do these steps:
 - 1) Replace the self-sealing fitting and the supply hose (AMM TASK 29-11-10-400-801).
 - 2) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (g) If there is hydraulic fluid drained from the supply hose, then continue.
- (h) Remove the adapter from the self-sealing fitting.
- (i) Install the adapter to the port on the right EDP.
- (j) Re-connect the self-sealing fitting of the supply hose to the adapter on the left EDP.
- (6) Do a check for blocking of the pressure hose 1:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



WARNING

DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



CAUTION

IMMEDIATELY CLEAN ALL HYDRAULIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the check valve of the pressure hose 1 from the adapter on the right EDP.
- (c) Manually push the check valve poppet for approximately 2 seconds at the force of 5-10 pounds.
NOTE: A container is necessary to catch the hydraulic fluid drain from the supply hose.
- (d) If the poppet does not move, is broken or there is no hydraulic fluid drained from the pressure hose, then do these steps:
 - 1) Replace the check valve (AMM TASK 29-11-10-400-801).
 - 2) If the check valve was found broken, then do these steps:
 - a) Do an inspection for broken pieces in the hydraulic line and damage to other components from the broken pieces.
 - b) Do a check of the EDP pressure filter for contamination. To check it, do this task: Filter Elements of the Engine Driven Pumps (EDPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-810.
 - 3) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.

EFFECTIVITY
ARO ALL

29-11 TASK 867

D633W103-ARO

Page 298.54
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If there is hydraulic fluid drained from the pressure hose 1, then continue.
- (f) Re-connect the check valve of the pressure hose 1 to the adapter on the right EDP.
- (7) Do a check for blocking of the pressure hose 2:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



IMMEDIATELY CLEAN ALL HYDRAULIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the check valve of the pressure hose 2 from the adapter on the right EDP.
 - (c) Remove the adapter from the port of the right EDP.
 - (d) Manually push the check valve poppet for approximately 2 seconds at the force of 5-10 pounds.
- NOTE:** A container is necessary to catch the hydraulic fluid drain from the supply hose.
- (e) If the poppet does not move, is broken or there is no hydraulic fluid drained from the pressure hose, then do these steps:
 - 1) Replace the check valve (AMM TASK 29-11-10-400-801).
 - 2) If the check valve was found broken, then do these steps:
 - a) Do an inspection for broken pieces in the hydraulic line and damage to other components from the broken pieces.
 - b) Do a check of the EDP pressure filter for contamination. To check it, do this task: Filter Elements of the Engine Driven Pumps (EDPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-810.
 - 3) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (f) If there is hydraulic fluid drained from the pressure hose 2, then continue.
 - (g) Re-connect the check valve of the pressure hose 2 to the adapter on the right EDP.
 - (8) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASK 867

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.55
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue
- (9) Do this check of the R EDP switch:
- (a) Set the right engine fire switch, S26201, to the NORM position.
 - (b) Set the R EDP switch, S2, to the ON position.
 - (c) Remove the hydraulic/RAT panel, P5 (WDM 29-11-21).
 - (d) Do a continuity check between pin 12 and pin 10 of connector on the R EDP switch, S2 (WDM 29-11-21).
 - (e) If there is continuity between pin 12 and pin 10, then do these steps:
 - 1) Replace the R EDP switch, S2 (WDM 29-11-21).
 - 2) Re-install the hydraulic/RAT panel, P5 (WDM 29-11-21).
 - 3) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (f) If there is no continuity between pin 12 and pin 10, then continue.
- (10) Do this check of the hydraulic/RAT panel:
- (a) Do a continuity check between pin 40 and pin 41 of connector DM29004B on the hydraulic/RAT panel, P5 (WDM 29-11-21).
 - (b) If there is continuity between pin 40 and pin 41, then do these steps:
 - 1) Install a new hydraulic/RAT panel, P5 (WDM 29-11-21).
 - 2) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If there is no continuity between pin 40 and pin 41, then continue.
- (11) Do this wiring check:
- (a) Disconnect connector DV29001 from the right EDP depressurization valve, V29001.

EFFECTIVITY
ARO ALL

29-11 TASK 867

D633W103-ARO

Page 298.56
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (b) Do a wiring check between these pin of connector DM29004B at the P5 panel and connector DV29001 at the depressurization valve, V29001 (WDM 29-11-21):

DM29004B	DV29001
pin 40	pin 3

- (c) Remove the right engine fire switch, S26201 from the aft aisle stand panel, P8 (WDM 29-11-21).

- (d) Do a wiring check between these pin of connector DM29004B at the P5 panel and connector DS26201 at the P8 panel (WDM 29-11-21):

DM29004B	DS26201
pin 40	pin 28

- (e) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-connect connector DV29001.
- 3) Re-install the right engine fire switch, S26201.
- 4) Re-install the hydraulic/RAT panel, P5.
- 5) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.
- 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

- (f) If you find a problem with the wiring, then continue.

- (g) Re-connect connector DV29001.

- (h) Re-install the hydraulic/RAT panel, P5.

- (12) Install a new right engine fire switch, S26201 (WDM 29-11-21).

- (a) Pressurize the right hydraulic system with the right EDP. To pressurize it, do this task: Left or Right Hydraulic System Pressurization with an Engine-Driven Pump (EDP), AMM TASK 29-11-00-860-804.

- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:

- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

868. Supply Shutoff Valve (EDP Right) Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10750.

EFFECTIVITY
ARO ALL

29-11 TASKS 867-868

D633W103-ARO

Page 298.57
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Make sure that this circuit breaker is closed:

Overhead Circuit Breaker Panel, P11

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	20	C29602	RIGHT EDP SUPPLY SHUTOFF VALVE

- (b) Make sure that the right engine driven pump (EDP) does not operate.
- (c) Pull and hold the right engine fire switch, S26201, for 30 seconds while you push the manual override switch.

NOTE: The manual override switch is on the P8 aisle stand panel.
- (d) After 1.5 minutes, if the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
- (e) After 1.5 minutes, if the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right engine-driven pump (EDP) supply shutoff valve.

These are the tasks:

Engine-Driven Pump (EDP) Supply Shutoff Valve Removal, AMM TASK 29-11-30-000-801,
Engine-Driven Pump (EDP) Supply Shutoff Valve Installation, AMM TASK 29-11-30-400-801.

- (a) Look at the hydraulic synoptic page on the MFD. To see this page, do this task: Showing a System Synoptic Page, AMM TASK 31-61-00-800-816.
- (b) Make sure that the right EDP does not operate.
- (c) If the valve shows OPEN on the hydraulic synoptic page, then do these steps:
 - 1) Pull and hold the right engine fire switch, s26210, in the closed position for 30 seconds.
 - 2) If the valve shows CLOSED on the hydraulic synoptic page and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 3) If the valve shows OPEN on the hydraulic synoptic page and the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (d) If the valve shows CLOSED on the hydraulic synoptic page, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Look at the hydraulic synoptic page on the MFD. To see this page, do this task: Showing a System Synoptic Page, AMM TASK 31-61-00-800-816.
- (b) Make sure that the right EDP does not operate.
- (c) If the valve shows OPEN on the hydraulic synoptic page, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASK 868

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.58
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Pull and hold the right engine fire handle in the closed position for 30 seconds.
- 2) If the valve shows CLOSED on the hydraulic synoptic page and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 3) If the valve shows OPEN on the hydraulic synoptic page and the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (d) If the valve shows CLOSED on the hydraulic synoptic page, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DV29202 from the right EDP supply shutoff valve, V29202.
 - (c) Do a wiring check between these pins of connector XA17 in the RSCF, P84, and connector DV29202 at the right EDP supply shutoff valve, V29202 (SSM 29-11-21):

XA17	DV29202
pin 44	pin 5
pin 45	pin 4

- (d) If you find a problem with the wiring, do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DV29202.
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Look at the hydraulic synoptic page on the MFD. To see this page, do this task: Showing a System Synoptic Page, AMM TASK 31-61-00-800-816.
 - 5) Make sure that the right EDP does not operate.
 - 6) If the valve shows OPEN on the hydraulic synoptic page, then do these steps:
 - a) Pull and hold the right engine fire handle in the closed position for 30 seconds.
 - b) If the valve shows CLOSED on the hydraulic synoptic page and the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (4) Put the L(R) GEN CTRL switches to the OFF position then to the ON position to reset the generator system.

NOTE: The OFF light on the GEN CTRL switch will come on when the switch is out (or OFF) and will turn off when the GEN CTRL switch is pushed in (or ON), this will reset the Gen Ctrl Relay.

————— **END OF TASK** —————

869. Landing Gear Auto-Off B Relay Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10680.

EFFECTIVITY
ARO ALL

29-11 TASKS 868-869

D633W103-ARO

Page 298.59
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-off Relay B.
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the landing gear auto-off B relay, K32016 in the P310 standby power management panel (SSM 32-31-11).
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-off Relay B.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-off Relay B.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Remove the landing gear auto-off B relay, K32016 from the P310 right power management panel (SSM 32-31-11).
 - (c) Do a wiring check between these pins of connector DK32016 at the P310 right power management panel and connector XA17 at the RSCF, P84 (SSM 32-31-11):

DK29016		XA17
pin B2	.....	pin 28
pin X2	.....	pin 33

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the landing gear auto-off B relay.

EFFECTIVITY
ARO ALL

29-11 TASK 869

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.60
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 3) Re-install the HYDIM-R card, A17, in the RSCF, P84. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Landing Gear Auto-off B Relay.
- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

870. Temperature Transducer (EDP Right) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10830.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right engine-driven pump (EDP) temperature transducer, M29206.

These are the tasks:

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-42-000-801,

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-42-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29206 from the right EDP temperature transducer, M29206.
 - (c) Do a wiring check between these pins of connector DM29206 at the right EDP temperature transducer, M29206 and connector XA17 at the RSCF, P84 (SSM 29-11-21):

EFFECTIVITY
ARO ALL

29-11 TASKS 869-870

D633W103-ARO

Page 298.61
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

DM29206

pin 1 pin 65
pin 2 pin 67

XA17

- (d) Do a continuity check between pin 3 of connector DM29206 at the right EDP temperature transducer, M29206, and structure ground (SSM 29-11-21).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29206.
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

871. Temperature Transducer (ACMP Right) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10840.

B. General

- (1) The ACMP has a temperature switch that is a part of the pump. It closes at 105C and reopens when the pump temperature decreases to 75C.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) The ACMP temperature switch provides an overheat indication that is independent of the ACMP temperature transducer.

NOTE: Some ACMP faults can stop the fluid flow from the case drain and cause a pump overheat that is not detected by the ACMP case drain temperature transducer.

- (a) The ACMP temperature switch is connected in parallel with the ACMP temperature transducer. When it closes, the switch circuit provides a signal to the HYDIM card that is equivalent to the transducer signal at 111.6C.
- (b) The valid signal for the ACMP temperature transducer is 1 to 40 ma instead of the typical range of 1 to 23 ma. This allows the total signal from the switch circuit and the transducer to be detected as an overheat condition instead of as a transducer fault.
- (c) An ACMP temperature transducer fault that causes the temperature signal to be larger than normal (drifting high) can be detected as an overheat condition instead of as a transducer fault.
- (d) An ACMP temperature switch fault that causes the temperature signal to be larger than normal (short circuit) can be detected as an ACMP temperature transducer fault instead of as an overheat condition.

ARO ALL

C. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 870-871

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.62
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

D. Fault Isolation Procedure

- (1) Replace the right alternating current motor pump (ACMP) temperature transducer, M29210.

These are the tasks:

Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-40-000-801,

Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-40-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) Do this check of the wiring:

- (a) Make sure connector DM29204B is correctly installed on the ACMP R temperature switch M29204.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 2) If the MAT shows ACTIVE for the maintenance message, then continue.
- (b) Disconnect connector DM29204B from the ACMP R temperature switch M29204.
- (c) Measure the resistance between pin 3 of connector DM29204B and structure ground.

NOTE: This checks the resistor for the temperature switch.

- 1) If the resistance is not 663-733 ohms, then do these steps:
 - a) Repair the wiring.
 - b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - c) Re-connect connector DM29204B.
 - 2) If the resistance is 663-733 ohms, then continue.
- (d) Re-connect connector DM29204B.

ARO ALL

- (3) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29210 from the Right ACMP temperature transducer, M29210.

EFFECTIVITY
ARO ALL

29-11 TASK 871

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.63
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) Do a wiring check between these pins of connector DM29210 at the Right ACMP temperature transducer, M29210, and connector XA17 at the RSCF, P84 (WDM 29-11-22):

DM29210	XA17
pin 1	pin 69
pin 2	pin 68

- (d) Do a continuity check between pin 3 of connector DM29210 at the Right ACMP temperature transducer, M29210, and structure ground. (WDM 29-11-22).
- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29210.
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

872. Pressure Transducer (EDP Right) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10850.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right engine-driven pump (EDP) pressure transducer, M29208.

These are the tasks:

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-42-000-801,

Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-42-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 871-872

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.64
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29208 from the right EDP pressure transducer, M29208.
 - (c) Do a wiring check between these pins of connector DM29208 at the right EDP pressure transducer, M29208, and connector XA17 at the RSCF, P84 (SSM 29-11-21):

DM29208	XA17
pin 2	pin 62
pin 3	pin 63

- (d) Do a continuity check between pin 1 of connector DM29208 at the right EDP pressure transducer, M29208, and structure ground (SSM 29-11-21).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29208.
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

873. Pressure Transducer (ACMP Right) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10860.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right alternating current motor pump (ACMP) pressure transducer, M29209.

These are the tasks:

Left and Right System Alternating Current Motor Pump (ACMP) Pressure Transducer Removal, AMM TASK 29-31-02-000-801,

Left and Right System Alternating Current Motor Pump (ACMP) Pressure Transducer Installation, AMM TASK 29-31-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASKS 872-873

D633W103-ARO

Page 298.65
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29209 from the right ACMP pressure transducer, M29209.
 - (c) Do a wiring check between these pins of connector DM29209 at the right ACMP pressure transducer, M29209, and connector XA17 at the RSCF, P84 (SSM 29-11-22):

DM29209	XA17
pin 2	pin 66
pin 3	pin 64
 - (d) Do a continuity check between pin 1 of connector DM29209 at the right ACMP pressure transducer, M29209, and structure ground (SSM 29-11-22).
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29209.
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

874. Pressure Transducer (System Right) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10870.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right hydraulic system pressure transducer, M29201.

These are the tasks:

Hydraulic System Pressure Transducer Removal, AMM TASK 29-31-01-000-801,
Hydraulic System Pressure Transducer Installation, AMM TASK 29-31-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

EFFECTIVITY
ARO ALL

29-11 TASKS 873-874

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.66
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
- (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29201 from the right system hydraulic pressure transducer, M29201.
 - (c) Do a wiring check between these pins of connector DM29201 at the right system hydraulic pressure transducer, M29201, and connector XA17 at the RSCF, P84 (SSM 29-11-22):

DM29201	XA17
pin 2	pin 61
pin 3	pin 59

- (d) Do a continuity check between pin 1 of connector DM29201 at the right system hydraulic pressure transducer, M29201, and structure ground (SSM 29-11-22).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29201.
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

875. Pressure Transducer (ADP 2) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10960.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the air-driven pump (ADP) 2 pressure transducer, M29316.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASKS 874-875

D633W103-ARO

Page 298.67
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal,
AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation,
AMM TASK 29-11-43-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29316 from the ADP 2 pressure transducer, M29316.
 - (c) Do a wiring check between these pins of connector DM29316 at the ADP 2 pressure transducer, M29316, and connector XA4 at the LSCF, P85 (SSM 29-11-34):

DM29316	XA4
pin 2	pin 62
pin 3	pin 63

- (d) Do a continuity check between pin 1 of connector DM29316 at the ADP 2 pressure transducer, M29316, and structure ground (SSM 29-11-34).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29316.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

876. Quantity Transmitter (Reservoir Right) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11000.

EFFECTIVITY
ARO ALL

29-11 TASKS 875-876

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.68
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right reservoir quantity transmitter, M29205.

These are the tasks:

Reservoir Quantity Transmitter Removal, AMM TASK 29-33-02-000-801,

Reservoir Quantity Transmitter Installation, AMM TASK 29-33-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29205 from the right reservoir quantity transmitter, M29205.
 - (c) Do a wiring check between these pins of connector DM29205 at the right reservoir quantity transmitter, M29205, and connector XA17 at the RSCF, P84 (SSM 29-11-23):

DM29205	XA17
pin 1	pin 90
pin 3	pin 82
pin 5	pin 84

- (d) Do a continuity check between pin 4 of connector DM29205 at the right reservoir quantity transmitter, M29205, and structure ground (SSM 29-11-23).
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29205.
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
ARO ALL

29-11 TASK 876

D633W103-ARO

Page 298.69
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

877. Air-Driven Pump 2 Speed Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11110.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: A failure of the ADP C2 can occur because of freezing. Therefore, the subsequent testing of the ADP C2 will show no fault if the ice has melted. If this is the problem, a check of the ADP C2 heater should be done.

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If one or more maintenance messages show on the ground test display, then do these steps:
- 1) Find each message in the Maintenance Message Index.
 - 2) Do the specified fault isolation task.
- (b) If no maintenance message shows on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the air-driven pump (ADP) 2 modulating shutoff valve (MSOV), V29304:

- (a) Set the power switch for the HYDIM-CL card, to the OFF position.

NOTE: Use the power control decal on the LSCF, P85, to find the appropriate switch.

- (b) Disconnect connector DV29304 from the MSOV, V29304.

- (c) Measure the resistance between pins 1 and 2 of connector DV29304 on the MSOV, V29304 (WDM 29-11-39).

- (d) If the resistance is less than 30 ohms, then do these steps:

- 1) Replace the MSOV, V29304.

These are the tasks:

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.

- 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- 3) Set the power switch for the HYDIM-CL card, to the ON position.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASK 877

D633W103-ARO

Page 298.70
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (e) If the resistance is greater than 30 ohms, then continue.
- (2) Do this check of the wiring:
- (a) Disconnect connector DM29321B from the ADP 2 LSCU, M29321.
- (b) Do a wiring check between these pins of connector DM29321B, at the LSCU, M29321, and connector DV29304, at the MSOV, V29304 (WDM 29-11-39):
- | DM29321B | DV29304 |
|------------------|----------------|
| pin 14 | pin 1 |
- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connectors DV29304 and DM29321B.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE:** Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Re-connect connectors DV29304 and DM29321B.
- (3) Do this check of the wiring:
- (a) Remove the HYDIM-CL card, A4 in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29321A from the ADP 2 LSCU, M29321.
- (c) Do a wiring check between these pins of connector XA4 in the LSCF, P85 and connector DM29321A for the ADP 2 LSCU, M29321 (WDM 29-11-39):
- | XA4 | DM29321A |
|------------------|-----------------|
| pin 11 | pin 8 |
| pin 12 | pin 8 |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 3) Re-connect connector DM29321A.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE:** Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 877

D633W103-ARO

Page 298.71
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

- (g) Re-connect connector DM29321A.
- (4) Do this check of the wiring:
 - (a) Disconnect connector DM29321B from the ADP 2 LSCU, M29321.
 - (b) Disconnect connector DM29314B from the Turbine Gearbox Assembly, M29314.
 - (c) Do a wiring check between these pins of connector DM29321B at the ADP 2 LSCU, M29321 and connector DM29314B at the Turbine Gearbox Assembly, M29314 (SSM 29-11-39):

DM29321B	DM29314B
6	1
7	2
8	3
9	4

- (d) Disconnect connector DM29314A from the Turbine Gearbox Assembly, M29314.
- (e) Do a wiring check between these pins of connector DM29321B at the ADP 2 LSCU, M29321 and connector DM29314A at the Turbine Gearbox Assembly, M29314 (SSM 29-11-39):

DM29321B	DM29314A
1	1
2	2
3	4
4	5
10	8
11	9
12	11
13	12

- (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29314A.
 - 3) Re-connect connector DM29314B.
 - 4) Re-connect connector DM29321B.
 - 5) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 6) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (g) If the maintenance message shows on the ground test display, then continue.
- (5) Do this check of the air-driven pump (ADP) 2 modulating shutoff valve (MSOV), V29304:
 - (a) Pressurize the center hydraulic system with the ADP C2. Do this task: Center Hydraulic System Pressurization with an Air-Driven Pump (ADP), AMM TASK 29-11-00-860-805.
 - (b) Put the ADP C2 selector switch on the overhead panel to the ON position.
 - (c) Make sure the visual indicator on ADP C2 MSOV shows the MSOV is fully open.

EFFECTIVITY
ARO ALL

29-11 TASK 877

D633W103-ARO

Page 298.72
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (d) If the ADP C2 MSOV does not show fully open, do these steps.
- 1) Replace the MSOV, V29304. Do these tasks:
 - Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801
 - Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (6) Do this check of the Air-Driven Pump (ADP) C2 heater:
- (a) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - (b) If the current was less than 1.5 amps on the ground wire and the RAT GEN HEAT status message is shown, do this task: RAT Generator Heater Problems - Fault Isolation, 29-21 TASK 809.
 - (c) If the current was less than 1.5 amps on the ground wire and the RAT GEN HEAT status message is not shown, do a check of the wiring.
 - 1) Disconnect the connector, DM29011, from the ADP C2 heater (WDM 29-11-40).
 - 2) Do a wiring check between these pins of connector D21034P at the P210 panel and the connector DM29011 at the ADP C2 heater (WDM 29-11-40):

D21034P	DM29011
pin 28	pin 2
 - 3) If you find a problem with the wiring then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector DM29011 at the ADP C2 heater.
 - c) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - d) If the current in the ground wire was more than 1.5 amps, you corrected the fault.
- (d) If you do not find a problem with the wiring then do a check of the ADP C2 heater:
- 1) Disconnect connector DM29011 from ADP 2 Heater, M29011.
 - 2) Do a continuity check between pins 6 and 1, pins 7 and 4, and pins 5 and 2 of the connector on the ADP 2 Heater, M29011.
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Replace the ADP 2 Heater, M29011.These are the tasks:
Air-Driven Pump (ADP) Heater Removal, AMM TASK 29-11-18-000-801,
Air-Driven Pump (ADP) Heater Installation, AMM TASK 29-11-18-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 877

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.73
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- b) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - d) If the maintenance message shows on the ground test display, then continue.
- 4) If you do not find a problem with the wiring, then continue.
- 5) Replace the ADP C2 heater, M29011.
- a) These are the tasks:
Air-Driven Pump (ADP) Heater Removal, AMM TASK 29-11-18-000-801,
Air-Driven Pump (ADP) Heater Installation, AMM TASK 29-11-18-400-801.
 - b) Re-connect the connector DM29011.
 - c) Do this task: Air-Driven Pump (ADP) C1 and C2 Heater - Functional Test, AMM TASK 29-11-00-700-801.
 - d) If the current in the ground wire was more than 1.5 amps, you corrected the fault.
 - e) Re-connect the connector DM29011 at the ADP C2 heater.
 - f) If the current on the ground wire is less than 1.5 amps, then continue.
- (7) If the ADP 2 modulating and shutoff valve, V29304, was not already replaced as part of step 5, then do these steps:
- These are the tasks:
- Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (8) Replace the air-driven pump (ADP) 2 turbine gearbox assembly (TGA), M29314.
- These are the tasks:
- Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,
Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
ARO ALL

29-11 TASK 877

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.74
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

878. HYDIM (Right) No Output on HYDIM Data Out-17 ARINC 429 Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-18892.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Cycle the power supply to the HYDIM-R card, A17, in the right systems card file (RSCF), P84. Do the following steps:
 - (a) Set the power switch for the HYDIM card to OFF position.

NOTE: Use the power control decal on the front of the cardfile to find the appropriate switch.
 - (b) Wait 10 seconds.
 - (c) Set the power switch for the HYDIM card to ON position.

NOTE: Use the power control decal on the front of the cardfile to find the appropriate switch.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the power supply unit (PSU) linear monitor card-2, A18 in the right systems card file (RSCF), P84.

These are the tasks:

Card File Power Supply (CFPS) Installation, AMM TASK 31-09-01-400-801,

Card File Power Supply (CFPS) Removal, AMM TASK 31-09-01-000-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 878

D633W103-ARO

Page 298.75
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (4) Replace the left AIRINC Signal Gateway (ASG) card, A12 in the right systems card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Replace the right AIRINC Signal Gateway (ASG) card, A15 in the right systems card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (6) Replace the right system cardfile chassis, P84 (WDM 29-11-21).
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

END OF TASK

879. ADP 2 Status A,B,C Signals Response Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11030.

B. Initial Evaluation

NOTE: The order of the troubleshooting steps on this task are different from the steps on the MAT ground test.

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the power wiring:
- (a) Disconnect connector DM29321A from the air-driven pump (ADP) 2 logic speed control unit (LSCU).
- (b) Do a check for 28V DC from pin 6 of connector DM29321A to structure ground.
- (c) If there is not 28V DC at pin 6 of connector DM29321A, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASKS 878-879

D633W103-ARO



777-200/300
FAULT ISOLATION MANUAL

- 1) Repair the wiring between these pins of connector DM29321A in the ADP 2 LSCU, M29321, and the load terminal of circuit breaker C29606 (SSM 29-11-39):

DM29321A	C29606
pin 6	pin 2

- 2) Re-connect connector DM29321A.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 4) If the maintenance message does not show on the ground test display, you corrected the fault.

(d) If there is 28V DC at pin 6 of connector DM29321A, then continue.

- (2) Do this check of the wiring from the ADP 2 LSCU to the HYDIM-CL:

- (a) Remove the center-right hydraulic interface module (HYDIM-CL) card, A4, in the left system card file (LSCF), P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Do a wiring check between these pins of connector DM29321A at the ADP 2 LSCU, M29321, and connector XA4 at the LSCF, P85 (SSM 29-11-39):

DM29321A	XA4
pin 11	pin 29
pin 12	pin 22
pin 13	pin 28

- (c) If you find a problem with the wiring, then do these steps:

- 1) Repair the wiring.
- 2) Re-connect connector DM29321A.
- 3) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 4) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 5) If the maintenance message does not show on the ground test display, you corrected the fault.

(d) If you do not find a problem with the wiring, then continue.

- (e) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (3) Replace the ADP 2 modulating and shutoff valve, V29304.

These are the tasks:

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,

EFFECTIVITY
ARO ALL

29-11 TASK 879

D633W103-ARO

Page 298.77
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM
TASK 29-11-14-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

- (4) Replace the ADP 2 LSCU, M29321.

These are the tasks:

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Removal, AMM
TASK 29-11-15-000-801,

Air-Driven Pump (ADP) Logic Speed Control Unit (LSCU) Installation, AMM
TASK 29-11-15-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

- (5) Replace the HYDIM-CL card, A4, in the LSCF, P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance message shows on the ground test display, then continue.

- (6) Replace the air-driven pump (ADP) 2 turbine gearbox assembly (TGA), M29314.

These are the tasks:

Turbine Gearbox Assembly (TGA) Removal, AMM TASK 29-11-12-000-801,

Turbine Gearbox Assembly (TGA) Installation, AMM TASK 29-11-12-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air-Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASK 879

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.78
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

880. Demand Pump (C1) Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43110.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
- (a) Set the C1 DEMAND selector first to AUTO, then to ON.
- (b) If the MAT shows ACTIVE for the maintenance message while the selector is in the AUTO or ON position, then do the Fault Isolation Procedure below.
- (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in the AUTO and ON positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the C1 demand selector, S7, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-38).
- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the C1 DEMAND selector first to AUTO, then to ON.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the AUTO or ON position, then continue.
- (2) Do this check of the wiring from the C1 demand selector to the left overhead panel cardfile (OPCF-L):
- (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-38).
- (b) Disconnect connector M29004DS7 from the C1 demand selector.
- (c) Disconnect connector DM23117H from the OPCF-L, M23117.
- (d) Do a wiring check between these pins of connector M29004DS7 at pilot's overhead panel, P5, and connector DM23117H at the maintenance panel, P61 (WDM 29-11-38):

M29004DS7

pin H

pin K

pin J

pin L

DM23117H

pin A15

pin A16

pin A14

pin A13

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
- 2) Re-connect connectors M29004DS7 and DM23117H.

EFFECTIVITY
ARO ALL

29-11 TASKS 879-880

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.79
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the C1 DEMAND selector first to AUTO, then to OFF.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connector M29004DS7.
 - (h) Re-install the hydraulic/ram air turbine module, M29004.
- (3) Replace the OPCF-L chassis, M23117.
- These are the tasks:
- Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the C1 DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.

————— END OF TASK —————

881. Demand Pump (C2) Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43120.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the C2 DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in the AUTO or ON position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in the AUTO and ON positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the C2 demand selector, S8, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-39).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the C2 DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the AUTO or ON position, then continue.

EFFECTIVITY
ARO ALL

29-11 TASKS 880-881

D633W103-ARO

Page 298.80
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (2) Do this check of the wiring from the C2 demand selector to the right overhead panel cardfile (OPCF-R:
- (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-39).
 - (b) Disconnect connector M29004DS8 from the C2 demand selector.
 - (c) Disconnect connector DM23217H from the OPCF-R, M23217.
 - (d) Do a wiring check between these pins of connector M29004DS8 at pilot's overhead panel, P5, and connector DM23217H at the maintenance panel, P61 (WDM 29-11-39):

M29004DS8	DM23217H
pin H	pin B17
pin J	pin B16
pin K	pin B18
pin L	pin B15

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M29004DS8 and DM23217H.
 - 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the C2 DEMAND selector first to AUTO, then to OFF.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connector M29004DS8.
 - (h) Re-install the hydraulic/ram air turbine module, M29004
- (3) Replace the OPCF-R chassis, M23217.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the L DEMAND selector first to AUTO, then to ON.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.

————— **END OF TASK** —————

882. Primary Pump (C1) Switch Problems - Fault Isolation

A. **Maintenance Messages**

- (1) This task is for maintenance message: 23-43130.

EFFECTIVITY
ARO ALL

29-11 TASKS 881-882

D633W103-ARO

Page 298.81
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the C1 PRIMARY switch to ON.
 - (b) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the ON position, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the C1 primary switch, S3, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-31).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the C1 PRIMARY switch first to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or ON position, then continue.
- (2) Do this check of the wiring from the C1 primary switch to the left overhead panel cardfile (OPCF-L):
 - (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-31).
 - (b) Disconnect connector M29004DS3 from the C1 primary switch.
 - (c) Disconnect connector DM23117H from the OPCF-L, M23117.
 - (d) Do a wiring check between these pins of connector M29004DS3 at pilot's overhead panel, P5, and connector DM23117H at the maintenance panel, P61 (WDM 29-11-31):

M29004DS3

DM23117H

pin 4	.....	pin A5
pin 5	.....	pin A6
pin 6	.....	pin A7

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M29004DS3 and DM23117H.
 - 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the C1 PRIMARY switch to ON.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON position, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M29004DS3.
- (h) Re-install the hydraulic/ram air turbine module, M29004

EFFECTIVITY
ARO ALL

29-11 TASK 882

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.82
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (3) Replace the OPCF-L chassis, M23117.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
- 1) Set the C1 PRIMARY switch to ON.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON position, you corrected the fault.

————— **END OF TASK** —————

883. Primary Pump (C2) Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43140.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
- (a) Set the C2 PRIMARY switch to ON.
 - (b) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the ON position, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the C2 primary switch, S4, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-32).
- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the C2 PRIMARY switch first to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or ON position, then continue.
- (2) Do this check of the wiring from the C2 primary switch to the right overhead panel cardfile (OPCF-R):
- (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-32).
 - (b) Disconnect connector M29004DS4 from the C2 primary switch.
 - (c) Disconnect connector DM23217H from the OPCF-R, M23217.
 - (d) Do a wiring check between these pins of connector M29004DS4 at pilot's overhead panel, P5, and connector DM23217H at the maintenance panel, P61 (WDM 29-11-32):

EFFECTIVITY
ARO ALL

29-11 TASKS 882-883

D633W103-ARO

Page 298.83
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

M29004DS4

pin 4
pin 5
pin 6

DM23217H

pin A5
pin A6
pin A7

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M29004DS4 and DM23217H.
 - 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the C2 PRIMARY switch to ON.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON position, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M29004DS4.
- (h) Re-install the hydraulic/ram air turbine module, M29004
- (3) Replace the OPCF-R chassis, M23217.
These are the tasks:
Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the C2 PRIMARY switch to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON position, you corrected the fault.

END OF TASK

884. Primary Pump (Left) Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43360.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the L PRIMARY switch to ON.
 - (b) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the ON position, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 883-884

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.84
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Replace the L primary switch, S2, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-11).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the L PRIMARY switch first to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or ON position, then continue.
- (2) Do this check of the wiring from the L primary switch to the left overhead panel cardfile (OPCF-L):
 - (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-11).
 - (b) Disconnect connector M29004DS3 from the L primary switch.
 - (c) Disconnect connector DM23117H from the OPCF-L, M23117.
 - (d) Do a wiring check between these pins of connector M29004DS2 at pilot's overhead panel, P5, and connector DM23117H at the maintenance panel, P61 (WDM 29-11-11):

M29004DS2

pin 4	.....	pin A1
pin 5	.....	pin A2
pin 6	.....	pin A3

DM23117H

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M29004DS2 and DM23117H.
 - 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the L PRIMARY switch to ON.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON position, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connector M29004DS2.
 - (h) Re-install the hydraulic/ram air turbine module, M29004
- (3) Replace the OPCF-L chassis, M23117.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the C1 PRIMARY switch to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON position, you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
ARO ALL

29-11 TASK 884

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.85
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

885. Demand Pump (Right) Selector Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43710.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the R DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows ACTIVE for the maintenance message while the selector is in the AUTO or ON position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the selector is in the AUTO and ON positions, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the R demand selector, S9, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-22).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the R DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the selector is in the AUTO or ON position, then continue.
- (2) Do this check of the wiring from the R demand selector to the left overhead panel cardfile (OPCF-L):
 - (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-22).
 - (b) Disconnect connector M29004DS9 from the R demand selector.
 - (c) Disconnect connector DM23117H from the OPCF-L, M23117.
 - (d) Do a wiring check between these pins of connector M29004DS9 at pilot's overhead panel, P5, and connector DM23117H at the maintenance panel, P61 (WDM 29-11-22):

M29004DS9

pin G	.....	pin A19
pin H	.....	pin A18
pin J	.....	pin A17
pin K	.....	pin A20

DM23117H

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M29004DS9 and DM23117H.
 - 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the R DEMAND selector first to AUTO, then to OFF.

EFFECTIVITY
ARO ALL

29-11 TASK 885

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.86
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M29004DS9.
- (h) Re-install the hydraulic/ram air turbine module, M29004
- (3) Replace the OPCF-L chassis, M23117.
These are the tasks:
Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the L DEMAND selector first to AUTO, then to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the selector is in the AUTO and ON positions, you corrected the fault.

— END OF TASK —

886. Primary Pump (Right) Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43720.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:
 - (a) Set the R PRIMARY switch to ON.
 - (b) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON position, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in the ON position, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the R primary switch, S5, on the hydraulic/ram air turbine module, M29004 (WDM 29-11-21).
 - (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the R PRIMARY switch first to ON.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON positions, you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the AUTO or ON position, then continue.
- (2) Do this check of the wiring from the R primary switch to the right overhead panel cardfile (OPCF-R):
 - (a) Remove the hydraulic/ram air turbine module, M29004 but do not disconnect its electrical connectors (WDM 29-11-21).
 - (b) Disconnect connector M29004DS5 from the R primary switch.

EFFECTIVITY
ARO ALL

29-11 TASKS 885-886

D633W103-ARO

Page 298.87
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) Disconnect connector DM23217H from the OPCF-R, M23217.
- (d) Do a wiring check between these pins of connector M29004DS5 at pilot's overhead panel, P5, and connector DM23217H at the maintenance panel, P61 (WDM 29-11-21):

M29004DS5	DM23217H
pin 4	pin A9
pin 5	pin A10
pin 6	pin A11

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors M29004DS5 and DM23217H.
 - 3) Re-install the hydraulic/ram air turbine module, M29004.
 - 4) Monitor the maintenance message on the MAT while you do these steps:
 - a) Set the R PRIMARY switch to ON.
 - 5) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON position, you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - (g) Re-connect connector M29004DS5.
 - (h) Re-install the hydraulic/ram air turbine module, M29004
- (3) Replace the OPCF-R chassis, M23217.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,
Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:
 - 1) Set the R PRIMARY switch to ON.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON position, you corrected the fault.

————— **END OF TASK** —————

887. Reservoir (center) Fluid Quantity Input Problems - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 886-887

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.88
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Fault Isolation Procedure

- (1) Look at the maintenance page on the MFD. To show this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (a) Look at the fluid quantity indication on the hydraulic system maintenance page.
 - (b) If the fluid quantity indication is between 0.75 and 1.20, then do these steps:
 - 1) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the fluid quantity indication is between 0.75 and 1.20, then continue.
- (2) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (a) If the maintenance messages related to the left ASG in left cardfile and right ASG in right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the maintenance messages related to the left ASG in right cardfile and right ASG in left cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance messages specified above do not show in the Existing Faults, then continue.

EFFECTIVITY
ARO ALL

29-11 TASK 887

D633W103-ARO

Page 298.89
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (3) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

888. Air Driven Pump 1 Air Not Available Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10400.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT. Look for these maintenance message or combination of messages:
 - (a) 36-18801
 - (b) 36-18841 and 31-18804
 - (c) 36-18862 and 31-18802
 - (d) 36-19414 and 31-18802
 - (e) If the MAT shows ACTIVE or LATCHED for one or combination of the maintenance messages specified above, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message 29-10400 does not show on the ground test display, you corrected the fault.
 - (f) If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (2) Replace the left air supply cabin pressure controller.

These are the tasks:

ASCPC Removal, AMM TASK 36-11-20-000-801,

ASCPC Installation, AMM TASK 36-11-20-400-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 887-888

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.90
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

889. Air Driven Pump 2 Air Not Available Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10410.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT. Look for these maintenance message or combination of messages:
 - (a) 36-18802
 - (b) 36-18862 and 31-18801
 - (c) 36-18841 and 31-18803
 - (d) 36-19413 and 31-18803
 - (e) If the MAT shows ACTIVE or LATCHED for one or combination of the maintenance messages specified above, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message 29-10410 does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 888-889

D633W103-ARO

Page 298.91
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (f) If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (2) Replace the right air supply cabin pressure controller.
- These are the tasks:
- ASCPC Removal, AMM TASK 36-11-20-000-801,
ASCPC Installation, AMM TASK 36-11-20-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
- These are the tasks:
- Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.
- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

890. ELCU (Left ACMP) Sensed Position and Commanded Position Do Not Agree - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-12000.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:

NOTE: This fault can be caused by a power interruption of more than 10 seconds (right main DC bus/right AC section bus), or by the ELCU tripped due anti-cycling or overcurrent protection.

NOTE: Defective splice resistor R30440 can cause the maintenance message 29-12000 to show on the MAT.

- (a) Pressurize the left hydraulic system with the left alternating current motor pump (ACMP). To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.

EFFECTIVITY
ARO ALL

29-11 TASKS 889-890

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.92
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (a) If the maintenance messages related to the right electrical load management system (ELMS) show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for maintenance message 29-12000 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12000 after 20 seconds, then continue.
 - (b) Check for 115 VAC from pin A2 of the circuit breaker C24306 to the structure ground (WDM 24-51-24).
 - 1) If there is not 115 VAC at pin A2 of the circuit breaker C24306, then do these steps:
 - a) Replace these circuit breakers:

Right Power Panel, P200

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
ARO 001-004			
B	2	C24306	R MAIN AC SECT 1 BUS DISTR P210
ARO 006-999			
C	6	C24306	R MAIN AC SECT 1 BUS DISTR P210

ARO ALL

- <1> If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
- <a> Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808
- <2> If the MAT shows ACTIVE for the maintenance message, then continue.
- <a> If there is 115 VAC at pin A2 of circuit breaker C24306, then continue.
- (2) To check the wiring and resistance of resistor R30440, do these steps:
 - (a) Disconnect connector D21003 from the right Power Management Panel P210.
 - (b) Disconnect connector DM24508C from the SIU 1, M24508. Signal Interface Unit - Removal, AMM TASK 24-09-00-000-814-002

EFFECTIVITY
ARO ALL

29-11 TASK 890

D633W103-ARO

Page 298.93
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) Check for 18K Ohm resistance between pins of connector D21003 at the right P210 and connector DM24508C at the SIU 1 (WDM 24-51-24 and WDM 29-11-12).

D21003	DM24508C	
A	114	18K

- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM24508C to the SIU 1, M24508. Do this task: Signal Interface Unit - Installation, AMM TASK 24-09-00-400-810-002
 - 3) Re-connect connector D21003 to the right Power Management Panel P210.
- (3) Pressurize the left hydraulic system with the left alternating current motor pump (ACMP). To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (a) If the MAT shows NOT ACTIVE for the maintenance message 29-12000 after 20 seconds, you corrected the fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message 29-12000 after 20 seconds, then continue.
- (4) If the maintenance messages related to the left ASG in right cardfile and right ASG in left cardfile show in Existing Faults, then do these steps:
- (a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - (b) Do the specified task for the maintenance message.
 - (c) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (d) If the MAT shows NOT ACTIVE for maintenance message 29-12000 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (e) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12000 after 20 seconds, then continue.
 - 1) If the maintenance messages related to the left ASG in right cardfile and right ASG in left cardfile show in Existing Faults, then do these steps:
 - a) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - b) Do the specified task for the maintenance message.
 - c) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - d) If the MAT shows NOT ACTIVE for maintenance message 29-12000 after 20 seconds, you corrected the fault. Do this step to complete the task:

EFFECTIVITY
ARO ALL

29-11 TASK 890

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.94
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- <1> Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808 Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- e) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12000 after 20 seconds, then continue.
- <1> If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (5) Do this check of the wiring:
- (a) Disconnect connector DM293104A from the left ACMP, M29104.
 - (b) Disconnect connector DM29103A from the left ACMP electrical load control unit (ELCU), M29103.
 - (c) Do a wiring check between these pins of connector DM29103A at the P200 right power panel and connector DM29104A at the left ACMP (WDM 29-11-12):
- | DM29103A | | DM29104A |
|-----------------|-------|-----------------|
| pin A2 | ..... | pin A |
| pin B2 | ..... | pin B |
| pin C2 | ..... | pin C |
- (d) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connectors DM29103A and DM29104A.
 - 3) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM29103A.
- (6) Replace the left ACMP, M29104.
- These are the tasks:
- Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801,
- Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801.
- (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASK 890

D633W103-ARO

Page 298.95
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (7) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

— END OF TASK —

891. ELCU (Right ACMP) Sensed Position and Commanded Position Do Not Agree - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-12005.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
NOTE: This fault can be caused by a power interruption of more than 10 seconds (left main DC bus/left AC section bus), or by the ELCU tripped due anti-cycling or overcurrent protection.
 - (a) Pressurize the right hydraulic system with the right alternating current motor pump (ACMP). To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (a) If the maintenance messages related to the left electrical load management system (ELMS) show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

EFFECTIVITY
ARO ALL

29-11 TASKS 890-891

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 298.96
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) If the MAT shows NOT ACTIVE for maintenance message 29-12005 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12005 after 20 seconds, then continue.
- (b) If the maintenance messages related to the left ASG in left cardfile and right ASG in right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for maintenance message 29-12005 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12005 after 20 seconds, then continue.
- (c) If the maintenance messages related to the left ASG in right cardfile and right ASG in left cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for maintenance message 29-12005 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12005 after 20 seconds, then continue.
- (d) If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (2) Do this check of the wiring:
 - (a) Disconnect connector DM293204A from the right ACMP, M29104.
 - (b) Disconnect connector DM29203A from the right ACMP electrical load control unit (ELCU), M29203.
 - (c) Do a wiring check between these pins of connector DM29203A at the P100 left power panel and connector DM29204A at the right ACMP (WDM 29-11-22):

EFFECTIVITY
ARO ALL

29-11 TASK 891

D633W103-ARO

Page 298.97
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

DM29203A

pin A2 pin A
pin B2 pin B
pin C2 pin C

DM29204A

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM29203A and DM29204A.
 - 3) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM29203A.
- (3) Replace the right ACMP, M29204.

These are the tasks:

Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801,

Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801.

- (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 2) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:

EFFECTIVITY
ARO ALL

29-11 TASK 891

D633W103-ARO

Page 298.98
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

892. ELCU (ACMP C2) Sensed Position and Commanded Position Do Not Agree - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-12010.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.

- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:

NOTE: This fault can be caused by a power interruption of more than 10 seconds (right main DC bus/right AC section bus), or by the ELCU tripped due anti-cycling or overcurrent protection.

- (a) Pressurize the center hydraulic system with the center 2 alternating current motor pump (ACMP C2). To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.

- (a) If the maintenance messages related to the right electrical load management system (ELMS) show in Existing Faults, then do these steps:

- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
- 2) Do the specified task for the maintenance message.
- 3) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 4) If the MAT shows NOT ACTIVE for maintenance message 29-12010 after 20 seconds, you corrected the fault. Do this step to complete the task:
- a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12010 after 20 seconds, then continue.

- (b) If the maintenance messages related to the left ASG in left cardfile and right ASG in right cardfile show in Existing Faults, then do these steps:

- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
- 2) Do the specified task for the maintenance message.

EFFECTIVITY
ARO ALL

29-11 TASKS 891-892

D633W103-ARO

Page 298.99
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- 3) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump,
AMM TASK 29-11-00-860-803.
- 4) If the MAT shows NOT ACTIVE for maintenance message 29-12010 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12010 after 20 seconds, then continue.
- (c) If the maintenance messages related to the left ASG in right cardfile and right ASG in left cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump,
AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for maintenance message 29-12010 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12010 after 20 seconds, then continue.
- (d) If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (2) Do this check of the wiring:
 - (a) Disconnect connector DM29311A from ACMP C2, M29311.
 - (b) Disconnect connector DM29308A from ACMP C2 electrical load control unit (ELCU), M29308.
 - (c) Do a wiring check between these pins of connector DM29311A at the P200 right power panel and connector DM29308A at the ACMP C2 (WDM 29-11-32):

DM29308A	DM29311A
pin A2	pin A
pin B2	pin B
pin C2	pin C
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM29308A and DM29311A.
 - 3) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump,
AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:

EFFECTIVITY
ARO ALL

29-11 TASK 892

D633W103-ARO

Page 298.100
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM29308A.
- (3) Replace the ACMP C2, M29011.
These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
- (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 2) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

893. ELCU (ACMP C1) Sensed Position and Commanded Position Do Not Agree - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-12015.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:

NOTE: This fault can be caused by a power interruption of more than 10 seconds (left main DC bus/left AC section bus), or by the ELCU tripped due anti-cycling or overcurrent protection.

EFFECTIVITY
ARO ALL

29-11 TASKS 892-893

D633W103-ARO

Page 298.101
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the center hydraulic system with the center 1 alternating current motor pump (ACMP C1). To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (a) If the maintenance messages related to the left electrical load management system (ELMS) show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for maintenance message 29-12015 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12015 after 20 seconds, then continue.
 - (b) If the maintenance messages related to the left ASG in left cardfile and right ASG in right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for maintenance message 29-12015 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12015 after 20 seconds, then continue.
 - (c) If the maintenance messages related to the left ASG in right cardfile and right ASG in left cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

EFFECTIVITY
ARO ALL

29-11 TASK 893

D633W103-ARO

Page 298.102
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) If the MAT shows NOT ACTIVE for maintenance message 29-12015 after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- 5) If the MAT shows ACTIVE or LATCHED for maintenance message 29-12015 after 20 seconds, then continue.
- (d) If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (2) Do this check of the wiring:
 - (a) Disconnect connector DM29304A from ACMP C1.
 - (b) Disconnect connector DM29303A from ACMP C1 electrical load control unit (ELCU), M29303.
 - (c) Do a wiring check between these pins of connector DM29303A at the P100 left power panel and connector DM29304A at ACMP C1 (WDM 29-11-31):

DM29303A	DM29304A
pin A2	pin A
pin B2	pin B
pin C2	pin C
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connectors DM29303A and DM29304A.
 - 3) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM29303A.
- (3) Replace the ACMP C1, M29304.

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,

Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.

 - (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASK 893

D633W103-ARO

Page 298.103
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

———— END OF TASK ————

894. Reservoir (Center) Fluid Quantity is Low - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10150.

B. Initial Evaluation

- (1) Do the applicable steps from this task to verify the hydraulic fluid level at the center system reservoir:
Hydraulic Reservoir Fluid Level Check, AMM TASK 12-12-01-610-801,
- (2) If the fluid level is too low, then do the Fault Isolation Procedure - Leakage below.
NOTE: The lower sight glass on the hydraulic reservoir will be dark if the fluid level is normal.
The lower sight glass will show red if the fluid level is too low.
- (3) If the fluid level is normal, then continue.
- (4) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (5) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure - Indication

- (1) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center reservoir quantity transmitter, M29307.

These are the tasks:

Reservoir Quantity Transmitter Removal, AMM TASK 29-33-02-000-801,

EFFECTIVITY
ARO ALL

29-11 TASKS 893-894

D633W103-ARO

Page 298.104
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Reservoir Quantity Transmitter Installation, AMM TASK 29-33-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

D. Fault Isolation Procedure - Leakage

- (1) Do a check of the external hydraulic leakage:
 - (a) For the center hydraulic system, do this task: Main Hydraulic Systems External Leakage Check, AMM TASK 29-11-00-200-804.
 - (b) If the external hydraulic leakage is not within the maintenance limits, then do these steps:
 - 1) Repair the leakage.
 - 2) For the center hydraulic system, do this task: Hydraulic Reservoir Filling, AMM TASK 12-12-01-610-802.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the external hydraulic leakage is within the maintenance limits, then continue.
- (2) If the hydraulic fluid level continues to decrease and the external hydraulic leakage is within the maintenance limits, then do this task:

Reservoir Fluid Quantity Problems - Fault Isolation, 29-11 TASK 960,

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.

————— END OF TASK —————

895. ACMP (Center 1) Case Drain Temperature Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10540.

B. General

- (1) The ACMP has a temperature switch that is a part of the pump. It closes at 221°F (105°C) and reopens when the pump temperature decreases to 167°F (75°C).

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) The ACMP temperature switch provides an overheat indication that is independent of the ACMP temperature transducer.

NOTE: Some ACMP faults can stop the fluid flow from the case drain and cause a pump overheat that is not detected by the ACMP case drain temperature transducer.

- (a) The ACMP temperature switch is connected in parallel with the ACMP temperature transducer. When it closes, the switch circuit provides a signal to the HYDIM card that is equivalent to the transducer signal at 232.9°F (111.6°C).
- (b) The valid signal for the ACMP temperature transducer is 1 to 40 ma instead of the typical range of 1 to 23 ma. This allows the total signal from the switch circuit and the transducer to be detected as an overheat condition instead of as a transducer fault.
- (c) An ACMP temperature transducer fault that causes the temperature signal to be larger than normal (drifting high) can be detected as an overheat condition instead of as a transducer fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 894-895

D633W103-ARO

Page 298.105
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

- (d) An ACMP temperature switch fault that causes the temperature signal to be larger than normal (short circuit) can be detected as an ACMP temperature transducer fault instead of as an overheat condition.

ARO ALL

C. Initial Evaluation

- (1) Do a check of the fault history for maintenance messages 29-10540, 29-10550 or 29-17002.
 - (a) If the fault history shows ACTIVE or LATCHED for any combination of these maintenance messages, then do these steps:

NOTE: A history of intermittent ACMP or ELCU fault messages can be an indication of a degraded component that will soon fail in service.

 - 1) Replace the center 1 ACMP electrical load control unit (ELCU), M29303.

These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - 2) Replace the center system alternating current motor pump (ACMP) (C1).

These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
 - (b) If maintenance messages 29-10550 and 29-17002 do not show in the fault history, then continue.
- (2) If the MAT shows ACTIVE for maintenance message 29-10540, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for maintenance message 29-10540, then do these steps:
 - (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate the center hydraulic system with ACMP C1 until the ACMP C1 temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (e) If the MAT shows NOT ACTIVE for the maintenance message after the temperature becomes stable, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

D. Fault Isolation Procedure

- (1) Do this check of the hydraulic internal leakage:

NOTE: A higher than normal rate of internal leakage can cause the hydraulic fluid to become hot.

EFFECTIVITY
ARO ALL

29-11 TASK 895

D633W103-ARO

Page 298.106
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) For the center hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
- (b) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
 - 1) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 2) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - 3) Operate ACMP C1 until the ACMP C1 temperature on the hydraulic maintenance page becomes stable.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (c) If the hydraulic internal leakage is less than 6.5 gpm, then continue.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) Do this check of the ACMP temperature switch circuit: (WDM 29-11-31)
 - (a) Disconnect connector DM29304B from the ACMP C1 temperature switch M29304.
 - (b) Measure the resistance between pin 3 of connector DM29304B and structure ground.
 - (c) If the resistance is not 663-733 ohms, then do these steps:
 - 1) Repair the wiring.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 3) Re-connect connector DM29304B.
 - (d) If the resistance is 663-733 ohms, then continue.
 - (e) Make sure the ACMP temperature is less than 167°F (75°C).
 - (f) Do a check for continuity between pins 2 and 3 of the ACMP temperature switch connector.
 - (g) If you find continuity and the ACMP temperature is less than 167°F (75°C), then do these steps:
 - 1) Replace the center 1 alternating current motor pump (ACMP C1), M29304.
These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
 - 2) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) Operate ACMP C1 until the ACMP C1 temperature on the hydraulic maintenance page becomes stable.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASK 895

D633W103-ARO

Page 298.107
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

- 5) Remove the pressure from the center hydraulic system, do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808
- (h) If you do not find continuity, then continue.
- (i) Re-connect connector DM29304B.

ARO ALL

- (3) Replace the ACMP C1 temperature transducer, M29319.

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-41-000-801,

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-41-400-801.

- (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) Operate ACMP C1 until the ACMP C1 temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Replace the center alternating current motor pump (ACMP), (C1), M29304.

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,

Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.

- (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
- (c) Operate ACMP C1 until the ACMP C1 temperature on the hydraulic maintenance page becomes stable.
- (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (e) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (5) Replace the center left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASK 895

D633W103-ARO

Page 298.108
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) Operate ACMP C1 until the ACMP C1 temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

896. ACMP (Center 1) Output Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10550.

B. Initial Evaluation

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (1) Do a check of the fault history for maintenance messages 29-10550, 29-17002 or 29-10540.
 - (a) If the fault history shows ACTIVE or LATCHED for any combination of these maintenance messages, then do these steps:

NOTE: A history of intermittent ACMP or ELCU fault messages can be an indication of a degraded component that will soon fail in service.

 - 1) Replace the center 1 ACMP electrical load control unit (ELCU), M29303.

These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - 2) Replace the center system alternating current motor pump (ACMP) (C1).

These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
 - (b) If maintenance messages 29-17002 and 29-10540 do not show in the fault history, then continue.
- (2) If the MAT shows ACTIVE for maintenance message 29-10550, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for maintenance message 29-10550, then do these steps:
 - (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.

EFFECTIVITY
ARO ALL

29-11 TASKS 895-896

D633W103-ARO

Page 298.109
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

ARO ALL

C. Fault Isolation Procedure

- (1) Look at the hydraulic maintenance page on the MFD, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804
 - (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the C PRIMARY PUMP PRESS indication on the hydraulic maintenance page.
 - (c) If the C PRIMARY PUMP PRESS indication is difference than the center pump pressure, then do these steps:
 - 1) Replace the ACMP C1 pressure transducer, M29312.
These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-41-000-801,
Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-41-400-801.
 - 2) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the C PRIMARY PUMP PRESS indication is same as the center pump pressure, then continue.
- (2) Replace the center system alternating current motor pump (ACMP) (C1).
These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
 - (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASK 896

D633W103-ARO

Page 298.110
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check for blocking of the supply hose:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



DO NOT LET THE HYDRAULIC FLUID STAY ON YOUR SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



IMMEDIATELY CLEAN ALL HYDRUALIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the self-sealing fitting of the supply hose from the adapter on the ACMP C1.
- (c) Remove the adapter from the port of the ACMP C1.
- (d) Install the adapter to the self-sealing fitting of the supply hose.

NOTE: A container is necessary to catch the hydraulic fluid drain from the supply hose.
- (e) Tighten the adapter to 855-945 pound-inches.
- (f) If there is no hydraulic fluid drained from the supply hose, then do these steps:
 - 1) Replace the self-sealing fitting and the supply hose (AMM TASK 29-11-02-400-801).
 - 2) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (g) If there is hydraulic fluid drained from the supply hose, then continue.
- (h) Remove the adapter from the self-sealing fitting.
 - (i) Install the adapter to the port on the ACMP C1.
 - (j) Re-connect the self-sealing fitting of the supply hose to the adapter on the ACMP C1.
- (4) Do a check for blocking of the pressure hose at the filter module:
 - (a) Do a check of the differential pressure indicator on the ACMP C1 pressure and case drain filter module. To do it, do this task: Differential Pressure Indicators of the Alternating Current Motor Pumps (ACMPs) for the Pressure and Case Drain Filters Inspection/Check, AMM TASK 29-11-00-200-801.
 - (b) Do a check of the filter element on the ACMP C1. To do it, do this task: Filter Elements of the Alternating Current Motor Pumps (ACMPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-803.
 - (c) If you find a problem with the ACMP C1, then do these steps:
 - 1) Replace the differential pressure or the filter element if it is necessary.These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,

EFFECTIVITY
ARO ALL

29-11 TASK 896

D633W103-ARO

Page 298.111
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Center System Alternating Current Motor Pump (ACMP) Installation, AMM
TASK 29-11-02-400-801.

- 2) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If you do not find a problem with the ACMP C1, then continue.
- (5) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the center hydraulic system with ACMP C1. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

897. **ACMP (Center 2) Case Drain Temperature Problems - Fault Isolation**

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10560.

B. General

- (1) The ACMP has a temperature switch that is a part of the pump. It closes at 221°F (105°C) and reopens when the pump temperature decreases to 167°F (75°C).

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) The ACMP temperature switch provides an overheat indication that is independent of the ACMP temperature transducer.

NOTE: Some ACMP faults can stop the fluid flow from the case drain and cause a pump overheat that is not detected by the ACMP case drain temperature transducer.

- (a) The ACMP temperature switch is connected in parallel with the ACMP temperature transducer. When it closes, the switch circuit provides a signal to the HYDIM card that is equivalent to the transducer signal at 232.9°F (111.6°C).
- (b) The valid signal for the ACMP temperature transducer is 1 to 40 ma instead of the typical range of 1 to 23 ma. This allows the total signal from the switch circuit and the transducer to be detected as an overheat condition instead of as a transducer fault.
- (c) An ACMP temperature transducer fault that causes the temperature signal to be larger than normal (drifting high) can be detected as an overheat condition instead of as a transducer fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 896-897

D633W103-ARO

Page 298.112
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

- (d) An ACMP temperature switch fault that causes the temperature signal to be larger than normal (short circuit) can be detected as an ACMP temperature transducer fault instead of as an overheat condition.

ARO ALL

C. Initial Evaluation

- (1) Do a check of the fault history for maintenance messages 29-10560, 29-10570 or 29-17004.
 - (a) If the fault history shows ACTIVE or LATCHED for any combination of these maintenance messages, then do these steps:

NOTE: A history of intermittent ACMP or ELCU fault messages can be an indication of a degraded component that will soon fail in service.

 - 1) Replace the center 2 ACMP electrical load control unit (ELCU), M29308.

These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - 2) Replace the center system alternating current motor pump (ACMP) (C2).

These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
 - (b) If maintenance messages 29-10570 and 29-17004 do not show in the fault history, then continue.
- (2) If the MAT shows ACTIVE for maintenance message 29-10560, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for maintenance message 29-10560, then do these steps:
 - (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate the center hydraulic system with ACMP C2 until the ACMP C2 temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do the Fault Isolation Procedure below.
 - (e) If the MAT shows NOT ACTIVE for the maintenance message after the temperature becomes stable, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

D. Fault Isolation Procedure

- (1) Do this check of the hydraulic internal leakage:

NOTE: A higher than normal rate of internal leakage can cause the hydraulic fluid to become hot.

EFFECTIVITY
ARO ALL

29-11 TASK 897

D633W103-ARO

Page 298.113
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) For the center hydraulic system, do this task: Main Hydraulic Systems Gross Internal Leakage Check, AMM TASK 29-11-00-200-805.
- (b) If the hydraulic internal leakage is greater than 6.5 gpm, then do these steps:
 - 1) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 2) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - 3) Operate ACMP C2 until the ACMP C2 temperature on the hydraulic maintenance page becomes stable.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (c) If the hydraulic internal leakage is less than 6.5 gpm, then continue.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) Do this check of the ACMP temperature switch circuit: (WDM 29-11-32)
 - (a) Disconnect connector DM29311B from the ACMP C2 temperature switch M29311.
 - (b) Measure the resistance between pin 3 of connector DM29311B and structure ground.
 - (c) If the resistance is not 663-733 ohms, then do these steps:
 - 1) Repair the wiring.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 3) Re-connect connector DM29311B.
 - (d) If the resistance is 663-733 ohms, then continue.
 - (e) Make sure the ACMP temperature is less than 167°F (75°C).
 - (f) Do a check for continuity between pins 2 and 3 of the ACMP temperature switch connector.
 - (g) If you find continuity and the ACMP temperature is less than 167°F (75°C), then do these steps:
 - 1) Replace the center 2 alternating current motor pump (ACMP C2), M29311.
These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
 - 2) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) Operate ACMP C2 until the ACMP C2 temperature on the hydraulic maintenance page becomes stable.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASK 897

D633W103-ARO

Page 298.114
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

- 5) Remove the pressure from the center hydraulic system, do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808
- (h) If you do not find continuity, then continue.
- (i) Re-connect connector DM29311B.

ARO ALL

- (3) Replace the ACMP C2 temperature transducer, M29320.

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-41-000-801,

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-41-400-801.

- (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Operate ACMP C2 until the ACMP C2 temperature on the hydraulic maintenance page becomes stable.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (4) Replace the center 2 alternating current motor pump (ACMP C2), M29311.

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,

Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.

- (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (c) Operate ACMP C2 until the ACMP C2 temperature on the hydraulic maintenance page becomes stable.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (e) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (5) Replace the center left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASK 897

D633W103-ARO

Page 298.115
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) Operate ACMP C2 until the ACMP C2 temperature on the hydraulic maintenance page becomes stable.
- (c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

898. ACMP (Center 2) Output Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10570.

B. Initial Evaluation

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (1) Do a check of the fault history for maintenance messages 29-10570, 29-17004 or 29-10560.
 - (a) If the fault history shows ACTIVE or LATCHED for any combination of these maintenance messages, then do these steps:

NOTE: A history of intermittent ACMP or ELCU fault messages can be an indication of a degraded component that will soon fail in service.

 - 1) Replace the center 2 ACMP electrical load control unit (ELCU), M29308.

These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - 2) Replace the center system alternating current motor pump (ACMP) (C2).

These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
 - (b) If maintenance messages 29-17004 and 29-10560 do not show in the fault history, then continue.
- (2) If the MAT shows ACTIVE for maintenance message 29-10570, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for maintenance message 29-10570, then do these steps:
 - (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.

EFFECTIVITY
ARO ALL

29-11 TASKS 897-898

D633W103-ARO

Page 298.116
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

ARO ALL

C. Fault Isolation Procedure

- (1) Look at the hydraulic maintenance page on the MFD, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804
 - (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the C PRIMARY PUMP PRESS indication on the hydraulic maintenance page.
 - (c) If the C PRIMARY PUMP PRESS indication is difference than the center pump pressure, then do these steps:
 - 1) Replace the ACMP C2 pressure transducer, M29317.
These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-41-000-801,
Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-41-400-801.
 - 2) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the C PRIMARY PUMP PRESS indication is same as the center pump pressure, then continue.
- (2) Replace the center system alternating current motor pump (ACMP) (C2).
These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,
Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.
 - (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASK 898

D633W103-ARO

Page 298.117
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check for blocking of the supply hose:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



DO NOT LET THE HYDRAULIC FLUID STAY ON YOUR SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



IMMEDIATELY CLEAN ALL HYDRUALIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the self-sealing fitting of the supply hose from the adapter on the ACMP C2.
- (c) Remove the adapter from the port of the ACMP C2.
- (d) Install the adapter to the self-sealing fitting of the supply hose.

NOTE: A container is necessary to catch hydraulic fluid drain from the supply hose.
- (e) Tighten the adapter to 855-945 pound-inches.
- (f) If there is no hydraulic fluid drained from the supply hose, then do these steps:
 - 1) Replace the self-sealing fitting and the supply hose (AMM TASK 29-11-02-400-801).
 - 2) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (g) If there is hydraulic fluid drained from the supply hose, then continue.
- (h) Remove the adapter from the self-sealing fitting.
- (i) Install the adapter to the port on the ACMP C2.
- (j) Re-connect the self-sealing fitting of the supply hose to the adapter on the ACMP C2.
- (4) Do a check for blocking of the pressure hose at the filter module:
 - (a) Do a check of the differential pressure indicator on the ACMP C2 pressure and case drain filter module. To do it, do this task: Differential Pressure Indicators of the Alternating Current Motor Pumps (ACMPs) for the Pressure and Case Drain Filters Inspection/Check, AMM TASK 29-11-00-200-801.
 - (b) Do a check of the filter element on the ACMP C2. To do it, do this task: Filter Elements of the Alternating Current Motor Pumps (ACMPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-803.
 - (c) If you find a problem with the ACMP C2, then do these steps:
 - 1) Replace the differential pressure or the filter element if it is necessary.These are the tasks:
Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801,

EFFECTIVITY
ARO ALL

29-11 TASK 898

D633W103-ARO

Page 298.118
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801.

- 2) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - d) If you do not find a problem with the ACMP C2, then continue.
- (5) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

899. ACMP (Left) Output Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10620.

B. Initial Evaluation

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (1) Do a check of the fault history for maintenance messages 29-10620, 29-17003 or 29-10610.
 - (a) If the fault history shows ACTIVE or LATCHED for any combination of these maintenance messages, then do these steps:

NOTE: A history of intermittent ACMP or ELCU fault messages can be an indication of a degraded component that will soon fail in service.

- 1) Replace the left ACMP electrical load control unit (ELCU), M29103.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

- 2) Replace the left system alternating current motor pump (ACMP).

These are the tasks:

Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801,

EFFECTIVITY
ARO ALL

29-11 TASKS 898-899

D633W103-ARO

Page 298.119
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP (Continued)

Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801.

- (b) If maintenance messages 29-17003 and 29-10610 do not show in the fault history, then continue.
- (2) If the MAT shows ACTIVE for maintenance message 29-10620, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for maintenance message 29-10620, then do these steps:
 - (a) Pressurize the left hydraulic system with the left alternating current motor pump (ACMP). To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

ARO ALL

C. Fault Isolation Procedure

- (1) Look at the hydraulic maintenance page on the multi-function display (MFD). To look at it, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (a) Pressurize the left hydraulic system with left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the L DEMAND PUMP PRESS indication on the hydraulic maintenance page.
 - (c) If the L DEMAND PUMP PRESS indication is different than the left system pressure, then do these steps:
 - 1) Replace the left ACMP pressure transducer, M29109.
These are the tasks:
Left and Right System Alternating Current Motor Pump (ACMP) Pressure Transducer Removal, AMM TASK 29-31-02-000-801,
Left and Right System Alternating Current Motor Pump (ACMP) Pressure Transducer Installation, AMM TASK 29-31-02-400-801.
 - 2) Pressurize the left hydraulic system with left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the L DEMAND PUMP PRESS indication is same as the left system pressure, then continue.
- (2) Replace the left system alternating current motor pump (ACMP).
These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASK 899

D633W103-ARO

Page 298.120
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801,

Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801.

- (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check for blocking of the supply hose:
- (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



WARNING

DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



CAUTION

IMMEDIATELY CLEAN ALL HYDRAULIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the self-sealing fitting of the supply hose from the adapter on the left ACMP.
 - (c) Remove the adapter from the port of the left ACMP.
 - (d) Install the adapter to the self-sealing fitting of the supply hose.

NOTE: A container is necessary to catch hydraulic fluid drain from the supply hose.
 - (e) Tighten the adapter to 855-945 pound-inches.
 - (f) If there is no hydraulic fluid drained from the supply hose, then do these steps:
 - 1) Replace the self-sealing fitting and the supply hose (AMM TASK 29-11-02-400-801).
 - 2) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (g) If there is hydraulic fluid drained from the supply hose, then continue.
 - (h) Remove the adapter from the self-sealing fitting.
 - (i) Install the adapter to the port on the left ACMP.
 - (j) Re-connect the self-sealing fitting of the supply hose to the adapter on the left ACMP.
- (4) Do a check for blocking of the pressure hose at the filter module:

EFFECTIVITY
ARO ALL

29-11 TASK 899

D633W103-ARO

Page 298.121
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do a check of the differential pressure indicator on the left ACMP pressure and case drain filter module. To do it, do this task: Differential Pressure Indicators of the Alternating Current Motor Pumps (ACMPs) for the Pressure and Case Drain Filters Inspection/Check, AMM TASK 29-11-00-200-801.
- (b) Do a check of the filter element on the left ACMP pressure and case drain filter module. To do it, do this task: Filter Elements of the Alternating Current Motor Pumps (ACMPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-803.
- (c) If you find a problem at the left ACMP pressure and case drain filter module, then do these steps:
 - 1) Replace the differential pressure or the filter element if it is necessary.
These are the tasks:
Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-40-000-801,
Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-40-400-801.
 - 2) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If you do not find a problem with the left ACMP pressure and case drain filter module, then continue.
- (5) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) Pressurize the left hydraulic system with the left ACMP, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

900. ACMP (Right) Output Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10710.

B. Initial Evaluation

EFFECTIVITY
ARO ALL

29-11 TASKS 899-900

D633W103-ARO

Page 298.122
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (1) Do a check of the fault history for maintenance messages 29-10710, 29-17001 or 29-10700.
 - (a) If the fault history shows ACTIVE or LATCHED for any combination of these maintenance messages, then do these steps:

NOTE: A history of intermittent ACMP or ELCU fault messages can be an indication of a degraded component that will soon fail in service.

 - 1) Replace the right ACMP electrical load control unit (ELCU), M29203.

These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - 2) Replace the right system alternating current motor pump (ACMP).

These are the tasks:
Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801,
Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801.
 - (b) If maintenance messages 29-17001 and 29-10700 do not show in the fault history, then continue.
- (2) If the MAT shows ACTIVE for maintenance message 29-10710, then do the Fault Isolation Procedure below.
- (3) If the MAT shows LATCHED for maintenance message 29-10710, then do these steps:
 - (a) Pressurize the right hydraulic system with the right alternating current motor pump (ACMP). To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

ARO ALL

C. Fault Isolation Procedure

- (1) Look at the hydraulic maintenance page on the multi-function display (MFD). To look at it, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) Look at the R DEMAND PUMP PRESS indication on the hydraulic maintenance page.
 - (c) If the R DEMAND PUMP PRESS indication is different than the right system pressure, then do these steps:
 - 1) Replace the right ACMP pressure transducer, M29209.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASK 900

D633W103-ARO

Page 298.123
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Left and Right System Alternating Current Motor Pump (ACMP) Pressure Transducer Removal, AMM TASK 29-31-02-000-801,

Left and Right System Alternating Current Motor Pump (ACMP) Pressure Transducer Installation, AMM TASK 29-31-02-400-801.

- 2) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the R DEMAND PUMP PRESS indication is same as the right system pressure, then continue.
- (2) Replace the right system alternating current motor pump (ACMP).

These are the tasks:

Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801,

Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801.

 - (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message, then continue.
- (3) Do a check for blocking of the supply hose:
 - (a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.



DO NOT LET THE HYDRAULIC FLUID STAY ON YOU SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE FLUID THROUGH YOUR SKIN.



IMMEDIATELY CLEAN ALL HYDRAULIC FLUID THAT FALLS ON THE AIRPLANE PARTS. THE FLUID CAN CAUSE DAMAGE TO THE PAINT AND CORROSION TO SOME PARTS.

- (b) Disconnect the self-sealing fitting of the supply hose from the adapter on the right ACMP.
- (c) Remove the adapter from the port of the right ACMP.
- (d) Install the adapter to the self-sealing fitting of the supply hose.

NOTE: A container is necessary to catch hydraulic fluid drain from the supply hose.
- (e) Tighten the adapter to 855-945 pound-inches.

EFFECTIVITY
ARO ALL

29-11 TASK 900

D633W103-ARO

Page 298.124
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (f) If there is no hydraulic fluid drained from the supply hose, then do these steps:
 - 1) Replace the self-sealing fitting and the supply hose (AMM TASK 29-11-02-400-801).
 - 2) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (g) If there is hydraulic fluid drained from the supply hose, then continue.
- (h) Remove the adapter from the self-sealing fitting.
- (i) Install the adapter to the port on the right ACMP.
- (j) Re-connect the self-sealing fitting of the supply hose to the adapter on the right ACMP.
- (4) Do a check for blocking of the pressure hose at the filter module:
 - (a) Do a check of the differential pressure indicator on the right ACMP pressure and case drain filter module. To do it, do this task: Differential Pressure Indicators of the Alternating Current Motor Pumps (ACMPs) for the Pressure and Case Drain Filters Inspection/Check, AMM TASK 29-11-00-200-801.
 - (b) Do a check of the filter element on the right ACMP pressure and case drain module. To do it, do this task: Filter Elements of the Alternating Current Motor Pumps (ACMPs) Pressure and Case Drain Filter Modules Inspection/Check, AMM TASK 29-11-00-200-803.
 - (c) If you find a problem with the right ACMP pressure and case drain module, then do these steps:
 - 1) Replace the differential pressure indicator or the filter element if it is necessary.
These are the tasks:
Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-40-000-801,
Left and Right System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-40-400-801.
 - 2) Pressurize the right hydraulic system with right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - 3) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - a) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If you do not find a problem with the right ACMP pressure and case drain filter module, then continue.
- (5) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 900

D633W103-ARO

Page 298.125
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

901. Temperature Transducer (ACMP 1 Center) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10890.

B. General

- (1) The ACMP has a temperature switch that is a part of the pump. It closes at 105C and reopens when the pump temperature decreases to 75C.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) The ACMP temperature switch provides an overheat indication that is independent of the ACMP temperature transducer.

NOTE: Some ACMP faults can stop the fluid flow from the case drain and cause a pump overheat that is not detected by the ACMP case drain temperature transducer.

- (a) The ACMP temperature switch is connected in parallel with the ACMP temperature transducer. When it closes, the switch circuit provides a signal to the HYDIM card that is equivalent to the transducer signal at 111.6C.
- (b) The valid signal for the ACMP temperature transducer is 1 to 40 ma instead of the typical range of 1 to 23 ma. This allows the total signal from the switch circuit and the transducer to be detected as an overheat condition instead of as a transducer fault.
- (c) An ACMP temperature transducer fault that causes the temperature signal to be larger than normal (drifting high) can be detected as an overheat condition instead of as a transducer fault.
- (d) An ACMP temperature switch fault that causes the temperature signal to be larger than normal (short circuit) can be detected as an ACMP temperature transducer fault instead of as an overheat condition.

ARO ALL

C. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Replace the center alternating current motor pump 1 (ACMP C1) temperature transducer, M29319.

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-41-000-801,

EFFECTIVITY
ARO ALL

29-11 TASKS 900-901

D633W103-ARO

Page 298.126
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-41-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) Do this check of the wiring:
 - (a) Make sure connector DM29304B is correctly installed on the ACMP C1 temperature switch M29304.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 2) If the MAT shows ACTIVE for the maintenance message, then continue.
 - (b) Disconnect connector DM29304B from the ACMP C1 temperature switch M29304.
NOTE: This checks the resistor for the temperature switch.
 - (c) Measure the resistance between pin 3 of connector DM29304B and structure ground.
 - 1) If the resistance is not 663-733 ohms, then do these steps:
 - a) Repair the wiring.
 - b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - c) Re-connect connector DM29304B.
 - 2) If the resistance is 663-733 ohms, then continue.
 - (d) Re-connect connector DM29304B.

ARO ALL

- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29319 from the ACMP C1 temperature transducer, M29319.
 - (c) Do a wiring check between these pins of connector DM29319 at the ACMP C1 temperature transducer, M29319, and connector XA4 at the LSCF, P85 (SSM 29-11-31):

DM29319	XA4
pin 1	pin 76
pin 2	pin 78

EFFECTIVITY
ARO ALL

29-11 TASK 901

D633W103-ARO

Page 298.127
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (d) Do a continuity check between pin 3 of connector DM29319 at the ACMP C1 temperature transducer, M29319, and structure ground (SSM 29-11-31).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29319.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

902. Temperature Transducer (ACMP 2 Center) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10900.

B. General

- (1) The ACMP has a temperature switch that is a part of the pump. It closes at 105C and reopens when the pump temperature decreases to 75C.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) The ACMP temperature switch provides an overheat indication that is independent of the ACMP temperature transducer.

NOTE: Some ACMP faults can stop the fluid flow from the case drain and cause a pump overheat that is not detected by the ACMP case drain temperature transducer.

- (a) The ACMP temperature switch is connected in parallel with the ACMP temperature transducer. When it closes, the switch circuit provides a signal to the HYDIM card that is equivalent to the transducer signal at 111.6C.
- (b) The valid signal for the ACMP temperature transducer is 1 to 40 ma instead of the typical range of 1 to 23 ma. This allows the total signal from the switch circuit and the transducer to be detected as an overheat condition instead of as a transducer fault.
- (c) An ACMP temperature transducer fault that causes the temperature signal to be larger than normal (drifting high) can be detected as an overheat condition instead of as a transducer fault.
- (d) An ACMP temperature switch fault that causes the temperature signal to be larger than normal (short circuit) can be detected as an ACMP temperature transducer fault instead of as an overheat condition.

ARO ALL

C. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

D. Fault Isolation Procedure

- (1) Replace the center alternating current motor pump 2 (ACMP C2) temperature transducer, M29320.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASKS 901-902

D633W103-ARO

Page 298.128
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-41-000-801,

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-41-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

ARO ALL; AIRPLANES WITH OVERHEAT MONITORING AT THE ACMP

- (2) Do this check of the wiring:
 - (a) Make sure connector DM293114B is correctly installed on the ACMP C2 temperature switch M293114.
 - 1) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - 2) If the MAT shows ACTIVE for the maintenance message, then continue.
 - (b) Disconnect connector DM293114B from the ACMP C2 temperature switch M293114.
NOTE: This checks the resistor for the temperature switch.
 - (c) Measure the resistance between pin 3 of connector DM293114B and structure ground.
 - 1) If the resistance is not 663-733 ohms, then do these steps:
 - a) Repair the wiring.
 - b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - c) Re-connect connector DM293114B.
 - 2) If the resistance is 663-733 ohms, then continue.
 - (d) Re-connect connector DM293114B.

ARO ALL

- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29320 from the ACMP C2 temperature transducer, M29320.
 - (c) Do a wiring check between these pins of connector DM29320 at the ACMP C2 temperature transducer, M29320, and connector XA4 at the LSCF, P85 (SSM 29-11-32):

EFFECTIVITY
ARO ALL

29-11 TASK 902

D633W103-ARO

Page 298.129
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

DM29320	XA4
pin 1	pin 77
pin 2	pin 79

- (d) Do a continuity check between pin 3 of connector DM29320 at the ACMP C2 temperature transducer, M29320, and structure ground (SSM 29-11-32).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29320.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

903. Temperature Transducer (ADP 1) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10910.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the air driven pump (ADP) 1 temperature transducer, M29313.

These are the tasks:

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:

EFFECTIVITY
ARO ALL

29-11 TASKS 902-903

D633W103-ARO

Page 298.130
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29313 from the ADP 1 temperature transducer, M29313.
- (c) Do a wiring check between these pins of connector DM29313 at the ADP 1 temperature transducer, M29313, and connector XA4 at the LSCF, P85 (SSM 29-11-33):

DM29313		XA4
pin 1	.....	pin 71
pin 2	.....	pin 73

- (d) Do a continuity check between pin 3 of connector DM29313 at the ADP 1 temperature transducer, M29313, and structure ground (SSM 29-11-33).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29313.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

———— END OF TASK ————

904. Temperature Transducer (ADP 2) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10920.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the air driven pump (ADP) 2 temperature transducer, M29315.

These are the tasks:

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 903-904

D633W103-ARO

Page 298.131
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29315 from the ADP 2 temperature transducer, M29315.
 - (c) Do a wiring check between these pins of connector DM29315 at the ADP 2 temperature transducer, M29315, and connector XA4 at the LSCF, P85 (SSM 29-11-34):

DM29315		XA4	
pin 1	.....	pin 75	
pin 2	.....	pin 74	

- (d) Do a continuity check between pin 3 of connector DM29315 at the ADP 2 temperature transducer, M29315, and structure ground (SSM 29-11-34).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29315.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

905. Pressure Transducer (ACMP 1 Center) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10930.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the center alternating current motor pump 1 (ACMP C1) pressure transducer, M29312.

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-41-000-801,

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-41-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

EFFECTIVITY
ARO ALL

29-11 TASKS 904-905

D633W103-ARO

Page 298.132
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
- (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29312 from the ACMP C1 pressure transducer, M29312.
- (c) Do a wiring check between these pins of connector DM29312 at the ACMP C1 pressure transducer, M29312, and connector XA4 at the LSCF, P85 (SSM 29-11-31):

DM29312	XA4
pin 2	pin 66
pin 3	pin 64

- (d) Do a continuity check between pin 1 of connector DM29312 at the ACMP C1 pressure transducer, M29312, and structure ground (SSM 29-11-31).
- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29312.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

906. Pressure Transducer (ACMP 2 Center) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10940.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the center alternating current motor pump 1 (ACMP C2) pressure transducer, M29317.

These are the tasks:

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-41-000-801,

EFFECTIVITY
ARO ALL

29-11 TASKS 905-906

D633W103-ARO

Page 298.133
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Center System Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-41-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29317 from the ACMP C2 pressure transducer, M29317.
 - (c) Do a wiring check between these pins of connector DM29317 at the ACMP C1 pressure transducer, M29317, and connector XA4 at the LSCF, P85 (SSM 29-11-32):

DM29312	XA4
pin 2	pin 67
pin 3	pin 65

- (d) Do a continuity check between pin 1 of connector DM29317 at the ACMP C2 pressure transducer, M29317, and structure ground (SSM 29-11-32).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29317.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

907. Pressure Transducer (Ram Air Turbine) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10970.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 906-907

D633W103-ARO

Page 298.134
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Replace the ram air turbine (RAT) pressure transducer, M29009.

These are the tasks:

Ram Air Turbine (RAT) Checkout Module and Components Removal, AMM TASK 29-21-11-000-801,

Ram Air Turbine (RAT) Checkout Module and Components Installation, AMM TASK 29-21-11-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
- (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Disconnect connector DM29009 from the RAT pressure transducer, M29009.
- (c) Do a wiring check between these pins of connector DM29009 at the RAT pressure transducer, M29009, and connector XA4 at the LSCF, P85 (SSM 29-21-11):

DM29009	XA4
pin 2	pin 68
pin 3	pin 69

- (d) Do a continuity check between pin 1 of connector DM29009 at the RAT pressure transducer, M29009, and structure ground (SSM 29-21-11).
- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector DM29009.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

908. Pressure Transducer (Center System) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10980.

EFFECTIVITY
ARO ALL

29-11 TASKS 907-908

D633W103-ARO

Page 298.135
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the center system pressure transducer, M29301.

These are the tasks:

Hydraulic System Pressure Transducer Removal, AMM TASK 29-31-01-000-801,
Hydraulic System Pressure Transducer Installation, AMM TASK 29-31-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CR card, A4, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29301 from the center system pressure transducer, M29301.
 - (c) Do a wiring check between these pins of connector DM29301 at the center system pressure transducer, M29301, and connector XA4 at the RSCF, P84 (SSM 29-11-32):

DM29301	XA4
pin 2	pin 61
pin 3	pin 59

- (d) Do a continuity check between pin 1 of connector DM29301 at the center system pressure transducer, M29301, and structure ground (SSM 29-11-32).
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29301.
 - 3) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

EFFECTIVITY
ARO ALL

29-11 TASK 908

D633W103-ARO

Page 298.136
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

909. Temperature Transducer (Reservoir Left) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10995.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the left reservoir temperature transducer, M29102.

These are the tasks:

Reservoir Temperature Transducer Removal, AMM TASK 29-32-01-000-801,

Reservoir Temperature Transducer Installation, AMM TASK 29-32-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29102 from the left reservoir temperature transducer, M29102.
 - (c) Do a wiring check between these pins of connector DM29102 at the left reservoir temperature transducer, M29102, and connector XA17 at the LSCF, P85 (SSM 29-11-13):

DM29102	XA17
pin 1	pin 70
pin 2	pin 72

- (d) Do a continuity check between pin 3 of connector DM29102 at the left reservoir temperature transducer, M29102, and structure ground (SSM 29-11-13).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29102.
 - 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 909

D633W103-ARO

Page 298.137
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

910. Temperature Transducer (Reservoir Right) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11005.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the right reservoir temperature transducer, M29202.

These are the tasks:

Reservoir Temperature Transducer Removal, AMM TASK 29-32-01-000-801,

Reservoir Temperature Transducer Installation, AMM TASK 29-32-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29202 from the right reservoir temperature transducer, M29202.
 - (c) Do a wiring check between these pins of connector DM29202 at the right reservoir temperature transducer, M29202, and connector XA17 at the RSCF, P84 (SSM 29-11-23):

DM29202	XA17
pin 1	pin 70
pin 2	pin 72

- (d) Do a continuity check between pin 3 of connector DM29202 at the right reservoir temperature transducer, M29202, and structure ground (SSM 29-11-13).
- (e) If you find a problem with the wiring, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASKS 909-910

D633W103-ARO

Page 298.138
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Repair the wiring.
- 2) Re-connect connector DM29202.
- 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

911. Quantity Transmitter (Reservoir Center) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11010.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the center reservoir quantity transmitter, M29307.

These are the tasks:

Reservoir Quantity Transmitter Removal, AMM TASK 29-33-02-000-801,

Reservoir Quantity Transmitter Installation, AMM TASK 29-33-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29307 from the center reservoir quantity transmitter, M29307.
 - (c) Do a wiring check between these pins of connector DM29307 at the center reservoir quantity transmitter, M29307, and connector XA4 at the LSCF, P85 (SSM 29-11-13):

DM29307

pin 1	.....	pin 90
pin 3	.....	pin 82
pin 5	.....	pin 84

XA4

EFFECTIVITY
ARO ALL

29-11 TASKS 910-911

D633W103-ARO

Page 298.139
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (d) Do a continuity check between pin 4 of connector DM29307 at the center reservoir quantity transmitter, M29307, and structure ground (SSM 29-11-35).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29307.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

912. Temperature Transducer (Reservoir Center) Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11015.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the center reservoir temperature transducer, M29302.

These are the tasks:

Reservoir Temperature Transducer Removal, AMM TASK 29-32-01-000-801,

Reservoir Temperature Transducer Installation, AMM TASK 29-32-01-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29302 from the center reservoir temperature transducer, M29302.
 - (c) Do a wiring check between these pins of connector DM29302 at the center reservoir temperature transducer, M29302, and connector XA4 at the LSCF, P85 (SSM 29-11-35):

EFFECTIVITY
ARO ALL

29-11 TASKS 911-912

D633W103-ARO

Page 298.140
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

DM29302

pin 1 pin 70
pin 2 pin 72

XA4

- (d) Do a continuity check between pin 3 of connector DM29302 at the center reservoir temperature transducer, M29302, and structure ground (SSM 29-11-35).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29302.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

913. HYDIM (Center Left) No Output on HYDIM Data Out-04 ARINC 429 Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-18893.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Cycle the power supply to the HYDIM-CL card, A4, in the left systems card file (LSCF), P85. Do the following steps:
 - (a) Set the power switch for the HYDIM card to OFF position.

NOTE: Use the power control decal on the front of the cardfile to find the appropriate switch.
 - (b) Wait 10 seconds.
 - (c) Set the power switch for the HYDIM card to ON position.

NOTE: Use the power control decal on the front of the cardfile to find the appropriate switch.
 - (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (e) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the center left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASKS 912-913

D633W103-ARO

Page 298.141
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the power supply unit (PSU) linear monitor card-1, A3 in the left systems card file (LSCF), P85.

These are the tasks:

Card File Power Supply (CFPS) Installation, AMM TASK 31-09-01-400-801,

Card File Power Supply (CFPS) Removal, AMM TASK 31-09-01-000-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (4) Replace the left AIRINC Signal Gateway (ASG) card, A12 in the left systems card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Replace the right AIRINC Signal Gateway (ASG) card, A15 in the left systems card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (6) Replace the left system cardfile chassis, P85 (WDM 29-11-12).
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

914. HYDIM (Center Right) No Output on HYDIM Data Out-04 ARINC 429 Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-18894.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 913-914

D633W103-ARO

Page 298.142
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Cycle the power supply to the HYDIM-CR card, A4, in the right systems card file (RSCF), P84. Do the following steps:

- (a) Set the power switch for the HYDIM card to OFF position.

NOTE: Use the power control decal on the front of the cardfile to find the appropriate switch.

- (b) Wait 10 seconds.

- (c) Set the power switch for the HYDIM card to ON position.

NOTE: Use the power control decal on the front of the cardfile to find the appropriate switch.

- (d) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (e) If the MAT shows ACTIVE for the maintenance message, then continue.

- (2) Replace the center right hydraulic interface module (HYDIM-CR) card, A04, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

- (3) Replace the power supply unit (PSU) linear monitor card-1, A3 in the right systems card file (RSCF), P84.

These are the tasks:

Card File Power Supply (CFPS) Installation, AMM TASK 31-09-01-400-801,

Card File Power Supply (CFPS) Removal, AMM TASK 31-09-01-000-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

- (4) Replace the left AIRINC Signal Gateway (ASG) card, A12 in the right systems card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

- (b) If the MAT shows ACTIVE for the maintenance message, then continue.

- (5) Replace the right AIRINC Signal Gateway (ASG) card, A15 in the left systems card file (LSCF), P85.

EFFECTIVITY
ARO ALL

29-11 TASK 914

D633W103-ARO

Page 298.143
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (6) Replace the right system cardfile chassis, P84 (WDM 29-11-21).
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

— END OF TASK —

915. Modulating Shutoff Valve (ADP 2) Command Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11050.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Pressurize the center hydraulic system with ACMP C2. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (a) Look at the MAINT INFO page on the MFD. To see this page, do this task: Showing a Maintenance Page, AMM TASK 31-61-00-800-804.
 - (b) If the ADP 2 pressure on the hydraulic maintenance page is greater than 200 psig, then do these steps:
 - 1) Replace the pressure transducer check valve on the ADP 2 pressure and case drain filter module.

These are the tasks:

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.

- 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

EFFECTIVITY
ARO ALL

29-11 TASKS 914-915

D633W103-ARO

Page 298.144
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 3) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the ADP 2 pressure on the hydraulic maintenance page is less than 200 psig, then continue.
- (2) Do this task: Pressurize the Pneumatic System, AMM TASK 36-00-00-860-802.
 - (a) Do a check for spinning sound from the ADP 2 and air from the exhaust manifold.
 - (b) If there is spinning sound from the ADP 2 and air from the exhaust manifold, then do these steps:
 - 1) Replace the air driven pump (ADP) 2 modulating shutoff valve (MSOV), V29304.
These are the tasks:
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Removal, AMM TASK 29-11-14-000-801,
Air-Driven Pump (ADP) Modulating Shutoff Valve (MSOV) Installation, AMM TASK 29-11-14-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 4) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If there is no spinning sound from the ADP 1 and no air from the exhaust manifold, then continue.
- (3) Replace the ADP 2 pressure transducer, M29316.
These are the tasks:
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,
Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.
 - (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C2).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

920. HYDIM-L No Input from ASG (Left) on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-19905.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left system cardfile chassis, P85.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the left ARINC Signal Gateway card, A12, in the left systems card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
ARO ALL

29-11 TASKS 915-920

D633W103-ARO

Page 298.146
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

921. HYDIM-R No Input from ASG (Left) on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-19906.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right system cardfile chassis, P84.
- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the left ARINC Signal Gateway card, A12, in the right systems card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

922. HYDIM-CL No Input from ASG (Left) on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-19907.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 921-922

D633W103-ARO

Page 298.147
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left system cardfile chassis, P85.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the left ARINC Signal Gateway card, A12, in the left systems card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

923. HYDIM-CR No Input from ASG (Left) on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-19908.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 922-923

D633W103-ARO

Page 298.148
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right system cardfile chassis, P84.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the left ARINC Signal Gateway card, A12, in the right systems card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

924. HYDIM-L No Input from ASG (Right) on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-19909.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left system cardfile chassis, P85.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the right ARINC Signal Gateway card, A15, in the left systems card file (LSCF), P85.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASKS 923-924

D633W103-ARO

Page 298.149
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

925. HYDIM-R No Input from ASG (Right) on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-19910.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right system cardfile chassis, P84.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the right ARINC Signal Gateway card, A15, in the right systems card file (RSCF), P84.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— END OF TASK —————

926. HYDIM-CL No Input from ASG (Right) on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-19911.

EFFECTIVITY
ARO ALL

29-11 TASKS 924-926

D633W103-ARO

Page 298.150
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

- (1) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the left system cardfile chassis, P85.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the right ARINC Signal Gateway card, A15, in the left systems card file (LSCF), P85.

These are the tasks:

ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,

ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

927. HYDIM-CR No Input from ASG (Right) on ASG Global Bus - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-19912.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

NOTE: If you use a megohmmeter to do wiring checks on an ARINC 429 bus (or if you need the exact resistance of the bus wiring), first remove all the LRUs that are connected to the bus (use the WDM to tell which LRUs are on the bus). Then re-install the LRUs when you are done.

EFFECTIVITY
ARO ALL

29-11 TASKS 926-927

D633W103-ARO

Page 298.151
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (1) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the right system cardfile chassis, P84.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the right ARINC Signal Gateway card, A15, in the right systems card file (RSCF), P84.
These are the tasks:
ARINC Signal Gateway (ASG) Card Removal, AMM TASK 31-09-02-000-801,
ARINC Signal Gateway (ASG) Card Installation, AMM TASK 31-09-02-400-802.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

928. HYDIM Internal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance messages: 29-11060, 29-11070, 29-11080, 29-11090.

B. Fault Isolation Procedure

- (1) Replace the applicable hydraulic interface module (HYDIM) card.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (2) Replace the reservoir quantity gage.
These are the tasks:
Reservoir Quantity Gage Removal, AMM TASK 29-18-06-000-801,
Reservoir Quantity Gage Installation, AMM TASK 29-18-06-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (3) Replace the reservoir fill selector valve.
These are the tasks:
Reservoir Fill Selector Valve Removal, AMM TASK 29-18-02-000-801,

EFFECTIVITY
ARO ALL

29-11 TASKS 927-928

D633W103-ARO

Page 298.152
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Reservoir Fill Selector Valve Installation, AMM TASK 29-18-02-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

929. ADP 1 Control Power Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10220.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the power wiring:
- (a) Remove the center-right hydraulic interface module (HYDIM-CL) card, A4, in the right systems card file (RSCF), P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
- (b) Do a check for 28V DC between pin 7 of connector XA4 at the RSCF, P84, and structure ground (SSM 29-11-38).
- (c) If there is not 28V DC at pin 7 of connector XA4, then do these steps:
- 1) Open the P310 standby power management panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C29609.
 - 3) If there is not 28V DC at the circuit breaker, then do these steps:
 - a) Replace this circuit breaker:
(SSM 29-11-38)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	4	C29609	C HYD AIR PUMP 1

- b) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If there is 28V DC at the circuit breaker, then do these steps:
- a) Repair the wiring between these pins of connector XA4 at the RSCF, P84, and the load terminal of circuit breaker C29609 (SSM 29-11-38):

XA4	C29609
pin 7	term 2

- b) Re-install the HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 928-929

D633W103-ARO

Page 298.153
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- d) If there is 28V DC at pin 7 of connector XA4, then continue.
- (2) Install a new HYDIM-CR card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - a) If the MAT shows NOT ACTIVE (or if the message does not show), you corrected the fault.

— END OF TASK —

930. ADP 2 Control Power Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10230.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the power wiring:
 - a) Remove the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - b) Do a check for 28V DC between pin 7 of connector XA4 at the LSCF, P85, and structure ground (SSM 29-11-39).
 - c) If there is not 28V DC at pin 7 of connector XA4, then do these steps:
 - 1) Open the P310 standby power management panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C29606.
 - 3) If there is not 28V DC at the circuit breaker, then do these steps:
 - a) Replace this circuit breaker:
(SSM 29-11-39)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C29606	HYD AIR PUMP 2

- b) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- 4) If there is 28V DC at the circuit breaker, then do these steps:
 - a) Repair the wiring between these pins of connector XA4 at the LSCF, P85, and the load terminal of circuit breaker C29606 (SSM 29-11-39):

EFFECTIVITY
ARO ALL

29-11 TASKS 929-930

D633W103-ARO

Page 298.154
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

XA4

pin 7 term 2

C29606

- b) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- c) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- d) If there is 28V DC at pin 7 of connector XA4, then continue.
- (2) Install a new HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) If the MAT shows NOT ACTIVE (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

931. Left Reservoir Low Air Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10996.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Fault display on the MAT.
 - (a) If a maintenance message related to low pneumatic pressure shows in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) If the MAT shows NOT ACTIVE for maintenance message 29-10996 (or if the message does not show), you corrected the fault.
 - 4) If the MAT shows ACTIVE for maintenance message 29-10996, then continue.
 - (b) If a maintenance message related to low pneumatic pressure does not show in Existing Faults, then continue.
- (2) Look to see if the left reservoir pressurization shutoff valve is closed.
 - (a) If the pressurization shutoff valve is closed, then do these steps:
 - 1) Open the pressurization shutoff valve.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message, you corrected the fault.
 - (b) If the pressurization shutoff valve is open, then continue.
- (3) Do this task to inspect the left hydraulic reservoir pressurization module filter:
Filter Elements of the Hydraulic Reservoir Pressurization Modules - Inspection/Check, AMM TASK 29-11-00-200-814.

EFFECTIVITY
ARO ALL

29-11 TASKS 930-931

D633W103-ARO

Page 298.155
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this task to pressurize the left hydraulic system reservoir:
Main Hydraulic System Reservoirs Pressurization with an External Air Source, AMM TASK 29-11-00-860-806
- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (c) If the MAT shows ACTIVE for the maintenance message, then continue.
 - 1) Do this task to depressurize the left hydraulic system reservoir:
Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807
- (4) Replace the left reservoir pressure switch, S29105.
These are the tasks:
Reservoir Pressure Switch Removal, AMM TASK 29-31-03-000-801,
Reservoir Pressure Switch Installation, AMM TASK 29-31-03-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Replace the left hydraulic interface module (HYDIM-L) card, A17, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (6) Do this check of the wiring:
 - (a) Remove the HYDIM-L card, A17, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DS29105 from the left reservoir pressure switch, S29105.
 - (c) Do a wiring check between these pins of connector XA17 at the LSCF, P85, and connector DS29105 at the left reservoir pressure switch, S29105 (SSM 29-11-13):

XA17	DS29105
pin 26	pin 2
 - (d) Do a continuity check between pin 1 of connector DS29105 at the left reservoir pressure switch, S29105, and structure ground (SSM 29-11-13).
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DS29105.
 - 3) Re-install the HYDIM-L card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 931

D633W103-ARO

Page 298.156
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

932. Right Reservoir Low Air Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11006.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Fault display on the MAT.
 - (a) If a maintenance message related to low pneumatic pressure shows in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) If the MAT shows NOT ACTIVE for maintenance message 29-11006 (or if the message does not show), you corrected the fault.
 - 4) If the MAT shows ACTIVE for maintenance message 29-11006, then continue.
 - (b) If a maintenance message related to low pneumatic pressure does not show in Existing Faults, then continue.
- (2) Look to see if the right reservoir pressurization shutoff valve is closed.
 - (a) If the pressurization shutoff valve is closed, then do these steps:
 - 1) Open the pressurization shutoff valve.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message, you corrected the fault.
 - (b) If the pressurization shutoff valve is open, then continue.
- (3) Do this task to inspect the right hydraulic reservoir pressurization module filter:
Filter Elements of the Hydraulic Reservoir Pressurization Modules - Inspection/Check, AMM
TASK 29-11-00-200-814
 - (a) Do this task to pressurized the right hydraulic system reservoir:
Main Hydraulic System Reservoirs Pressurization with an External Air Source, AMM
TASK 29-11-00-860-806
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, then continue.
 - 1) Do this task to depressurize the right hydraulic system reservoir:
Main Hydraulic System and the Reservoir Depressurization, AMM
TASK 29-11-00-860-807
- (4) Replace the right reservoir pressure switch, S29205.

EFFECTIVITY
ARO ALL

29-11 TASKS 931-932

D633W103-ARO

Page 298.157
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

These are the tasks:

Reservoir Pressure Switch Removal, AMM TASK 29-31-03-000-801,

Reservoir Pressure Switch Installation, AMM TASK 29-31-03-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Replace the right hydraulic interface module (HYDIM-R) card, A17, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (6) Do this check of the wiring:
 - (a) Remove the HYDIM-R card, A17, in the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DS29205 from the right reservoir pressure switch, S29205.
 - (c) Do a wiring check between these pins of connector XA17 at the RSCF, P84, and connector DS29205 at the left reservoir pressure switch, S29205 (SSM 29-11-23):

XA17	DS29205
pin 26	pin 2

- (d) Do a continuity check between pin 1 of connector DS29205 at the left reservoir pressure switch, S29205, and structure ground (SSM 29-11-23).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DS29205.
 - 3) Re-install the HYDIM-R card, A17. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

933. Center Reservoir Low Air Pressure Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-11016.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault.

EFFECTIVITY
ARO ALL

29-11 TASKS 932-933

D633W103-ARO

Page 298.158
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Fault display on the MAT.
 - (a) If a maintenance message related to low pneumatic pressure shows in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) If the MAT shows NOT ACTIVE for maintenance message 29-11016 (or if the message does not show), you corrected the fault.
 - 4) If the MAT shows ACTIVE for maintenance message 29-11016, then continue.
 - (b) If a maintenance message related to low pneumatic pressure does not show in Existing Faults, then continue.
- (2) Look to see if the center reservoir pressurization shutoff valve is closed.
 - (a) If the pressurization shutoff valve is closed, then do these steps:
 - 1) Open the pressurization shutoff valve.
 - 2) If the MAT shows NOT ACTIVE for the maintenance message, you corrected the fault.
 - (b) If the pressurization shutoff valve is open, then continue.
- (3) Do this task to inspect the center hydraulic reservoir pressurization module filter:
Filter Elements of the Hydraulic Reservoir Pressurization Modules - Inspection/Check, AMM TASK 29-11-00-200-814
 - (a) Do this task to pressurized the center hydraulic system reservoir:
Main Hydraulic System Reservoirs Pressurization with an External Air Source, AMM TASK 29-11-00-860-806
 - (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (c) If the MAT shows ACTIVE for the maintenance message, then continue.
 - 1) Do this task to depressurize the center hydraulic system reservoir:
Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807
- (4) Replace the center reservoir pressure switch, S29306.
These are the tasks:
Reservoir Pressure Switch Removal, AMM TASK 29-31-03-000-801,
Reservoir Pressure Switch Installation, AMM TASK 29-31-03-400-801.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
 - (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (5) Replace the center left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 933

D633W103-ARO

Page 298.159
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

- (a) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.
- (b) If the MAT shows ACTIVE for the maintenance message, then continue.
- (6) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DS29306 from the center reservoir pressure switch, S29306.
 - (c) Do a wiring check between these pins of connector XA4 at the LSCF, P85, and connector DS29306 at the center reservoir pressure switch, S29306 (SSM 29-11-35):

XA4	DS29306
pin 26	pin 2

- (d) Do a continuity check between pin 1 of connector DS29306 at the center reservoir pressure switch, S29306, and structure ground (SSM 29-11-35).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DS29306.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), you corrected the fault.

———— **END OF TASK** ————

934. EICAS Message RAT UNLOCKED - Fault Isolation

A. Initial Evaluation

NOTE: This message shows when the Ram Air Turbine (RAT) is deployed or is not stowed and locked.

- (1) To retract the RAT, do this task: Ram Air Turbine (RAT) Retraction, AMM TASK 29-21-00-860-802.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation procedure below.

B. Fault Isolation Procedure

- (1) Replace the RAT stowed Limit Switch, S29001.
- (2) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect the connector DM29006 from the RAT Checkout Module, M29006.
 - (c) Do a wiring check between these pins of connector XA4 at the LSCF, P85 and connector DM29006 at the RAT Checkout Module, M29006 (SSM 29-21-11):

XA4	DM29006
pin 23	pin 7

EFFECTIVITY
ARO ALL

29-11 TASKS 933-934

D633W103-ARO

Page 298.160
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (d) Do a continuity check between pin 1 of connector DM29006 at the RAT Checkout Module, M29006, and structure ground (SSM 29-21-11).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector DM29006.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Retract the RAT (AMM TASK 29-21-00-860-802).

————— END OF TASK —————

935. EICAS Message HYD PRESS SYS L+R (L+C, R+C, L+C+R) - Fault Isolation

A. Initial Evaluation

NOTE: This message shows when the applicable hydraulic systems are off.

- (1) To supply hydraulic power, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801.
- (2) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.

B. Fault Isolation Procedure

- (1) Do the Fault Isolation Procedure for the appropriate systems:
 - (a) For the left hydraulic system, do this task: Left Hydraulic System Pressure Problems - Fault Isolation, 29-11 TASK 821.
 - (b) For the right hydraulic system, do this task: Right Hydraulic System Pressure Problems - Fault Isolation, 29-11 TASK 822.
 - (c) For the center hydraulic system, do this task: Center Hydraulic System Pressure Problems - Fault Isolation, 29-11 TASK 863.

————— END OF TASK —————

936. Air Driven Pump 1 Temperature Input Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10380.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the ground test display on the MAT for these maintenance messages:
 - (a) 29-10360
 - (b) 29-10390
- (2) If the two maintenance messages specified above show on the ground test display with the message 29-10380, then do these steps:
 - (a) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (b) If the maintenance messages related to the left ASG in the left cardfile and right ASG in the right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.

EFFECTIVITY
ARO ALL

29-11 TASKS 934-936

D633W103-ARO

Page 298.161
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the right cardfile show in Existing Faults, then do these steps:
- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the left cardfile show in Existing Faults, then do these steps:
- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (f) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.
These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
 - a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message shows on the ground test display, then continue.
- (g) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

EFFECTIVITY
ARO ALL

29-11 TASK 936

D633W103-ARO

Page 298.162
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) If the two maintenance messages specified above do not show on the ground test display with the message 29-10380, then do these steps:
- (a) Replace the air-driven pump (ADP) 1 pressure transducer, M29318.

These are the tasks:

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message shows on the ground test display, then continue.
- (b) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message shows on the ground test display, then continue.
- (c) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 936

D633W103-ARO

Page 298.163
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

937. Air Driven Pump 1 Fluid Quantity Input Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10390.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the ground test display on the MAT for these maintenance messages:
 - (a) 29-10360
 - (b) 29-10380
 - (2) If the two maintenance messages specified above show on the ground test display with the message 29-10390, then do these steps:
 - (a) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (b) If the maintenance messages related to the left ASG in the left cardfile and right ASG in the right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (d) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the left cardfile show in Existing Faults, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASKS 936-937

D633W103-ARO

Page 298.164
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
- 2) Do the specified task for the maintenance message.
- 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If the maintenance messages specified above do not show in the Existing Faults, then continue.
- (f) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- b) If the maintenance message shows on the ground test display, then continue.
- (g) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) If the two maintenance messages specified above do not show on the ground test display with the message 29-10390, then do these steps:
 - (a) Replace the air-driven pump (ADP) 1 pressure transducer, M29318.

These are the tasks:

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Removal, AMM TASK 29-11-43-000-801,

Air-Driven Pump (ADP) Pressure and Case Drain Filter Module and Components Installation, AMM TASK 29-11-43-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 937

D633W103-ARO

Page 298.165
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message shows on the ground test display, then continue.
- (b) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.
 - b) If the maintenance message shows on the ground test display, then continue.
- (c) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 1) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.

- a) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

938. ADU 1 Heater Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10005.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the Mat shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.

EFFECTIVITY
ARO ALL

29-11 TASKS 937-938

D633W103-ARO

Page 298.166
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance Existing Faults display (ATA 29) on the MAT for these maintenance messages:
 - (a) 29-10252
 - (b) 29-10007.
- (2) If both of the two maintenance messages specified above show in Existing Faults with the message 29-10005, then do these steps:
 - (a) Replace the center-left hydraulic interace module (HYDIM-HCL), A4, in the left system cardfile (LSCF), P85.

These are the tasks:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
- (3) If the message 29-10005 appears alone in Existing Faults, or with only one of the other two messages, then do these steps:
 - (a) Do a check of the ADP 1 heater:
 - 1) Disconnect connector DM29010 from ADP 1 heater, M29010.
 - 2) Do a continuity check between pins 6 and 1, pins 7 and 4, and pins 5 and 2 of the connector on the ADP 1 heater, M29010.
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Replace the ADP 1 HEATER, M29010.
 - b) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - c) If the maintenance message does not show on the ground test display, you corrected the fault.
 - d) If the maintenance message shows on the ground test display, then continue.
 - (b) Replace the ADU 1 HEATER relay, K29021.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
 - (c) Replace the ADU C1 HEATER SENSOR relay, K29301.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASK 938

D633W103-ARO

Page 298.167
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- 3) If the maintenance message shows on the ground test display, then continue.
- (d) Replace the center-right hydraulic interface module (HYDIM-HCR), A4, in the right system cardfile (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
- 2) If the maintenance message does not show on the ground test display, you corrected the fault.
- 3) If the maintenance message shows on the ground test display, then continue.
- (e) Do this check of the wiring from the ADU C1 Heater Sensor relay to HYDIM:
 - 1) Remove the HYDIM-CR card, A4, in the right system cardfile (RSCF), P84, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801
 - 2) Remove the connector DK29301 from the ADU C1 Heater Sensor relay, K29301.
 - 3) Do a wiring check between pin C3 of connector DK29301 and pin 34 of connector XA4 at the RSCF, P84.
 - 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the HYDIM-CR card, A4, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801
 - c) Re-connect connector DK29301.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - f) If the maintenance message shows on the ground test display, then continue.
 - 5) If you do not find a problem with the wiring, then continue.
 - 6) Re-install the HYDIM-CR card, A4, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801
- (f) Do this check of the ADU C1 Heater Sensor relay wiring to the ADP 1 heater:
 - 1) Remove connector DM29010 from the ADP 1 heater, M29010.
 - 2) Do a wiring check between pin 2 of connector DM29010 and pin C1 of connector DK29301.
 - 3) Do a continuity check between pin 6 of connector DM29010 and structure ground.
 - 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM29010.
 - c) Re-connect connector DK29301.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).

EFFECTIVITY
ARO ALL

29-11 TASK 938

D633W103-ARO

Page 298.168
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- e) If the maintenance message does not show on the ground test display, you corrected the fault.
- f) If the maintenance message shows on the ground test display, then continue.
- 5) If you do not find a problem with the wiring, then continue.
- 6) Re-connect connector DM29010.
- (g) Do this check of the wiring from the ADU C1 Heater Sensor relay to the ADP 1 Heater at the ELMS P210 Panel.
 - 1) Remove connector DK29021 from the ADP 1 Heater relay, K29021.
 - 2) Do a wiring check between pin A1 of connector DK29021 and pin B1 of connector DK29301.
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DK29021.
 - c) Re-connect connector DK29301.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - f) If the maintenance message shows on the ground test display, then continue.
 - 4) If you do not find a problem with the wiring, then continue.
 - 5) Re-connect connector DK29021.
 - 6) Re-connect connector DK29301.
- (h) Do this check of the wiring from the ADU C1 Heater Sensor relay to the P310 Panel:
 - 1) Remove connector D31038 at the P310 Power Management Panel.
 - 2) Do a wiring check between pin 4 of connector D31038 and pin X1 of the ADU C1 Heater Sensor relay, K29301.
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector D31038.
 - c) Re-connect the ADU C1 Heater Sensor relay, K29301.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - f) If the maintenance message shows on the ground test display, then continue.
 - 4) If you do not find a problem with the wiring, then continue.
 - 5) Re-connect connector D31038.
 - 6) Re-connect the ADU C1 Heater Sensor relay, K29301.
- (i) Do this check of the power wiring:
 - 1) Do a check for 28 V DC from pin X1 of the ADP 1 Heater relay, K29021, to structure ground.

EFFECTIVITY
ARO ALL

29-11 TASK 938

D633W103-ARO

Page 298.169
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) If there is not 28 V DC at pin X1 of relay K29021, then do these steps:
 - a) Repair the wiring between pin X1 of relay K29021 and the load terminal of circuit breaker C29623.
 - b) Re-connect the ADU 1 Heater relay, K29021.
 - c) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - e) If the maintenance message shows on the ground test display, then continue.

————— **END OF TASK** —————

939. ADU 1 HTR ON Signal - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10006.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Heaters (RAT Generator, ADP C1, and ADP C2) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.
 - (a) If the maintenance messages related to the left ASG in the left cardfile and right ASG in the right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Heaters.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (b) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Heaters.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance messages related to the right ASG in the right cardfile and left ASG in the right cardfile show in Existing Faults, then do these steps:
 - 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Heaters.
 - 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (2) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

EFFECTIVITY
ARO ALL

29-11 TASKS 938-939

D633W103-ARO

Page 298.170
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
- 2) If the maintenance message shows on the ground test display, then continue.

————— **END OF TASK** —————

940. ADU 2 Heater Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10007.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT for these maintenance messages:
 - (a) 29-10252
 - (b) 29-10005
- (2) If both of the two maintenance messages specified above show in Existing Faults with the message 29-10007, then do these steps:
 - (a) Replace the center-left hydraulic interface module (HYDIM-HCL), A4, in the left system cardfile (LSCF), P85.

EFFECTIVITY
ARO ALL

29-11 TASKS 939-940

D633W103-ARO

Page 298.171
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
- (3) If only maintenance message 29-10252 appears with the message 29-10007 in Existing Faults, then do these steps:
- (a) Replace the RAT GEN HEATER relay, K29007.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
 - (b) Do this check of the power wiring:
 - 1) Do a check for 28 V DC from pin X1 of the RAT Gen/ADP 2 Heater Relay, K29007, to structure ground.
 - 2) If there is not 28 V DC at pin X1 of relay K29007, then do these steps:
 - a) Repair the wiring between pin X1 of relay K29007 and the load terminal of circuit breaker C29622.
 - b) Re-connect the RAT Gen/ADP 2 Heater Relay, K29007.
 - c) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - d) If the maintenance message does not show on the ground test display, you corrected the fault.
 - e) If the maintenance message shows on the ground test display, then continue.
 - 3) If there is 28 V DC at pin X1 of relay K29007, then continue:
 - 4) Re-connect the RAT Gen/ADP 2 Heater Relay, K29007.
- (4) If only the maintenance message 29-10005 appears with the message 29-10007 in Existing Faults, or the message 29-10007 appears alone, then do these steps:
- (a) Do a check of the ADP 2 Heater:
 - 1) Disconnect connector DM29011 from ADP 2 Heater, M29011.
 - 2) Do a continuity check between pins 6 and 1, pins 7 and 4, and pins 5 and 2 of the connector on the ADP 2 Heater, M29011.
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Replace the ADP 2 Heater, M29011.
- These are the tasks:
- Air-Driven Pump (ADP) Heater Removal, AMM TASK 29-11-18-000-801,
Air-Driven Pump (ADP) Heater Installation, AMM TASK 29-11-18-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 940

D633W103-ARO

Page 298.172
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- b) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
- c) If the maintenance message does not show on the ground test display, you corrected the fault.
- d) If the maintenance message shows on the ground test display, then continue.
- 4) If you do not find a problem with the wiring, then continue.
- (b) Replace the ADU C2 Heater Sensor relay, K29302.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
- (c) Replace the RAT Gen/ADP 2 Heater relay, K29007.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
- (d) Do this check of the wiring from the ADU C2 Heater Sensor relay to HYDIM:
 - 1) Remove the HYDIM-CL card, A4, in the LSCF, P85, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801
 - 2) Remove connector DK29302 from the ADU C1 Heater Sensor relay, K29302.
 - 3) Do a wiring check between pin C3 of connector DK29302 and pin 34 of connector XA4 at the LSCF, P85.
 - 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the HYDIM-CL card, A4, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801
 - c) Re-connect connector DK29302.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - f) If the maintenance message shows on the ground test display, then continue.
 - 5) If you do not find a problem with the wiring, then continue.
 - 6) Re-install the HYDIM-CL card, A4, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801
- (e) Do this check of the ADU C2 Heater Sensor relay wiring to the ADP 2 heater:
 - 1) Remove connector DM29011 from the ADP 2 heater, M29011.
 - 2) Do a wiring check between pin 2 of connector DM29011 and pin C1 of connector DK29302.
 - 3) Do a continuity check between pin 6 of connector DM29011 and structure ground.

EFFECTIVITY
ARO ALL

29-11 TASK 940

D633W103-ARO

Page 298.173
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DM29011.
 - c) Re-connect connector DK29302.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - f) If the maintenance message shows on the ground test display, then continue.
 - 5) If you do not find a problem with the wiring, then continue.
 - 6) Re-connect connector DM29011.
- (f) Do this check of the wiring from the ADU C2 Heater Sensor relay to the RAT Gen/ADP 2 Heater relay at the ELMS P210 Panel.
- 1) Remove connector DK29007 from the RAT Gen/ADP 2 Heater relay, K29007.
 - 2) Do a wiring check between pin B1 of connector DK29007 and B1 of connector DK29302.
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DK29007.
 - c) Re-connect connector DK29302.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - f) If the maintenance message shows on the ground test display, then continue.
 - 4) If you do not find a problem with the wiring, then continue.
 - 5) Re-connect connector DK29007.
 - 6) Re-connect connector DK29302.
- (g) Do this check of the wiring from the ADU C2 Heater Sensor relay to the P310 Panel:
- 1) Remove connector D31038 at the P310 Power Management Panel.
 - 2) Do a wiring check between pin 4 of connector D31038 and pin X1 of the ADU C2 Heater Sensor relay, K29302.
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector D31038.
 - c) Re-connect the ADU C2 Heater Sensor relay, K29302.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-11 TASK 940

D633W103-ARO

Page 298.174
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- f) If the maintenance message shows on the ground test display, then continue.

————— **END OF TASK** —————

941. Heat The RAT and ADP HTRS Signal Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10008.

B. Fault Isolation Procedure

NOTE: This message can only occur when you do the Air-Driven Pump (ADP) (C1) ground test on the MAT. It will occur if the ground test is failed. If the ground test is passed the maintenance message will not show on the ground test display.

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT.
- (a) If the maintenance messages related to the left ASG in the left cardfile and right ASG in the right cardfile show in Existing Faults, then do these steps:
- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (b) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the right cardfile show in Existing Faults, then do these steps:
- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (c) If the maintenance messages related to the right ASG in the left cardfile and left ASG in the left cardfile show in Existing Faults, then do these steps:
- 1) Find the maintenance message in the applicable FIM Maintenance Message Index.
 - 2) Do the specified task for the maintenance message.
 - 3) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).
- NOTE: Use an engine or the ground service cart to pressurize the pneumatic system. The APU does not provide the air flow necessary for the ADP test.
- 4) If the maintenance message does not show on the ground test display, you corrected the fault.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

EFFECTIVITY
ARO ALL

29-11 TASKS 940-941

D633W103-ARO

Page 298.175
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 2) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right systems card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, Operational Test, Air Driven Pump (ADP) (C1).

NOTE: Use an engine or the ground service cart to pressurize the pneumatic system.
The APU does not provide the air flow necessary for the ADP test.

- 1) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

942. Return Filter Module Differential Pressure Indicator - Fault Isolation

A. Description

- (1) The following indicator on the return filter module is in the extended position.
 - (a) bypass relief valve differential pressure indicator (left/center/right system)
 - (b) return filter differential pressure indicator (left/center/right system)

B. Fault Isolation Procedure

- (1) Inspect the differential pressure indicator for the applicable return filter module.
 - (a) Do this task: Differential Pressure Indicators for the Bypass Relief Valve and the Filter Element on the Return Filter Modules Inspection/Check, AMM TASK 29-11-00-200-802.

————— **END OF TASK** —————

943. Alternating Current Motor Pump (ACMP) Pressure and Case Drain Filter Module Differential Pressure Indicator - Fault Isolation

A. Description

- (1) The following differential pressure indicator on the ACMP pressure and case drain filter module is extended:
 - (a) pressure filter differential pressure indicator (left/center/right system)
 - (b) case drain filter differential pressure indicator (left/center/right system)

EFFECTIVITY
ARO ALL

29-11 TASKS 941-943

D633W103-ARO

Page 298.176
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Fault Isolation Procedure

- (1) Inspect the applicable differential pressure indicator on the ACMP pressure and case drain filter module.
 - (a) Do this task: Differential Pressure Indicators of the Alternating Current Motor Pumps (ACMPs) for the Pressure and Case Drain Filters Inspection/Check, AMM TASK 29-11-00-200-801.

————— END OF TASK —————

944. Air-Driven Pump (ADP) Pressure and Case Drain Filter Module Differential Pressure Indicator - Fault Isolation

A. Description

- (1) The following differential pressure indicator on the ADP pressure and case drain filter module is extended:
 - (a) pressure filter differential pressure indicator (C1/C2 system)
 - (b) case drain filter differential pressure indicator (C1/C2 system)

B. Fault Isolation Procedure

- (1) Inspect the applicable differential pressure indicator on the ADP pressure and case drain filter module.
 - (a) Do this task: Differential Pressure Indicators of the Air Driven Pumps (ADPs) for the Pressure and Case Drain Filters Inspection/Check, AMM TASK 29-11-00-200-808.

————— END OF TASK —————

945. Engine-Driven Pump (EDP) Pressure and Case Drain Filter Module Differential Pressure Indicator - Fault Isolation

A. Description

- (1) The following differential pressure indicator on the EDP pressure and case drain filter module is extended:
 - (a) pressure filter differential pressure indicator (Left/right system)
 - (b) case drain filter differential pressure indicator (left/right system)

B. Fault Isolation Procedure

- (1) Inspect the applicable differential pressure indicator on the EDP pressure and case drain filter module.
 - (a) Do this task: Differential Pressure Indicators of the Engine Driven Pumps (EDPs) for the Pressure and Case Drain Filters Inspection/Check, AMM TASK 29-11-00-200-807.

————— END OF TASK —————

946. Air-Drive Unit (ADU) Turbine Gearbox Assembly (TGA) Oil Filter Differential Pressure Indicator - Fault Isolation

A. Description

- (1) The differential pressure indicator on the ADU turbine gearbox assembly oil filter is in the extended position.

EFFECTIVITY
ARO ALL

29-11 TASKS 943-946

D633W103-ARO

Page 298.177
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Fault Isolation Procedure

- (1) Inspect the applicable differential pressure indicator on the ADU turbine gearbox assembly oil filter. To inspect it, do this task: Differential Pressure Indicators of the Air Driven Pumps (ADPs) for the Turbine Gearbox Assembly (TGA) Oil Filter Inspection/Check, AMM TASK 29-11-00-200-809.

————— END OF TASK —————

947. Right and Center System Hydraulic Reservoir Fluid Quantity - Fault Isolation

A. Description

- (1) The hydraulic fluid quantity indicator shows one of the following:
 - (a) The fluid quantity shows overfill for the right system reservoir and refill for the center system reservoir.
 - (b) The fluid quantity shows overfill for the center system reservoir and refill for the right system reservoir.
- (2) The sequence in which you pressurize or remove pressure from the hydraulic systems can cause a high fluid level in one system and a low fluid level in the other system.
 - (a) If you set the parking brake in one of the conditions below, and then release the brake with only the center system pressurized, the fluid can move to the center system:
 - 1) The right and center systems pressurized
 - 2) Only the right system pressurized
 - 3) No hydraulic system pressurized.
 - (b) If you set the parking brake with only the center system pressurized, and then release the brake in one of the conditions below, the fluid can move to the right system:
 - 1) The right and center systems pressurized
 - 2) Only the right system pressurized
 - 3) No hydraulic system pressurized.
 - (c) To keep the movement of the fluid between the right and center hydraulic systems to a minimum, the conditions which follow are important:
 - 1) Pressurize the right hydraulic system first.
 - 2) Remove the pressure from the right hydraulic system last.
 - (d) If either of the two conditions above occurred, then do the Fault Isolation Procedure - Pressurization/Depressurization Sequence below.
 - (e) If the two conditions above did not occur, then do the Fault Isolation Procedure - Component Leakage below.
- (3) The possible causes of fluid transfer that occurs under conditions other than those mentioned above are as follows:
 - (a) Possible sources for fluid leakage
 - 1) Leakage through the alternate ports of the antiskid shuttle valves
 - 2) Brake metering valve does not close fully
 - 3) Parking brake shutoff valve
 - 4) Return line check valves for the brake metering valves

EFFECTIVITY
ARO ALL

29-11 TASKS 946-947

D633W103-ARO

Page 298.178
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) Right hydraulic system return pressure greater than the center system return pressure

NOTE: If the fluid transfer occurs in flight after gear retract braking (shuttle valves in alternate position) it is possible that a difference in right and center system return pressure combined with internal leakage can cause a fluid transfer.

- 1) Right system reservoir relief valve stuck closed
 - 2) Right system return filter clogged
 - 3) A restriction exists in the right system return line
- (c) The center hydraulic return pressure can be low if:
- 1) Reservoir relief valve is stuck open
 - 2) Pneumatic reservoir pressurization module has a clogged filter
 - 3) Pneumatic reservoir pressurization module shutoff valve is closed
 - 4) Pressure relief valve in the return filter module is stuck open

B. Fault Isolation Procedure - Pressurization/Depressurization Sequence

- (1) Transfer an applicable quantity of hydraulic fluid between the right and center hydraulic reservoir. To transfer the hydraulic fluid, do this task: Hydraulic Fluid Transfer between the Right and Center Hydraulic Reservoir, AMM TASK 29-11-00-600-801.

C. Fault Isolation Procedure - Component Leakage

- (1) Depressurize the Right and Center Hydraulic Systems, do this task: Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807.
- (2) Disconnect alternate brake system (center) hydraulic lines at each end of left and right antiskid shuttle valve modules.
- (3) Pressurize the right hydraulic system, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801.
- (4) Apply and set the parking brake.
- (5) Do a check for high pressure leakage at the alternate brake ports of the antiskid shuttle valve modules:
 - (a) If there is leakage at the ports of the modules, then do these steps:
 - 1) Replace the pair of antiskid shuttle valves adjacent to module port where leakage occurs.

These are the tasks:
Antiskid Shuttle Valve Removal, AMM TASK 32-42-06-000-802,
Antiskid Shuttle Valve Installation, AMM TASK 32-42-06-400-802.
 - 2) Connect hydraulic lines to left and right modules.
 - 3) Service the center and right hydraulic systems, do this task: Hydraulic Reservoir Filling, AMM TASK 12-12-01-610-802.
 - (b) If there is not any leakage at the ports of the modules, then continue.
- (6) Depressurize the right hydraulic system with the right system reservoir pressurized, do this task: Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807.
- (7) Apply and set the parking brake.
- (8) Do a check for low pressure leakage at the alternate brake ports of the antiskid shuttle valve modules:

EFFECTIVITY
ARO ALL

29-11 TASK 947

D633W103-ARO

Page 298.179
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) If there is leakage at the ports of the modules, then do these steps:
- 1) Replace the pair of antiskid shuttle valves adjacent to module port where leakage occurs.
These are the tasks:
Antiskid Shuttle Valve Removal, AMM TASK 32-42-06-000-802,
Antiskid Shuttle Valve Installation, AMM TASK 32-42-06-400-802.
 - 2) Connect hydraulic lines to left and right modules.
 - 3) Service the center and right hydraulic systems, do this task: Hydraulic Reservoir Filling, AMM TASK 12-12-01-610-802.
- (b) If there is not any leakage at the ports of the modules and the fluid transfer did not occur in flight, then the system is normal.
NOTE: Fluid transfer between the right and the center hydraulic systems can occur due to the sequence of parking brake operation versus the sequence of hydraulic system pressurization/depressurization.
- 1) Do the fault isolation procedure - Pressurization/Depressurization Sequence
- (c) If there is not any leakage at the ports of the modules and the fluid transfer did occur in flight, then continue.
NOTE: Fluid transfer between the right and the center hydraulic systems can occur in flight after gear retract braking (shuttle valves in the alternate position) if there is a difference between the right and center hydraulic systems return pressures combined with internal leakage through the antiskid modules.
- (9) Connect hydraulic lines to left and right modules.
- (10) Service the center and right hydraulic systems, do this task: Hydraulic Reservoir Filling, AMM TASK 12-12-01-610-802.
- (11) Pressurize the right and center reservoirs, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801.
- (12) Set parking brake.
- (13) Depressurize the right hydraulic system, do this task: Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807.
- (14) Make sure the center hydraulic system is depressurized.
- (15) Do a check for loss of parking brake pressure and for an increase in center system quantity at the same time.
- (a) If there was a loss of parking brake pressure and an increase in the center system hydraulic quantity, then do these steps:
- 1) Do the Fault Isolation procedure - Pressurization/Depressurization Sequence
NOTE: Hydraulic fluid transfer occurs when the shuttle valves are in the normal position.
- (b) If there was not a loss of parking brake pressure and an increase in the center system hydraulic quantity, then continue.
NOTE: Hydraulic fluid transfer can occur in flight when the antiskid shuttle valves are in the alternate position. This can be caused by internal leakage or uncommanded brake pressure. Right system return pressure greater than center system return pressure. Antiskid shuttle valve leakage.
- (16) Do this check of the brake metering valves:

EFFECTIVITY
ARO ALL

29-11 TASK 947

D633W103-ARO

Page 298.180
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Slowly release the parking brakes.
 - (b) Do a check of the alignment of the rig pins for the left and right brake metering valve modules (AMM TASK 32-41-02-400-801).
 - (c) If the brake metering valves do not return to the off position, then do these steps:
 - 1) Check the cable system for too much friction.
 - 2) Replace the brake metering valve if required.These are the tasks:
 - Brake Metering Valve (Normal/Alternate) Removal, AMM TASK 32-41-02-000-801,
 - Brake Metering Valve (Normal/Alternate) Installation, AMM TASK 32-41-02-400-801.
 - (d) If the brake metering valves did return to the off position, then continue:
- (17) Make sure the right hydraulic system and reservoir are depressurized.
- (18) Replace these check valves:
- (a) Check valve in the right hydraulic system brake return lines in the tube connected to the "RET A" port of each brake metering valve. To replace the check valve do the applicable steps in the following procedure,
These are the tasks:
 - Brake Metering Valve (Normal/Alternate) Removal, AMM TASK 32-41-02-000-801,
 - Brake Metering Valve (Normal/Alternate) Installation, AMM TASK 32-41-02-400-801.
 - (b) Check valve in the autobrake return line in the tube connected to the autobrake module "RET" port.
 - (c) Check valve downstream of the parking brake valve in the tube connected to the parking brake valve "B" port. To replace the check valve do the applicable steps in the procedure that follows,
These are the tasks:
 - Parking Brake Valve Removal, AMM TASK 32-44-04-000-801,
 - Parking Brake Valve Installation, AMM TASK 32-44-04-400-801.
 - (d) If the hydraulic fluid transfer does not occur, then you corrected the fault.
 - (e) If the hydraulic fluid transfer does occur, then continue.
- (19) Do this check of the autobrake module:
- (a) Make sure the right hydraulic system and reservoir are depressurized.
 - (b) Disconnect the hydraulic line to the autobrake module "RET" port.
 - (c) Install a cap on the hydraulic line.
 - (d) Install a plug in the "RET" port and cap it.
 - (e) Pressurize the right hydraulic system, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801.
 - (f) Measure the leakage from the "BRAKE" port.
 - (g) If the brake port leaks more than 1CC/Minute, then do this step:
 - 1) Replace the autobrake module.These are the tasks:
 - Autobrake Valve Module Removal, AMM TASK 32-42-09-000-801,
 - Autobrake Valve Module Installation, AMM TASK 32-42-09-400-801.

EFFECTIVITY
ARO ALL

29-11 TASK 947

D633W103-ARO

Page 298.181
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (h) If the brake port does not leak more than 1CC/Minute, then continue.
- (20) Inspect the right hydraulic system return filter to see if it is clogged and creates high return pressure.
 - (a) If the right hydraulic system return filter is clogged then do this step:
 - 1) Replace the right hydraulic system return filter.

These are the tasks:
Left and Right System Return Filter Module and Components Removal, AMM TASK 29-11-44-000-801,
Left and Right System Return Filter Module and Components Installation, AMM TASK 29-11-44-400-801.
 - (b) If the right hydraulic system return filter is not clogged, then continue.
- (21) Inspect the center hydraulic system reservoir pressurization shutoff valve to see if it is blocked (AMM TASK 32-42-09-000-801).
 - (a) If the right hydraulic system reservoir pressurization shutoff valve is blocked, then do this step:
 - 1) Clean or if necessary replace the right hydraulic system reservoir pressurization shutoff valve.

These are the tasks:
Reservoir Pressurization Shutoff Valve Removal, AMM TASK 29-11-28-000-801,
Reservoir Pressurization Shutoff Valve Installation, AMM TASK 29-11-28-400-801.
 - (b) If the right hydraulic system return filter is not clogged, then continue.
- (22) Depressurize the right hydraulic system, do this task: Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807.
 - (a) Cycle the brake pedals to remove the pressure from the brake accumulators.
 - (b) Replace the antiskid shuttle valve modules.

These are the tasks:
Antiskid Shuttle Valve Removal, AMM TASK 32-42-06-000-802,
Antiskid Shuttle Valve Installation, AMM TASK 32-42-06-400-802.

————— **END OF TASK** —————

948. ELCU (HYD ACMP R) in P100 not in Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17005.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.

EFFECTIVITY
ARO ALL

29-11 TASKS 947-948

D633W103-ARO

Page 298.182
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Replace the right ACMP electrical load control unit (ELCU), M29203.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

- (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

- (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:

- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.

- (2) Replace the Power Panel Controller, M24500 in the P100 Power Panel-Left.

These are the tasks:

Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,

Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

- (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

- (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:

- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.

- (3) Do these wiring checks:

- (a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

- (b) Disconnect the connector DM29204A from the Alternating Current Motor Pump (ACMP)-Right, M29204.

- (c) Disconnect connector D10007 from the P100 Power Panel-Left.

- (d) Do a wiring check between these pins on connector DM29204A and the connector D10007.

EFFECTIVITY
ARO ALL

29-11 TASK 948

D633W103-ARO

Page 298.183
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

D10007

pin A pin A
pin B pin B
pin C pin C

DM29204A

- (e) Disconnect connector D10025 from the P100 Power Panel-Left.
- (f) Disconnect connector DM29004A from the Hyd/Rat Panel (P5), M29004.
- (g) Do a wiring check between these pins on connector DM29004A on the Hyd/Rat Panel (P5), M29004 and the connector D10025 on the P100 Power Panel-Left.

DM29004A

pin 22 pin 34

D10025

- (h) Do a check of the internal wiring between the Power Panel Controller, M24500 and the Electrical Load Control Unit (ELCU)-R, M29203 in the P100 Power Panel-Left (WDM 29-11-22).
- (i) If you find a problem with the wiring, repair the wiring.
- (j) Install these components removed for access:
 - 1) Connect the connector D10025 to the P100 Power Panel-Left.
 - 2) Connect the connector DM29004A to the Hyd/Rat Panel (P5), M29004.
 - 3) Connect the connector D10007 to the P100 Power Panel-Left.
 - 4) Connect the connector DM29204A to the Alternating Current Motor Pump (ACMP)-Right, M29204.

- (k) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

- (l) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (m) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (n) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Do a check of the Signal Interface Unit 1 (SIU1), M24504, in the left power management panel (LPMP) P110.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

EFFECTIVITY
ARO ALL

29-11 TASK 948

D633W103-ARO

Page 298.184
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (5) Do a check of the Computing and Communication Unit, M24502, in the left power management panel (LPMP) P110.

This is the task:

Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.

 - (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

949. ELCU (HYD ACMP C1) in P100 not in Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17006.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Replace the center 1 ACMP electrical load control unit (ELCU), M29303.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

- (a) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

EFFECTIVITY
ARO ALL

29-11 TASKS 948-949

D633W103-ARO

Page 298.185
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (2) Replace the Power Panel Controller, M24500 in the P100 Power Panel-Left.
- These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
- Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- (a) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (3) Do these wiring checks:

- (a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

- (b) Disconnect the connector DM29304A from the Alternating Current Motor Pump (ACMP)-Center 1, M29304.
- (c) Disconnect connector D10008 from the P100 Power Panel-Left.
- (d) Do a wiring check between these pins on connector DM29304A and the connector D10008.

D10008		DM29304A
pin A	.....	pin A
pin B	.....	pin B
pin C	.....	pin C

- (e) Disconnect connector D10025 from the P100 Power Panel-Left.
- (f) Disconnect connector DM29004A from the Hyd/Rat Panel (P5), M29004.
- (g) Do a wiring check between these pins on connector DM29004A on the Hyd/Rat Panel (P5), M29004 and the connector D10025 on the P100 Power Panel-Left.

DM29004A		D10025
pin 38	.....	pin 28

EFFECTIVITY
ARO ALL

29-11 TASK 949

D633W103-ARO

Page 298.186
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (h) Do a check of the internal wiring between the Power Panel Controller, M24500 and the Electrical Load Control Unit (ELCU)-C1, M29303 in the P100 Power Panel-Left (WDM 29-11-31).
- (i) If you find a problem with the wiring, repair the wiring.
- (j) Install these components removed for access:
 - 1) Connect the connector D10025 to the P100 Power Panel-Left.
 - 2) Connect the connector DM29004A to the Hyd/Rat Panel (P5), M29004.
 - 3) Connect the connector D10008 to the P100 Power Panel-Left.
 - 4) Connect the connector DM29304A to the Alternating Current Motor Pump (ACMP)-Center 1, M29304.
- (k) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

- (l) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (m) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (n) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Do a check of the Signal Interface Unit 2 (SIU2), M24505, in the left power management panel (LPMP) P110.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

- (a) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (5) Do a check of the Computing and Communication Unit, M24502, in the left power management panel (LPMP) P110.

This is the task:

Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.

- (a) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

EFFECTIVITY
ARO ALL

29-11 TASK 949

D633W103-ARO

Page 298.187
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

950. ELCU (HYD ACMP L) in P200 not in Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17007.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Replace the left ACMP electrical load control unit (ELCU), M29103.
These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (2) Replace the Power Panel Controller, M24501 in the P200 Power Panel-Right.
These are the tasks:
Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
 - (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

EFFECTIVITY
ARO ALL

29-11 TASKS 949-950

D633W103-ARO

Page 298.188
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (3) Do these wiring checks:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

- (b) Disconnect the connector DM29104A from the Alternating Current Motor Pump (ACMP)-Left, M29104.
- (c) Disconnect connector D20007 from the P200 Power Panel-Right.
- (d) Do a wiring check between these pins on connector DM29104A and the connector D20007.

D20007		DM29104A
pin A	.....	pin A
pin B	.....	pin B
pin C	.....	pin C

- (e) Disconnect connector D20025 from the P200 Power Panel-Right.
- (f) Disconnect connector DM29004B from the Hyd/Rat Panel (P5), M29004.
- (g) Do a wiring check between these pins on connector DM29004B on the Hyd/Rat Panel (P5), M29004 and the connector D20025 on the P200 Power Panel-Right.

DM29004B		D20025
pin 22	.....	pin 34

- (h) Do a check of the internal wiring between the Power Panel Controller, M24501 and the Electrical Load Control Unit (ELCU)-L, M29103 in the P200 Power Panel-Right (WDM 29-11-12).
- (i) If you find a problem with the wiring, repair the wiring.
- (j) Install these components removed for access:
 - 1) Connect the connector D20025 to the P200 Power Panel-Right.
 - 2) Connect the connector DM29004B to the Hyd/Rat Panel (P5), M29004.
 - 3) Connect the connector D20007 to the P200 Power Panel-Right.
 - 4) Connect the connector DM29104A to the Alternating Current Motor Pump (ACMP)-Left, M29104.

- (k) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

EFFECTIVITY
ARO ALL

29-11 TASK 950

D633W103-ARO

Page 298.189
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (l) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (m) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (n) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Do a check of the Signal Interface Unit 1 (SIU1), M24508, in the right power management panel (RPMP) P210.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (5) Do a check of the Computing and Communication Unit, M24506, in the right power management panel (RPMP) P210.
- This is the task:
- Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

951. ELCU (HYD ACMP C2) in P200 not in Commanded Position - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17008.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASKS 950-951

D633W103-ARO

Page 298.190
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Replace the center 2 electrical load control unit (ELCU), M29308.

These are the tasks:

ELCU Removal, AMM TASK 24-51-05-000-801,

ELCU Installation, AMM TASK 24-51-05-400-801.

- (a) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (2) Replace the Power Panel Controller, M24501 in the P200 Power Panel-Right.

These are the tasks:

Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,

Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

 - (a) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (3) Do these wiring checks:
 - (a) Open this circuit breaker and install safety tag:
Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL
 - (b) Disconnect the connector DM29311A from the Alternating Current Motor Pump (ACMP)-Center 2, M29311.

EFFECTIVITY
ARO ALL

29-11 TASK 951

D633W103-ARO

Page 298.191
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) Disconnect connector D20008 from the P200 Power Panel-Right.
- (d) Do a wiring check between these pins on connector DM29311A and the connector D20008.

D20008	DM29311A
pin A	pin A
pin B	pin B
pin C	pin C

- (e) Disconnect connector D20025 from the P200 Power Panel-Right.
- (f) Disconnect connector DM29004B from the Hyd/Rat Panel (P5), M29004.
- (g) Do a wiring check between these pins on connector DM29004B on the Hyd/Rat Panel (P5), M29004 and the connector D20025 on the P200 Power Panel-Right.

DM29004B	D20025
pin 38	pin 28

- (h) Do a check of the internal wiring between the Power Panel Controller, M24501 and the Electrical Load Control Unit (ELCU)-C2, M29308 in the P200 Power Panel-Right (WDM 29-11-32).
- (i) If you find a problem with the wiring, repair the wiring.
- (j) Install these components removed for access:
 - 1) Connect the connector D20025 to the P200 Power Panel-Right.
 - 2) Connect the connector DM29004B to the Hyd/Rat Panel (P5), M29004.
 - 3) Connect the connector D20008 to the P200 Power Panel-Right.
 - 4) Connect the connector DM29311A to the Alternating Current Motor Pump (ACMP)-Center 2, M29311.
- (k) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL

- (l) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (m) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (n) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Do a check of the Signal Interface Unit 2 (SIU2), M24509, in the right power management panel (RPMP) P210.

This is the task:

Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

EFFECTIVITY
ARO ALL

29-11 TASK 951

D633W103-ARO

Page 298.192
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (c) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (5) Do a check of the Computing and Communication Unit, M24506, in the right power management panel (RPMP) P210.
- This is the task:
- Computing and Communication Unit - Exchange Check, AMM TASK 24-09-00-700-802-002.
- (a) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

END OF TASK

952. P200 Power Panel Controller HYD ACMP C2 function is disabled - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17009.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Replace the Power Panel Controller, M24501 in the P200 Power Panel-Right.
- These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
- Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

EFFECTIVITY
ARO ALL

29-11 TASKS 951-952

D633W103-ARO

Page 298.193
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task:
ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (2) Replace the center 2 electrical load control unit (ELCU), M29308.
- These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task:
ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task:
ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Do these wiring checks:

EFFECTIVITY
ARO ALL

29-11 TASK 952

D633W103-ARO

Page 298.194
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL

- (b) Disconnect the connector DM29311A from the Alternating Current Motor Pump (ACMP)-Center 2, M29311.
- (c) Disconnect connector D20008 from the P200 Power Panel-Right.
- (d) Do a wiring check between these pins on connector DM29311A and the connector D20008.

D20008	DM29311A
pin A	pin A
pin B	pin B
pin C	pin C

- (e) Disconnect connector D20025 from the P200 Power Panel-Right.
- (f) Disconnect connector DM29004B from the Hyd/Rat Panel (P5), M29004.
- (g) Do a wiring check between these pins on connector DM29004B on the Hyd/Rat Panel (P5), M29004 and the connector D20025 on the P200 Power Panel-Right.

DM29004B	D20025
pin 38	pin 28

- (h) Do a check of the internal wiring between the Power Panel Controller, M24501 and the Electrical Load Control Unit (ELCU)-C2, M29308 in the P200 Power Panel-Right (WDM 29-11-32).
- (i) Do a check of the internal wiring between the Power Panel Controller, M24501 and the connector D20025 on the P200 Power Panel-Right (WDM 29-11-32).
- (j) Do a check of the internal wiring between the Power Panel Controller, M24501 and the connector D20025P on the P200 Power Panel-Right (WDM 29-11-32).
- (k) If you find a problem with the wiring, repair the wiring.
- (l) Install these components removed for access:
- 1) Connect the connector D20025 to the P200 Power Panel-Right.
 - 2) Connect the connector DM29004B to the Hyd/Rat Panel (P5), M29004.
 - 3) Connect the connector D20008 to the P200 Power Panel-Right.
 - 4) Connect the connector DM29311A to the Alternating Current Motor Pump (ACMP)-Center 2, M29311.
- (m) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL

- (n) Do the self-test for the P210 Right Power Management Panel. To do this, do this task:
ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.

EFFECTIVITY
ARO ALL

29-11 TASK 952

D633W103-ARO

Page 298.195
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (o) Pressurize the center hydraulic system with the center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (p) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

953. P100 Power Panel Controller HYD ACMP C1 function is disabled - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17010.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Replace the Power Panel Controller, M24500 in the P100 Power Panel-Left.
These are the tasks:
Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
 - (a) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (2) Replace the center 1 electrical load control unit (ELCU), M29303.
These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,

EFFECTIVITY
ARO ALL

29-11 TASKS 952-953

D633W103-ARO

Page 298.196
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

ELCU Installation, AMM TASK 24-51-05-400-801.

- (a) Do the self-test for the P110 Left Power Management Panel. To do this, do this task:
ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do the self-test for the P110 Left Power Management Panel. To do this, do this task:
ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Do these wiring checks:
- (a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

- (b) Disconnect the connector DM29304A from the Alternating Current Motor Pump (ACMP)-Center 1, M29304.
- (c) Disconnect connector D10008 from the P100 Power Panel-Left.
- (d) Do a wiring check between these pins on connector DM29304A and the connector D10008.

D10008		DM29304A
pin A	.....	pin A
pin B	.....	pin B
pin C	.....	pin C

- (e) Disconnect connector D10025 from the P100 Power Panel-Left.
- (f) Disconnect connector DM29004A from the Hyd/Rat Panel (P5), M29004.

EFFECTIVITY
ARO ALL

29-11 TASK 953

D633W103-ARO

Page 298.197
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

- (g) Do a wiring check between these pins on connector DM29004A on the Hyd/Rat Panel (P5), M29004 and the connector D10025 on the P100 Power Panel-Left.

DM29004A	D10025
pin 38	pin 28

- (h) Do a check of the internal wiring between the Power Panel Controller, M24500 and the Electrical Load Control Unit (ELCU)-C1, M29303 in the P100 Power Panel-Left (WDM 29-11-31).
- (i) Do a check of the internal wiring between the Power Panel Controller, M24500 and the connector D10025 on the P100 Power Panel-Left (WDM 29-11-31).
- (j) Do a check of the internal wiring between the Power Panel Controller, M24500 and the connector D10025P on the P100 Power Panel-Left (WDM 29-11-31).
- (k) If you find a problem with the wiring, repair the wiring.
- (l) Install these components removed for access:
- 1) Connect the connector D10025 to the P100 Power Panel-Left.
 - 2) Connect the connector DM29004A to the Hyd/Rat Panel (P5), M29004.
 - 3) Connect the connector D10008 to the P100 Power Panel-Left.
 - 4) Connect the connector DM29304A to the Alternating Current Motor Pump (ACMP)-Center 1, M29304.
- (m) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

- (n) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (o) Pressurize the center hydraulic system with the center 1 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (p) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

954. P100 Power Panel Controller HYD ACMP R function is disabled - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17011.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:

EFFECTIVITY
ARO ALL

29-11 TASKS 953-954

D633W103-ARO

Page 298.198
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Replace the Power Panel Controller, M24500 in the P100 Power Panel-Left.

These are the tasks:

Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,

Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

- (a) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (2) Replace the right electrical load control unit (ELCU), M29203.
- These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
- ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24504, in the P110 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.

EFFECTIVITY
ARO ALL

29-11 TASK 954

D633W103-ARO

Page 298.199
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the right hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Do these wiring checks:
- (a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

- (b) Disconnect the connector DM29204A from the Alternating Current Motor Pump (ACMP)-Right, M29204.
- (c) Disconnect connector D10007 from the P100 Power Panel-Left.
- (d) Do a wiring check between these pins on connector DM29204A and the connector D10007.

D10007	DM29204A
pin A	pin A
pin B	pin B
pin C	pin C

- (e) Disconnect connector D10025 from the P100 Power Panel-Left.
- (f) Disconnect connector DM29004A from the Hyd/Rat Panel (P5), M29004.
- (g) Do a wiring check between these pins on connector DM29004A on the Hyd/Rat Panel (P5), M29004 and the connector D10025 on the P100 Power Panel-Left.

DM29004A	D10025
pin 22	pin 34

- (h) Do a check of the internal wiring between the Power Panel Controller, M24500 and the Electrical Load Control Unit (ELCU)-R, M29203 in the P100 Power Panel-Left (WDM 29-11-22).
- (i) Do a check of the internal wiring between the Power Panel Controller, M24500 and the connector D10025 on the P100 Power Panel-Left (WDM 29-11-22).
- (j) Do a check of the internal wiring between the Power Panel Controller, M24500 and the connector D10025P on the P100 Power Panel-Left (WDM 29-11-22).
- (k) If you find a problem with the wiring, repair the wiring.
- (l) Install these components removed for access:
 - 1) Connect the connector D10025 to the P100 Power Panel-Left.

EFFECTIVITY
ARO ALL

29-11 TASK 954

D633W103-ARO

Page 298.200
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) Connect the connector DM29004A to the Hyd/Rat Panel (P5), M29004.
 - 3) Connect the connector D10007 to the P100 Power Panel-Left.
 - 4) Connect the connector DM29204A to the Alternating Current Motor Pump (ACMP)-Right, M29204.
- (m) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

- (n) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (o) Pressurize the center hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (p) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

955. P200 Power Panel Controller HYD ACMP L function is disabled - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17024.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

C. Fault Isolation Procedure

- (1) Replace the Power Panel Controller, M24501 in the P200 Power Panel-Right.
- These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.

EFFECTIVITY
ARO ALL

29-11 TASKS 954-955

D633W103-ARO

Page 298.201
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (2) Replace the left electrical load control unit (ELCU), M29103.
- These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task:
ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (3) Do a check of the Signal Interface Unit (1), M24508, in the P210 panel.
- This is the task:
- Signal Interface Unit - Exchange Check, AMM TASK 24-09-00-700-801-002.
- (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task:
ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the left hydraulic system with the left ACMP. To pressurize it, do this task:
Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (4) Do these wiring checks:
- (a) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

EFFECTIVITY
ARO ALL

29-11 TASK 955

D633W103-ARO

Page 298.202
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) Disconnect the connector DM29104A from the Alternating Current Motor Pump (ACMP)-Left, M29104.
- (c) Disconnect connector D20007 from the P200 Power Panel-Right.
- (d) Do a wiring check between these pins on connector DM29104A and the connector D20007.

D20007	DM29104A
pin A	pin A
pin B	pin B
pin C	pin C

- (e) Disconnect connector D20025 from the P200 Power Panel-Right.
- (f) Disconnect connector DM29004B from the Hyd/Rat Panel (P5), M29004.
- (g) Do a wiring check between these pins on connector DM29004B on the Hyd/Rat Panel (P5), M29004 and the connector D20025 on the P200 Power Panel-Right.

DM29004B	D20025
pin 22	pin 34

- (h) Do a check of the internal wiring between the Power Panel Controller, M24501 and the Electrical Load Control Unit (ELCU)-L, M29103 in the P200 Power Panel-Right (WDM 29-11-12).
- (i) Do a check of the internal wiring between the Power Panel Controller, M24501 and the connector D20025 on the P200 Power Panel-Right (WDM 29-11-12).
- (j) Do a check of the internal wiring between the Power Panel Controller, M24501 and the connector D20025P on the P200 Power Panel-Right (WDM 29-11-12).
- (k) If you find a problem with the wiring, repair the wiring.
- (l) Install these components removed for access:
 - 1) Connect the connector D20025 to the P200 Power Panel-Right.
 - 2) Connect the connector DM29004B to the Hyd/Rat Panel (P5), M29004.
 - 3) Connect the connector D20007 to the P200 Power Panel-Right.
 - 4) Connect the connector DM29104A to the Alternating Current Motor Pump (ACMP)-Left, M29104.

- (m) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

- (n) Do the self-test for the P210 Right Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (o) Pressurize the left hydraulic system with the Left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (p) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:

EFFECTIVITY
ARO ALL

29-11 TASK 955

D633W103-ARO

Page 298.203
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— **END OF TASK** —————

956. Left ACMP Ground Fault has Tripped - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17020.

B. Possible Causes

- (1) Alternating Current Motor Pump (ACMP)-Left, M29104.
- (2) Power Panel Controller, M24501
- (3) Wiring

C. Circuit Breaker

- (1) This is the primary circuit breaker related to the fault:
Make sure that this circuit breaker is closed:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

D. Related Data

- (1) (SSM 29-11-12)
- (2) (WDM 29-11-12)

E. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the main hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

F. Fault Isolation Procedure

- (1) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

- (2) Disconnect the connector DM29104A from the Alternating Current Motor Pump (ACMP)-Left, M29104.
- (3) Go to MAT and command a HYD DEM L GND FAULT reset.

EFFECTIVITY
ARO ALL

29-11 TASKS 955-956

D633W103-ARO

Page 298.204
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (4) Connect the connector DM29104A to the Alternating Current Motor Pump (ACMP)-Left, M29104.
- (5) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

- (6) Pressurize the main hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (7) Replace the Left System Alternating Current Motor Pump (ACMP), M29104. These are the tasks:

Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801

Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801

 - (a) Do these tests for the Left ACMP Ground Fault Protection system and ACMP operation:

Ground Fault Protection for the Alternating Current Motor Pumps (ACMP) Left or Right - System Test, AMM TASK 29-11-00-730-806.

Left and Right System Alternating Current Motor Pumps (ACMP) - Operational Test, AMM TASK 29-11-00-730-801.
 - (b) Pressurize the main hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (8) Replace the Power Panel Controller, M24501 in the P200 Power Panel-Right.

These are the tasks:

Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,

Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.

 - (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the main hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.

EFFECTIVITY
ARO ALL

29-11 TASK 956

D633W103-ARO

Page 298.205
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (9) Replace the Electrical Load Control Unit (ELCU)-L, M29103 in the P200 Power Panel-Right. These are the tasks:
ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
 - (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the main hydraulic system with the left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (10) Do these wiring checks:

- (a) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

- (b) Disconnect the connector DM29104A from the Alternating Current Motor Pump (ACMP)-Left, M29104.
- (c) Disconnect connector D20007 from the P200 Power Panel-Right.
- (d) Do a wiring check between these pins on connector DM29104A and the connector D20007.

D20007		DM29104A
pin A	.....	pin A
pin B	.....	pin B
pin C	.....	pin C

- (e) Do a check of the internal wiring between the Power Panel Controller, M24501 and the Electrical Load Control Unit (ELCU)-L, M29103 in the P200 Power Panel-Right (WDM 29-11-12).
- (f) Do a check of the internal wiring between the Power Panel Controller, M24501 and the current transformer (CT), M24516 in the P200 Power Panel-Right (WDM 29-11-12).
- (g) Do a check of the internal wiring between the Power Panel Controller, M24501 and the connector D20025 on the P200 Power Panel-Right (WDM 29-11-12).

EFFECTIVITY
ARO ALL

29-11 TASK 956

D633W103-ARO

Page 298.206
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (h) Do a check of the internal wiring between the Power Panel Controller, M24501 and the connector D20025P on the P200 Power Panel-Right (WDM 29-11-12).
- (i) If you find a problem with the wiring, repair the wiring.
- (j) Install these components removed for access:
 - 1) Connect the connector D20007 to the P200 Power Panel-Right.
 - 2) Connect the connector DM29104A to the Alternating Current Motor Pump (ACMP)-Left, M29104.
- (k) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	4	C29605	L HYD PUMP CTRL

- (l) Do the self-test for the P210 Right Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (m) Pressurize the main hydraulic system with the Left ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (n) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

END OF TASK

957. Right ACMP Ground Fault has Tripped - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17021.

B. Possible Causes

- (1) Alternating Current Motor Pump (ACMP)-Right, M29204.
- (2) Power Panel Controller, M24500
- (3) Wiring

C. Circuit Breaker

- (1) This is the primary circuit breaker related to the fault:
Make sure that this circuit breaker is closed:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

D. Related Data

- (1) (SSM 29-11-22)
- (2) (WDM 29-11-22)

EFFECTIVITY
ARO ALL

29-11 TASKS 956-957

D633W103-ARO

Page 298.207
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

E. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the main hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

F. Fault Isolation Procedure

- (1) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

- (2) Disconnect the connector DM29204A from the Alternating Current Motor Pump (ACMP)-Right, M29204.
- (3) Go to MAT and command a HYD DEM R GND FAULT reset.
- (4) Connect the connector DM29204A to the Alternating Current Motor Pump (ACMP)-Right, M29204.
- (5) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

- (6) Pressurize the main hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (7) Replace the Right System Alternating Current Motor Pump (ACMP), M29204. These are the tasks:
Left and Right System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-01-000-801
Left and Right System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-01-400-801
 - (a) Do these tests for the Right ACMP Ground Fault Protection system and ACMP operation:

EFFECTIVITY
ARO ALL

29-11 TASK 957

D633W103-ARO

Page 298.208
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Ground Fault Protection for the Alternating Current Motor Pumps (ACMP) Left or Right - System Test, AMM TASK 29-11-00-730-806.

Left and Right System Alternating Current Motor Pumps (ACMP) - Operational Test, AMM TASK 29-11-00-730-801.

- (b) Pressurize the main hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (8) Replace the Power Panel Controller, M24500 in the P100 Power Panel-Left. These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- (a) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the main hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (9) Replace the Electrical Load Control Unit (ELCU)-R, M29203 in the P100 Power Panel-Left. These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
 - (b) Pressurize the main hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (10) Do these wiring checks:

EFFECTIVITY
ARO ALL

29-11 TASK 957

D633W103-ARO

Page 298.209
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

- (b) Disconnect the connector DM29204A from the Alternating Current Motor Pump (ACMP)-Right, M29204.
- (c) Disconnect connector D10007 from the P100 Power Panel-Left.
- (d) Do a wiring check between these pins on connector DM29204A and the connector D10007.

D10007	DM29204A
pin A	pin A
pin B	pin B
pin C	pin C

- (e) Do a check of the internal wiring between the Power Panel Controller, M24500 and the Electrical Load Control Unit (ELCU)-R, M29203 in the P100 Power Panel-Left (WDM 29-11-22).
- (f) Do a check of the internal wiring between the Power Panel Controller, M24500 and the current transformer (CT), M24514 in the P100 Power Panel-Left (WDM 29-11-22).
- (g) Do a check of the internal wiring between the Power Panel Controller, M24500 and the connector D10025 on the P100 Power Panel-Left (WDM 29-11-22).
- (h) Do a check of the internal wiring between the Power Panel Controller, M24500 and the connector D10025P on the P100 Power Panel-Left (WDM 29-11-22).
- (i) If you find a problem with the wiring, repair the wiring.
- (j) Install these components removed for access:
- 1) Connect the connector D10007 to the P100 Power Panel-Left.
 - 2) Connect the connector DM29204A to the Alternating Current Motor Pump (ACMP)-Right, M29204.
- (k) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	19	C29604	R HYD PUMP CTRL

- (l) Do the self-test for the P110 Left Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (m) Pressurize the main hydraulic system with the right ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (n) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

EFFECTIVITY
ARO ALL

29-11 TASK 957

D633W103-ARO

Page 298.210
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

958. **C1 ACMP Ground Fault has Tripped - Fault Isolation**

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17022.

B. Possible Causes

- (1) Center 1 ACMP, M29304
(2) Power Panel Controller, M24500
(3) Wiring

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

D. Related Data

- (1) SSM 29-11-31
(2) WDM 29-11-31

E. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
- (a) Pressurize the Center Hydraulic System with the Center 1 ACMP. This is the task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- 1) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent problem. Do this step to complete the task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

- (2) Disconnect the connector D10008P from the Center 1 ACMP, M29304 (WDM 29-11-31).
- (3) Go to MAT and command a HYD PRI C1 GND FAULT reset.
- (4) Connect the connector D10008P to the Center 1 ACMP, M29304.
- (5) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

EFFECTIVITY
ARO ALL

29-11 TASK 958

D633W103-ARO

Page 298.211
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

- (6) Do the Repair Confirmation at the end of this task.
- (7) Replace the Center 1 ACMP, M29304. These are the tasks:
 - Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801
 - Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801
- (a) Do these tests for the Center 1 ACMP Ground Fault Protection System and ACMP Operation:
 - Ground Fault Protection for the Alternating Current Motor Pumps (ACMP) C1 or C2 - System Test, AMM TASK 29-11-00-730-805
 - Center System Alternating Current Motor Pumps (ACMP) - Operational Test, AMM TASK 29-11-00-710-803
- (b) Do the Repair Confirmation at the end of this task.
- (8) Replace the Power Panel Controller, M24500 in the P100 Power Panel-Left. These are the tasks:
 - Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002
 - Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002
- (a) Do the self-test for the P110 Left Power Management Panel. This is the task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (b) Do the Repair Confirmation at the end of this task.
- (9) Replace the Electrical Load Control Unit (ELCU)-C1, M29303 in the P100 Power Panel-Left. These are the tasks:
 - ELCU Removal, AMM TASK 24-51-05-000-801
 - ELCU Installation, AMM TASK 24-51-05-400-801
- (a) Do the self-test for the P110 Left Power Management Panel. This is the task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (b) Do the Repair Confirmation at the end of this task.
- (10) Do these wiring checks (WDM 29-11-31):
 - (a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

- (b) Disconnect the connector DM29304A from the Center 1 ACMP, M29304.
- (c) Disconnect connector D10008 from the P100 Power Panel-Left.
- (d) Do a wiring check between these pins on connector DM29304A and the connector D10008.

D10008		DM29304A
pin A	.....	pin A
pin B	.....	pin B
pin C	.....	pin C

EFFECTIVITY
ARO ALL

29-11 TASK 958

D633W103-ARO

Page 298.212
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (e) Do a check of the internal wiring between the Power Panel Controller, M24500 and the C1 ELCU, M29303 in the P100 Power Panel-Left (WDM 29-11-31).
- (f) Do a check of the internal wiring between the Power Panel Controller, M24500 and the Current Transformer (CT), M24515 in the P100 Power Panel-Left (WDM 29-11-31).
- (g) Do a check of the internal wiring between the Power Panel Controller, M24500 and the connector D10025 on the P100 Power Panel-Left (WDM 29-11-31).
- (h) Do a check of the internal wiring between the Power Panel Controller, M24500 and the connector D10025P on the P100 Power Panel-Left (WDM 29-11-31).
- (i) Repair the wiring problems that you find.
- (j) Connect the connector D10008 to the P100 Power Panel-Left.
- (k) Connect the connector DM29304A to the Center 1 ACMP, M29304.
- (l) Remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
M	28	C29607	C1 HYD PUMP CTRL

- (m) Do the self-test for the P110 Left Power Management Panel. This is the task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (n) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Pressurize the Main Hydraulic System with the Center 1 ACMP. This is the task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the problem. Do this step to complete the task:
 - 1) Remove Hydraulic Power to complete the task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

959. C2 ACMP Ground Fault has Tripped - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-17023.

B. Possible Causes

- (1) Alternating Current Motor Pump (ACMP)-Center 2, M29311.
- (2) Power Panel Controller, M24501
- (3) Wiring

C. Circuit Breaker

- (1) This is the primary circuit breaker related to the fault:

EFFECTIVITY
ARO ALL

29-11 TASKS 958-959

D633W103-ARO

Page 298.213
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

Make sure that this circuit breaker is closed:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL

D. Related Data

- (1) (SSM 29-11-32)
- (2) (WDM 29-11-32)

E. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do these steps:
 - (a) Pressurize the main hydraulic system with the Center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then do the Fault Isolation Procedure below.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

F. Fault Isolation Procedure

- (1) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL

- (2) Disconnect the connector DM29311A from the Alternating Current Motor Pump (ACMP)-Center 2, M29311.
- (3) Go to MAT and command a HYD PRI C2 GND FAULT reset.
- (4) Connect the connector DM29311A to the Alternating Current Motor Pump (ACMP)-Center 2, M29311.
- (5) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL

- (6) Pressurize the main hydraulic system with the Center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (a) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

EFFECTIVITY
ARO ALL

29-11 TASK 959

D633W103-ARO

Page 298.214
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (7) Replace the Center 2 System Alternating Current Motor Pump (ACMP), M29311. These are the tasks:
- Center System Alternating Current Motor Pump (ACMP) Removal, AMM TASK 29-11-02-000-801
- Center System Alternating Current Motor Pump (ACMP) Installation, AMM TASK 29-11-02-400-801
- (a) Do these tests for the Center 2 ACMP Ground Fault Protection system and ACMP operation:
- Ground Fault Protection for the Alternating Current Motor Pumps (ACMP) C1 or C2 - System Test, AMM TASK 29-11-00-730-805.
- Center System Alternating Current Motor Pumps (ACMP) - Operational Test, AMM TASK 29-11-00-710-803.
- (b) Pressurize the main hydraulic system with the Center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (8) Replace the Power Panel Controller, M24501 in the P200 Power Panel-Right. These are the tasks:
- Power Panel Controller - Removal, AMM TASK 24-09-00-000-816-002,
- Power Panel Controller - Installation, AMM TASK 24-09-00-400-812-002.
- (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (b) Pressurize the main hydraulic system with the Center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
- 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (9) Replace the Electrical Load Control Unit (ELCU)-C2, M29308 in the P200 Power Panel-Right. These are the tasks:
- ELCU Removal, AMM TASK 24-51-05-000-801,
- ELCU Installation, AMM TASK 24-51-05-400-801.
- (a) Do the self-test for the P210 Right Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.

EFFECTIVITY
ARO ALL

29-11 TASK 959

D633W103-ARO

Page 298.215
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (b) Pressurize the main hydraulic system with the Center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
 - (d) If the MAT shows ACTIVE or LATCHED for the maintenance message after 20 seconds, then continue.
- (10) Do these wiring checks:
- (a) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL

- (b) Disconnect the connector DM29311A from the Alternating Current Motor Pump (ACMP)-Center 2, M29311.
- (c) Disconnect connector D20008 from the P200 Power Panel-Right.
- (d) Do a wiring check between these pins on connector DM29311A and the connector D20008.

D20008		DM29311A
pin A	.....	pin A
pin B	.....	pin B
pin C	.....	pin C

- (e) Do a check of the internal wiring between the Power Panel Controller, M24501 and the Electrical Load Control Unit (ELCU)-C2, M29308 in the P200 Power Panel-Right (WDM 29-11-32).
- (f) Do a check of the internal wiring between the Power Panel Controller, M24501 and the connector D20025 on the P200 Power Panel-Right (WDM 29-11-32).
- (g) Do a check of the internal wiring between the Power Panel Controller, M24501 and the current transformer (CT), M24517 in the P200 Power Panel-Right (WDM 29-11-32).
- (h) Do a check of the internal wiring between the Power Panel Controller, M24501 and the connector D20025P on the P200 Power Panel-Right (WDM 29-11-32).
- (i) If you find a problem with the wiring, repair the wiring.
- (j) Install these components removed for access:
 - 1) Connect the connector D20008 to the P200 Power Panel-Right.
 - 2) Connect the connector DM29311A to the Alternating Current Motor Pump (ACMP)-Center 2, M29311.
- (k) Remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	5	C29608	C2-HYD PUMP CTRL

EFFECTIVITY
ARO ALL

29-11 TASK 959

D633W103-ARO

Page 298.216
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (l) Do the self-test for the P210 Right Power Management Panel. To do this, do this task: ELMS Power Management Panel - System Test, AMM TASK 24-09-00-730-801.
- (m) Pressurize the main hydraulic system with the Center 2 ACMP. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
- (n) If the MAT shows NOT ACTIVE for the maintenance message after 20 seconds, you corrected the fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.

————— END OF TASK —————

960. Reservoir Fluid Quantity Problems - Fault Isolation

A. Description

- (1) This procedure can be used to look for hydraulic leaks inside the fuel tanks when the following conditions occur:
 - (a) A hydraulic system has required repeated servicing because of a low reservoir condition.
 - (b) The hydraulic fluid level decreases quickly and the external hydraulic leakage is within the maintenance limits.
- (2) This procedure is applicable only after the following check has been unsuccessful in isolating the source of hydraulic fluid leaks:
 - (a) External hydraulic leakage check (Main Hydraulic Systems External Leakage Check, AMM TASK 29-11-00-200-804).
- (3) This procedure is not intended to troubleshoot for the transfer of hydraulic fluid from one system to another system.
- (4) The presence of hydraulic fluid in the fuel tanks can be from leakage at the hydraulic fluid heat exchangers, the associated heat exchanger tubing or various flight control or brake system pressure hydraulic tubing that is contained in the tanks.
- (5) The heat exchangers for the center and right hydraulic systems are in the right main tank. The heat exchanger for the left hydraulic system is in the left main tank.

B. Possible Causes

- (1) Hydraulic fluid leakage into fuel tank.

C. Related Data

- (1) 29-11 TASK 813
- (2) 29-11 TASK 827
- (3) 29-11 TASK 894
- (4) AMM PAGEBLOCK 29-11-00/601, I/C.

D. Fault Isolation Procedure - Hydraulic Fluid Leakage into the Fuel Tank

- (1) Use these guidelines to determine the order in which the fuel tanks should be sampled or inspected for leaks:
 - (a) If the right or center hydraulic system is the system with the hydraulic quantity problem, then inspect the fuel tanks for hydraulic leaks in this order:
 - 1) Right tank
 - 2) Left tank - inspection is required if fault was not isolated in the inspection of the right tank.

EFFECTIVITY
ARO ALL

29-11 TASKS 959-960

D633W103-ARO

Page 298.217
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (b) If the left hydraulic system is the system with the hydraulic quantity problem, then inspect the fuel tanks for hydraulic leaks in this order:
 - 1) Left tank
 - 2) Right tank - inspection is required if fault was not isolated in the inspection of the left tank.
 - 3) Center tank - inspection is required if fault was not isolated in the inspection of the left or right tanks.
 - (2) If the hydraulic fluid level decreases slowly, then do the following steps:
 - (a) Get a fuel sample from the applicable tank(s). To get a fuel sample, do this task: Fuel Tank Sump Drain Valve - Water Removal/Sampling, AMM TASK 12-11-02-680-801.
 - (b) Send the samples to a certified testing facility to determine if hydraulic fluid is present.
 - 1) If a visual examination of the fuel samples reveals contamination, or a decreasing hydraulic fluid level cannot otherwise be explained, then the technician may use his experience and judgement, if airline policy allows, to continue this procedure without confirmation of hydraulic fluid contamination of the fuel.
 - (3) If the hydraulic fluid level decreases quickly, or if hydraulic fluid contamination of the fuel is confirmed or suspected, then continue.
 - (4) Defuel the applicable fuel tank. To defuel the tank, do this task: Purging and Fuel Tank Entry, AMM TASK 28-11-00-010-801.
- 

WARNING CAREFULLY DO ALL OF THE SAFETY PROCEDURES TO PREPARE TO GO INTO THE FUEL TANK. IF YOU DO NOT OBEY THE SAFETY PROCEDURES, YOU CAN CAUSE AN EXPLOSION. AN EXPLOSION WILL CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.
- (5) Do this task: Purging and Fuel Tank Entry, AMM TASK 28-11-00-010-801.
 - (6) Enter the applicable fuel tank and do this step:
 - (a) Wipe all traces of fuel from the heat exchanger, all parts of the tubing attached to the heat exchanger and all other tubing that penetrates the fuel tank walls.
 - (7) Exit the applicable fuel tank and close the access door to the tank.
 - (8) Pressurize the applicable hydraulic system with a portable hydraulic cart. Do this task: Main Hydraulic System Pressurization with a Portable Hydraulic Cart, AMM TASK 29-11-00-860-802.
 - (9) Remove the pressure from the portable hydraulic cart. Do this task: Main Hydraulic System - Air Bleed - Left, Center and Right, AMM TASK 29-11-00-860-809.
 - (10) Enter the applicable fuel tank and look for leaks at the heat exchanger, all parts of the tubing attached to the heat exchanger and all other tubing that penetrates the fuel tank walls.
 - (11) If leaks are found, do these steps:
 - (a) Repair any leaks found at the tubing connections to the heat exchanger or any other tubing in the fuel tank.
 - (b) If leaks are found in the heat exchanger, replace the heat exchanger. Do these tasks: Heat Exchanger Removal, AMM TASK 29-11-60-000-801 and Heat Exchanger Installation, AMM TASK 29-11-60-400-801.
 - (12) If leaks are not found, then look for hydraulic leaks in the appropriate fuel tanks as listed in the guidelines at the start of this fault isolation procedure.
 - (13) If hydraulic fluid contamination in the fuel tank(s) was found, do this task: 28-11 TASK 806.

EFFECTIVITY
ARO ALL

29-11 TASK 960

D633W103-ARO

Page 298.218
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- (14) If hydraulic fluid contamination in the left main fuel tank was found, do this task to determine if hydraulic fluid contamination of the fuel has affected the APU: APU Operates With Hydraulic Fluid-Contamination Fuel - Fault Isolation, 49-10 TASK 834.

E. Repair Confirmation

- (1) Return the aircraft to service.
- (2) Monitor the hydraulic reservoirs for indication of excessive fluid loss.
 - (a) If the hydraulic fluid loss has stopped or is within specification, you have corrected the fault.

————— **END OF TASK** —————

961. Left, Center, and Right Hydraulic System Pressure Problems - Fault Isolation

A. Fault Isolation Procedure

- (1) If the MAT shows ACTIVE for the maintenance message 29-10590, then do this task: Left Hydraulic System Pressure Problems - Fault Isolation, 29-11 TASK 821.
- (2) If the MAT shows LATCHED for the maintenance message 29-10590, then do these steps:
 - (a) Pressurize the left hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do this task: Left Hydraulic System Pressure Problems - Fault Isolation, 29-11 TASK 821.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (3) If the MAT shows ACTIVE for the maintenance message 29-10600, then do this task: Right Hydraulic System Pressure Problems - Fault Isolation, 29-11 TASK 822.
- (4) If the MAT shows LATCHED for the maintenance message 29-10600, then do these steps:
 - (a) Pressurize the right hydraulic system. To pressurize it, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do this task: Right Hydraulic System Pressure Problems - Fault Isolation, 29-11 TASK 822.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:
 - 1) Do this task: Main Hydraulic System Power Removal, AMM TASK 29-11-00-860-808.
- (5) If the MAT shows ACTIVE for the maintenance message 29-10580, then do the Fault Isolation Procedure below.
- (6) If the MAT shows LATCHED for the maintenance message 29-10580, then do these steps:
 - (a) For the center hydraulic system, do this task: Main Hydraulic System Pressurization with an Alternating Current Motor Pump, AMM TASK 29-11-00-860-803.
 - (b) If the MAT shows ACTIVE or LATCHED for the maintenance message, then do this task: Center Hydraulic System Pressure Problems - Fault Isolation, 29-11 TASK 863.
 - (c) If the MAT shows NOT ACTIVE for the maintenance message, then there was an intermittent fault. Do this step to complete the task:

EFFECTIVITY
ARO ALL

29-11 TASKS 960-961

D633W103-ARO

Page 298.219
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL

- 1) Do this task: Main Hydraulic System Power Removal, AMM
TASK 29-11-00-860-808.

———— **END OF TASK** ————

EFFECTIVITY
ARO ALL

29-11 TASK 961

D633W103-ARO

Page 298.220
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

801. Ram Air Turbine Auto Deploy Circuit From HYDIM-CR Open - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10200.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - (a) If maintenance message 29-10210 shows on the ground test display, then do these steps:
 - 1) Replace the ram air turbine (RAT) actuator.
These are the tasks:
Ram Air Turbine (RAT) Actuator Removal, AMM TASK 29-21-05-000-801,
Ram Air Turbine (RAT) Actuator Installation, AMM TASK 29-21-05-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - 3) If maintenance message 29-10200 does not show on the ground test display, you corrected the fault. Do this ground test on the MAT to unlatch maintenance message 29-10210: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - 4) If maintenance message 29-10200 shows on the ground test display, then continue.
 - 5) Remove the hydraulic interface module (HYDIM-CL) card, A4, from the left systems card file (LSCF), P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - 6) Remove the HYDIM-CR card, A4, from the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - 7) Disconnect the connector DM29001 from the RAT actuator solenoid, M29001.
 - 8) Do a wiring check between these pins of connector XA4 at the LSCF, P85, and connector DM29001 at the RAT actuator, M29001 (SSM 29-21-11):

XA4	DM29001
pin 8	pin 4
pin 9	pin 4

- 9) Do a wiring check between these pins of connector XA4 at the RSCF, P84, and connector DM29001 at the RAT actuator, M29001 (SSM 29-21-11):

EFFECTIVITY
ARO ALL

29-21 TASK 801

D633W103-ARO

Page 201
Jan 05/2013



777-200/300 FAULT ISOLATION MANUAL

XA4	DM29001
pin 8	pin 4
pin 9	pin 4

- 10) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - c) Re-install the HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - d) Re-connect connector DM29001.
 - e) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - f) If maintenance message 29-10200 does not show on the ground test display, you corrected the fault. Do this ground test on the MAT to unlatch maintenance message 29-10210: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
- (b) If maintenance message 29-10210 does not show on the ground test display, then continue.
- (2) Replace the center-right hydraulic interface module (HYDIM-CR) card, A4, in the right system card file (RSCF), P84.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the ram air turbine (RAT) actuator, M29001.

These are the tasks:

Ram Air Turbine (RAT) Actuator Removal, AMM TASK 29-21-05-000-801,
Ram Air Turbine (RAT) Actuator Installation, AMM TASK 29-21-05-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the wiring:
 - (a) Remove the HYDIM-CR card, A4, from the RSCF, P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.

EFFECTIVITY
ARO ALL

29-21 TASK 801

D633W103-ARO

Page 202
Sep 05/2016



777-200/300
FAULT ISOLATION MANUAL

- (b) Disconnect the connector DM29001 from the RAT actuator solenoid, M29001.
- (c) Do a wiring check between these pins of connector XA4 at the RSCF, P84, and connector DM29001 at the RAT actuator, M29001 (SSM 29-21-11):

XA4	DM29001
pin 9	pin 4
pin 8	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 3) Re-connect connector DM29001.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

802. Ram Air Turbine Auto Deploy Power to HYDIM-CR Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10240.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the power wiring:
 - (a) Remove the center-right hydraulic interface module (HYDIM-CR) card, A4, from the right system card file (RSCF), P84. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Do a check for 28V DC between pin 5 of connector XA4 and structure ground.
 - (c) Do a check for 28V DC between pin 6 of connector XA4 and structure ground.
 - (d) If there is not 28V DC at pins 5 and 6 of connector XA4, then do these steps:
 - 1) Open the P11 pilot's overhead panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C29619.
 - 3) If there is not 28V DC at the circuit breaker, then do these steps:

EFFECTIVITY
ARO ALL

29-21 TASKS 801-802

D633W103-ARO

Page 203
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- a) Replace this circuit breaker:
(SSM 29-21-11)

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
D	13	C29619	RAT AUTO CONTROL

- b) Re-install the HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- c) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- 4) If there is 28V DC at the circuit breaker, then do these steps:
- a) Repair the wiring between these pins of connector XA4 at the RSCF, P84, and the load terminal of circuit breaker C29619 (SSM 29-21-11):

XA4		C29619
pin 5	.....	pin 2
pin 6	.....	pin 2

- b) Re-install the HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- c) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is 28V DC at pins 5 and 6 of connector XA4, then continue.
- (2) Install a new HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— END OF TASK —————

803. Ram Air Turbine Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 23-43730.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, monitor the maintenance message on the MAT while you do these steps:

EFFECTIVITY
ARO ALL

29-21 TASKS 802-803

D633W103-ARO

Page 204
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C29621	RAT AUTO/MANUAL CONTROL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

- (b) Push and then release the RAM AIR TURBINE switch.
(c) Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C29621	RAT AUTO/MANUAL CONTROL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

- (d) If the MAT shows ACTIVE for the maintenance message while the switch is in one or more of the positions specified above, then do the Fault Isolation Procedure below.
(e) If the MAT shows NOT ACTIVE for the maintenance message while the switch is in all the positions specified above, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Replace the ram air turbine switch, S1, on the hydraulic/ram air turbine module, M29004 (WDM 29-21-11)

- (a) Monitor the maintenance message on the MAT while you do these steps:

- 1) Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C29621	RAT AUTO/MANUAL CONTROL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

- 2) Push and then release the RAM AIR TURBINE switch.
3) Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C29621	RAT AUTO/MANUAL CONTROL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

EFFECTIVITY
ARO ALL

29-21 TASK 803

D633W103-ARO

Page 205
Jan 05/2013



777-200/300 FAULT ISOLATION MANUAL

- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
- 1) To make sure the RAT operates correctly, do this task: Ram Air Turbine (RAT) Manual Deployment System - System Test, AMM TASK 29-21-00-730-802
- NOTE: It is only necessary that you do the manual deployment system part of this task.
- (c) If the MAT shows ACTIVE for the maintenance message while the switch is in the ON or off position, then continue.
- (2) Do this check of the wiring from the ram air turbine switch to the right overhead panel cardfile:
- (a) Remove the hydraulic/ram air turbine module, M29004. To remove it, (WDM 29-21-11).
 - (b) Disconnect connector M29004DS1 from the ram air turbine switch.
 - (c) Disconnect connector DM23217H from the right overhead card file, M23217.
 - (d) Do a wiring check between these pins of connector M29004DS1 at pilot's overhead panel, P5, and connector DM23217H, at the maintenance panel, P61 (WDM 29-21-11):

M29004DS1		DM23217H	
pin 4	.....	pin A1	
pin 5	.....	pin A2	
pin 6	.....	pin A3	

- (e) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector M29004DS1.
 - 3) Re-connect connector DM23217H.
 - 4) Re-install the hydraulic/ram air turbine module, M29004.
 - 5) Monitor the maintenance message on the MAT while you do these steps:
 - a) Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C29621	RAT AUTO/MANUAL CONTROL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

- b) Push and then release the RAM AIR TURBINE switch.
- c) Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C29621	RAT AUTO/MANUAL CONTROL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

EFFECTIVITY
ARO ALL

29-21 TASK 803



777-200/300 FAULT ISOLATION MANUAL

- 6) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
- a) To make sure the RAT operates correctly, do this task: Ram Air Turbine (RAT) Manual Deployment System - System Test, AMM TASK 29-21-00-730-802
- NOTE: It is only necessary that you do the manual deployment system part of this task.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector M29004DS1.
- (h) Re-install the hydraulic/ram air turbine module, M29004.

- (3) Replace the right overhead panel card file chassis, M23217 at the maintenance panel, P61.

These are the tasks:

Overhead Panel Card File (OPCF) Removal, AMM TASK 23-93-02-000-802,

Overhead Panel Card File (OPCF) Installation, AMM TASK 23-93-02-400-802.

- (a) Monitor the maintenance message on the MAT while you do these steps:

- 1) Open these circuit breakers and install safety tags:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C29621	RAT AUTO/MANUAL CONTROL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

- 2) Push and then release the RAM AIR TURBINE switch.
- 3) Remove the safety tags and close these circuit breakers:

APU Auxiliary Panel, P49

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C29621	RAT AUTO/MANUAL CONTROL

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

- (b) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show) while the switch is in the ON and off positions, you corrected the fault.
- 1) To make sure the RAT operates correctly, do this task: Ram Air Turbine (RAT) Manual Deployment System - System Test, AMM TASK 29-21-00-730-802
- NOTE: It is only necessary that you do the manual deployment system part of this task.

————— END OF TASK —————

EFFECTIVITY
ARO ALL

29-21 TASK 803

D633W103-ARO

Page 207
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

804. Ram Air Turbine Auto Deploy Circuit From HYDIM-CL Open - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10210.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows NOT ACTIVE for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - (a) If maintenance message 29-10200 shows on the ground test display, then do these steps:
 - 1) Replace the ram air turbine (RAT) actuator, M29001.
These are the tasks:
Ram Air Turbine (RAT) Actuator Removal, AMM TASK 29-21-05-000-801,
Ram Air Turbine (RAT) Actuator Installation, AMM TASK 29-21-05-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - 3) If maintenance message 29-10210 does not show on the ground test display, you corrected the fault. Do this ground test on the MAT to unlatch maintenance message 29-10200: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
 - 4) If maintenance message 29-10210 shows on the ground test display, then continue.
 - 5) Remove the hydraulic interface module (HYDIM-CL) card, A4, from the left systems card file (LSCF), P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - 6) Remove the HYDIM-CR card, A4, from the RSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - 7) Disconnect the connector DM29001 from the RAT actuator solenoid, M29001.
 - 8) Do a wiring check between these pins of connector XA4 at the LSCF, P85, and connector DM29001 at the RAT actuator, M29001 (SSM 29-21-11):

XA4	DM29001
pin 8	pin 4
pin 9	pin 4

- 9) Do a wiring check between these pins of connector XA4 at the RSCF, P84, and connector DM29001 at the RAT actuator, M29001 (SSM 29-21-11):

EFFECTIVITY
ARO ALL

29-21 TASK 804

D633W103-ARO

Page 208
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

XA4	DM29001
pin 8	pin 4
pin 9	pin 4

- 10) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task:
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - c) Re-install the HYDIM-CR card, A4, in the RSCF, P84. To install it, do this task:
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - d) Re-connect connector DM29001.
 - e) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - f) If maintenance message 29-10210 does not show in the ground test display, you corrected the fault. Do this ground test on the MAT to unlatch maintenance message 29-10200: 29 Hydraulic System, LRU Replacement Test, HYDIM (CR).
- (b) If maintenance message 29-10200 does not show on the ground test display, then continue.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left system card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (3) Replace the ram air turbine (RAT) actuator, M29001.

These are the tasks:

Ram Air Turbine (RAT) Actuator Removal, AMM TASK 29-21-05-000-801,
Ram Air Turbine (RAT) Actuator Installation, AMM TASK 29-21-05-400-801.

 - (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (c) If the maintenance message shows on the ground test display, then continue.
- (4) Do a check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, from the LSCF, P85. To remove it, do this task:
Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.

EFFECTIVITY
ARO ALL

29-21 TASK 804

D633W103-ARO

Page 209
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- (b) Disconnect the connector DM29001 from the RAT actuator solenoid, M29001.
- (c) Do a wiring check between these pins of connector XA4 at the LSCF, P85, and connector DM29001 at the RAT actuator, M29001 (SSM 29-21-11):

XA4	DM29001
pin 8	pin 4
pin 9	pin 4

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 3) Re-connect connector DM29001.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

— END OF TASK —

805. Ram Air Turbine Auto Deploy Power to HYDIM-CL Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10250.

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the power wiring:
 - (a) Remove the center-left hydraulic interface module (HYDIM-CL) card, A4, from the left system card file (LSCF), P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Do a check for 28V DC between pin 5 of connector XA4 and structure ground.
 - (c) Do a check for 28V DC between pin 6 of connector XA4 and structure ground.
 - (d) If there is not 28V DC at pins 5 and 6 of connector XA4, then do these steps:
 - 1) Open the P310 standby power management panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C29618.
 - 3) If there is not 28V DC at the circuit breaker, then do these steps:

EFFECTIVITY
ARO ALL

29-21 TASKS 804-805

D633W103-ARO

Page 210
Sep 05/2016



777-200/300 FAULT ISOLATION MANUAL

- a) Replace this circuit breaker:

(SSM 29-21-11)

Standby Power Management Panel, P310

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	7	C29618	RAT AUTO/MAN CTRL

- b) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- c) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- e) If the MAT shows NOT ACTIVE for the maintenance message (or if the message does not show), then you corrected the fault.
- 4) If there is 28V DC at the circuit breaker, then do these steps:
- a) Repair the wiring between these pins of connector XA4 at the LSCF, P85, and the load terminal of circuit breaker C29618 (SSM 29-21-11):

XA4		C29618
pin 5	.....	pin 2
pin 6	.....	pin 2

- b) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- c) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If there is 28V DC at pins 5 and 6 of connector XA4, then continue.
- (2) Install a new HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
- (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

806. RAT Stow Valve Position Switch Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10255.

EFFECTIVITY
ARO ALL

29-21 TASKS 805-806

D633W103-ARO

Page 211
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Do this check of the Module-RAM Air Turbine Checkout, M29006:
 - (a) Disconnect connector DM29006 from the Module-RAM Air Turbine Checkout, M29006.
 - (b) Measure the resistance between pins 4 and 5 of connector DM29006 on the Module-RAM Air Turbine Checkout, M29006 (WDM 29-21-11).
 - (c) If the resistance is less than 20 MΩ, then do these steps:
 - 1) Repair the wiring.
 - 2) Make sure the wiring was not damaged during the dielectric strength test.
 - 3) Re-connect connector DM29006.
 - (d) If the resistance is more than 20 MΩ, then continue.
- (2) Do this check of the power wiring:
 - (a) Disconnect connector DM29006 from the ram air turbine (RAT) checkout module, M29006.
 - (b) Do a continuity check between pins 2 and 3 of connector on the RAT checkout module, M29006 (SSM 29-21-11).
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Replace the RAT checkout module, M29006.
These are the tasks:
Ram Air Turbine (RAT) Checkout Module and Components Removal, AMM TASK 29-21-11-000-801,
Ram Air Turbine (RAT) Checkout Module and Components Installation, AMM TASK 29-21-11-400-801.
 - 2) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - 3) If the maintenance message does not show on the ground test display, you corrected the fault.
 - (d) If you do not find a problem with the wiring, then continue.
- (3) Do this check of the wiring:
 - (a) Remove the center-left hydraulic interface module (HYDIM-CL) card, A4, from the left system card file (LSCF), P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Do a wiring check between these pins of connector XA4 at the LSCF, P85, and connector DM29006 at the RAT checkout module, M29006 (SSM 29-21-11):

EFFECTIVITY
ARO ALL

29-21 TASK 806

D633W103-ARO

Page 212
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

XA4 **DM29006**
pin 31 pin 3

- (c) Do a continuity check between pin 2 of connector DM29006 at the RAT checkout module and structure ground (SSM 29-21-11)
- (d) If you find a problem with the wiring, then do these steps: n
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29006.
 - 3) Re-install the HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector DM29006.
- (4) Install a new HYDIM-CL card, A4, in the LSCF, P85. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - (b) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

807. Pressure Transducer (RAT) Signal Problems - Fault Isolation

A. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

B. Fault Isolation Procedure

- (1) Replace the ram air turbine (RAT) pressure transducer, M29009.

These are the tasks:

Ram Air Turbine (RAT) Checkout Module and Components Removal, AMM TASK 29-21-11-000-801,

Ram Air Turbine (RAT) Checkout Module and Components Installation, AMM TASK 29-21-11-400-801.

EFFECTIVITY
ARO ALL

29-21 TASKS 806-807

D633W103-ARO

Page 213
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (2) Replace the center-left hydraulic interface module (HYDIM-CL) card, A4, in the left systems card file (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,

Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

- (a) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
- (b) If the maintenance message does not show on the ground test display, you corrected the fault.
- (3) Do this check of the wiring:
 - (a) Remove the HYDIM-CL card, A4, in the LSCF, P85. To remove it, do this task: Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801.
 - (b) Disconnect connector DM29009 from the RAT pressure transducer, M29009.
 - (c) Do a wiring check between these pins of connector DM29009 at the RAT pressure transducer, M29009 and connector XA4 at the LSCF, P85 (SSM 29-21-11):

DM29009		XA4
pin 2	.....	pin 68
pin 3	.....	pin 69

- (d) Do a continuity check between pin 1 of connector DM29009 at the RAT pressure transducer, M29009, and structure ground (SSM 29-21-11).
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector DM29009.
 - 3) Re-install the HYDIM-CL card, A4. To install it, do this task: Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.
 - 4) Do this ground test on the MAT: 29 Hydraulic System, LRU Replacement Test, HYDIM (CL).
 - 5) If the maintenance message does not show on the ground test display, you corrected the fault.

————— **END OF TASK** —————

809. RAT Generator Heater Problems - Fault Isolation

A. Maintenance Messages

- (1) This task is for maintenance message: 29-10252.

EFFECTIVITY
ARO ALL

29-21 TASKS 807-809

D633W103-ARO

Page 214
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

B. Initial Evaluation

- (1) If the MAT shows ACTIVE for the maintenance message, then do the Fault Isolation Procedure below.
- (2) If the MAT shows LATCHED for the maintenance message, then do this ground test on the MAT: 29 Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - (a) If the maintenance message shows on the ground test display, then do the Fault Isolation Procedure below.
 - (b) If the maintenance message does not show on the ground test display, then there was an intermittent fault.

C. Fault Isolation Procedure

- (1) Look at the Extended Maintenance, Existing Faults display on the MAT for these maintenance messages:
 - (a) 29-10005
 - (b) 29-10007.
- (2) If both of the two maintenance messages specified above show in Existing Faults with the message 29-10252, then do these steps:
 - (a) Replace the center-left hydraulic interface module (HYDIM-HCL), A4, in the left system cardfile (LSCF), P85.

These are the tasks:

Hydraulic Interface Module (HYDIM) Cards Removal, AMM TASK 29-11-50-000-801,
Hydraulic Interface Module (HYDIM) Cards Installation, AMM TASK 29-11-50-400-801.

 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
- (3) If only maintenance message 29-10007 appears with the message 29-10252 in Existing Faults, then do these steps:
 - (a) Replace the RAT Gen/ADP 2 Heater relay, K29007.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
 - (b) Do this check of the power wiring:
 - 1) Do a check for 28 V DC from pin X1 of the RAT Gen/ADP 2 Heater Relay, K29007, to structure ground.
 - 2) If there is not 28 V DC at pin X1 of relay K29007, then do these steps:
 - a) Repair the wiring between pin X1 of the RAT Gen/ADP 2 Heater Relay K29007 and the load terminal of circuit breaker C29622.
 - b) Re-connect RAT Gen/ADP 2 Heater Relay, K29007.
 - c) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).

EFFECTIVITY
ARO ALL

29-21 TASK 809

D633W103-ARO

Page 215
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- d) If the maintenance message does not show on the ground test display, you corrected the fault.
- e) If the maintenance message shows on the ground test display, then continue.
- 3) If there is 28 V DC at pin X1 of relay K29007, then continue:
- 4) Re-connect the RAT Gen/ADP 2 Heater Relay, K29007.
- (4) If only the maintenance message 29-10005 appears with the message 29-10252 in Existing Faults, or the message 29-10252 appears alone, then do these steps:
 - (a) Set the RAT GEN HEATER switch, S29004, on the E6-2 panel to the other heater position.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
 - (b) Replace the RAT GEN HEATER switch, S29004 on the E6-2 panel.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
 - (c) Replace the RAT Gen/ADP 2 Heater relay, K29007.
 - 1) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - 2) If the maintenance message does not show on the ground test display, you corrected the fault.
 - 3) If the maintenance message shows on the ground test display, then continue.
 - (d) Do this check of the wiring from the RAT Gen Heater switch to the RAT Gen/ADP 2 Heater relay at the ELMS P210 Panel.
 - 1) Remove connector DK29007 from the RAT Gen/ADP 2 Heater relay, K29007.
 - 2) Do a wiring check between pin B1 of connector DK29007 and pin 2 of RAT Gen Heater switch, S29004.
 - 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector DK29007.
 - c) Re-connect switch S29004.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - f) If the maintenance message shows on the ground test display, then continue.
 - 4) If you do not find a problem with the wiring, then continue.
 - 5) Re-connect connector DK29007.

EFFECTIVITY
ARO ALL

29-21 TASK 809

D633W103-ARO

Page 216
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 6) Re-connect switch S29004.
- (e) Do this check of the wiring between the RAT GEN HEATER switch and RAT generator.
 - 1) Disconnect connector DM24017B from the RAT generator, M24017.
 - 2) Do a wiring check between these pins of connector DS29004 at the RAT GEN HEATER switch, S29004, and connector DM24017B at the RAT generator, M24017 (SSM 29-21-11):

DS29004		DM24017B	
pin 1	.....	pin 15	
pin 3	.....	pin 5	

- 3) Do a continuity check between pin 6 of connector DM24017B at the RAT generator, M24017, and structure ground (SSM 29-21-11).
- 4) Do a continuity check between pin 4 of connector DM24017B at the RAT generator, M24017, and structure ground (SSM 29-21-11).
- 5) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the RAT GEN HEATER switch, S29004 (SSM 29-21-11).
 - c) Re-connect connector DM24017B.
 - d) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - e) If the maintenance message does not show on the ground test display, you corrected the fault.
 - f) If the maintenance message shows on the ground test display, then continue.
 - g) If you do not find a problem with the wiring, then continue.
 - h) Re-install the RAT GEN HEATER switch, S29004 (SSM 29-21-11).
- 6) Re-connect connector DM24017B.
- (f) Do a check of the RAT generator heaters:
 - 1) Disconnect connector DM24017B from the RAT generator, M24017.
 - 2) Do a continuity check between pin 15 and 6 of connector on the RAT generator, M24017 (SSM 29-21-11).
 - 3) Do a continuity check between pin 5 and 4 of connector on the RAT generator (SSM 29-21-11).
 - 4) If you find a problem with the wiring, then do these steps:
 - a) Replace the RAT generator, M24017.

These are the tasks:
Ram Air Turbine (RAT) Generator and Governor Assembly Removal, AMM TASK 24-33-02-000-801,
RAT Generator and Governor Assembly Installation, AMM TASK 24-33-02-400-801.
 - b) Do this ground test on the MAT: 29-Hydraulic System, Operational Test, Heaters (RAT Generator, ADP C1, and ADP C2).
 - c) If the maintenance message does not show on the ground test display, you corrected the fault.

EFFECTIVITY
ARO ALL

29-21 TASK 809

D633W103-ARO

Page 217
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- d) If the maintenance message shows on the ground test display, then continue.
- 5) If you do not find a problem with the wiring, then continue.
- 6) Re-connect connector DM24017B.

————— **END OF TASK** —————

810. Ram Air Turbine Does Not Deploy - Fault Isolation

A. Description

- (1) This task is for a Ram Air Turbine (RAT) that does not deploy when commanded down.

B. Possible Causes

- (1) Debris preventing RAT movement.
- (2) RAT actuator solenoids.
- (3) Wiring.
- (4) RAT Actuator.

C. Initial Evaluation

- (1) Do these steps to cycle the RAT:
 - (a) Do this task to retract the RAT: Ram Air Turbine (RAT) Retraction, AMM TASK 29-21-00-860-802.
 - (b) Do this task to extend the RAT: Ram Air Turbine (RAT) Extension, AMM TASK 29-21-00-860-801.
 - 1) If the RAT extends then do the Repair Confirmation at the end of this task to verify that there was no fault.
 - 2) If the RAT does not extend, then continue.
- (2) Check the MAT for maintenance messages related to the RAT.
 - (a) If there are any maintenance messages related to the RAT, then do the applicable Fault Isolation procedures for those messages.
 - (b) If there are no maintenance messages related to the RAT, then do the fault isolation procedure below.

D. Fault Isolation Procedure

 WARNING	KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE PATH OF THE RAT AND THE RAT COMPARTMENT DOOR. THE RAT AND THE RAT COMPARTMENT DOOR MOVE QUICKLY AND CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.
---	--

- (1) Rope off the area below the RAT compartment to keep personnel and equipment out of the path of the RAT.
- (2) Remove the lockwire from the stow valve lever on the RAT GND (ground) checkout module.
NOTE: The stow valve lever is the one that has a T-handle on it. The stow valve lever is outboard of the motoring valve lever.
- (3) Pull the T-handle and move the stow valve lever on the RAT GND (ground) checkout module to the STOP (middle) position.
NOTE: This creates a hydraulic lock and prevents the RAT actuator from extending more than 6 inches.

EFFECTIVITY
ARO ALL

29-21 TASKS 809-810

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 218
Sep 05/2017



**777-200/300
FAULT ISOLATION MANUAL**

- (4) Do this task to access the RAT: Access to a Ram Air Turbine (RAT) That Will Not Extend, AMM TASK 29-21-00-010-801.
- (5) Look for debris preventing the RAT or RAT compartment door from moving.
 - (a) If there is debris preventing the RAT or RAT compartment door from moving then move the RAT ground checkout module handle to the STOP (middle) position.
 - (b) Remove the debris.
 - (c) Pull the T-handle and move the RAT GND (ground) checkout module handle back to the FLIGHT (fully down) position.
 - (d) Do the repair confirmation at the end of this task.
 - (e) If the repair confirmation does not correct the fault, then continue.
- (6) Do a wiring check between connector DM29001 and structure ground:

DM29001	Structure Ground
2	Structure Ground

- (a) If there is no continuity between pin 2 and structure ground, then repair the wiring.
 - 1) Do the repair confirmation at the end of this task.
 - 2) If the repair confirmation does not correct the fault, then continue.
- (7) Check for 28 vdc at the RAT actuator solenoid, M29001 (WDM 29-21-11):
 - (a) Disconnect connector DM29001.
 - (b) Check for 28 vdc between pin 1 of connector DM29001 and structure ground when the RAM AIR TURBINE switch (RAT Deploy Switch, S1) is pressed.
 - (c) If there is not 28 vdc between pin 1 of connector DM29001 and structure ground, then replace the RAM AIR TURBINE switch (RAT Deploy Switch, S1).
 - 1) Make sure there is 28 vdc between pin 1 of connector DM29001 and structure ground when the RAM AIR TURBINE switch (RAT Deploy Switch, S1) is pressed.
 - 2) If there is 28 vdc, then do the repair confirmation.
 - 3) If there is not 28 vdc, then repair the wiring.
 - a) Do the repair confirmation at the end of this task.
 - b) If the repair confirmation does not correct the fault, then continue.
- (8) Replace the RAT actuator solenoid, M29001.
 - (a) Do the repair confirmation at the end of this task.
 - (b) If the repair confirmation does not correct the fault, then continue.
- (9) Do a wiring check between connector DM29002 and structure ground:

DM29002	Structure Ground
2	Structure Ground

- (a) If there is no continuity between pin 2 and structure ground, then repair the wiring.
 - 1) Do the repair confirmation at the end of this task.
 - 2) If the repair confirmation does not correct the fault, then continue.
- (10) Check for 28 vdc at the RAT actuator solenoid, M29002 (WDM 29-21-11):

EFFECTIVITY
ARO ALL

29-21 TASK 810



777-200/300 FAULT ISOLATION MANUAL

- (a) Disconnect connector DM29002.
- (b) Check for 28 vdc between pin 1 of connector DM29002 and structure ground when the RAM AIR TURBINE switch (RAT Deploy Switch, S1) is pressed.
- (c) If there is not 28 vdc between pin 1 of connector DM29002 and structure ground, then replace the RAM AIR TURBINE switch (RAT Deploy Switch, S1).
 - 1) Make sure there is 28 vdc between pin 1 of connector DM29002 and structure ground when the RAM AIR TURBINE switch (RAT Deploy Switch, S1) is pressed.
 - 2) If there is 28 vdc, then do the repair confirmation.
 - 3) If there is not 28 vdc, then repair the wiring.
 - a) Do the repair confirmation at the end of this task.
 - b) If the repair confirmation does not correct the fault, then continue.
- (11) Replace the RAT actuator solenoid, M29002.
 - (a) Do the repair confirmation at the end of this task.
 - (b) If the repair confirmation does not correct the fault, then continue.
- (12) To extend the RAT that will not deploy, do these steps:
 - (a) To pressurize the center hydraulic system, do this task: Main Hydraulic System Pressurization, AMM TASK 29-11-00-860-801.
 - (b) Do these steps 10 times or until the RAT deploys:
 - 1) Move the stow valve lever on the RAT GND (ground) checkout module from the FLIGHT (fully down) position to the STOW (fully up) position and back to the FLIGHT (fully down) position.
 - 2) While the stow valve lever moves from the FLIGHT position to the STOW position, push the RAM AIR TURBINE switch on the overhead panel, P5.
 - (c) If the RAT deploys, do these tasks to replace the RAT actuator:
 - 1) Ram Air Turbine (RAT) Actuator Removal, AMM TASK 29-21-05-000-801
 - 2) Ram Air Turbine (RAT) Actuator Installation, AMM TASK 29-21-05-400-801
 - a) Do the repair confirmation at the end of this task.
 - (d) If the RAT does not deploy, then continue.
 - (e) To depressurize the center hydraulic system, do this task: Main Hydraulic System and the Reservoir Depressurization, AMM TASK 29-11-00-860-807.
 - (f) Pull the T-handle and move the stow valve lever on the RAT GND (ground) checkout module to the STOP (middle) position.
 - (g) Do these steps at the same time for 10 times or until the RAT deploys. Wait 5 minutes after each time.



DO NOT PUSH THE SWITCH FOR MORE THAN 15 SECONDS. THIS WILL CAUSE DAMAGE TO THE SOLENOIDS.

- 1) Push the RAM AIR TURBINE switch on the overhead panel, P5, again and again to energize the two deploy solenoids.

EFFECTIVITY
ARO ALL

29-21 TASK 810

D633W103-ARO

ECCN 9E991 BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

Page 220
Sep 05/2017



777-200/300 FAULT ISOLATION MANUAL

- 2) Lightly tap near the bottom of the RAT actuator with a rubber mallet, STD-3906. Use the illustration to find the correct location: Figure 301 (Sheet 1).

NOTE: The RAT door will open approximately 6 inches at this point.

- (h) Pull the T-handle and move the stow valve lever on the RAT GND (ground) checkout module to the FLIGHT (fully down) position.

NOTE: The RAT will deploy completely at this point.

- (i) Do these tasks to replace the RAT actuator:
 - 1) Ram Air Turbine (RAT) Actuator Removal, AMM TASK 29-21-05-000-801
 - 2) Ram Air Turbine (RAT) Actuator Installation, AMM TASK 29-21-05-400-801
 - a) Do the repair confirmation at the end of this task.

E. Repair Confirmation

- (1) Do this task to check the manual deployment of the RAT: Ram Air Turbine (RAT) Manual Deployment System - System Test, AMM TASK 29-21-00-730-802.
- (2) Do this task to check the automatic deployment of the RAT: Ram Air Turbine (RAT) Automatic Deployment System - System Test, AMM TASK 29-21-00-730-805
 - (a) If the RAT operates and the MAT shows NOT ACTIVE for the RAT maintenance message (or if the message does not show), you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
ARO ALL

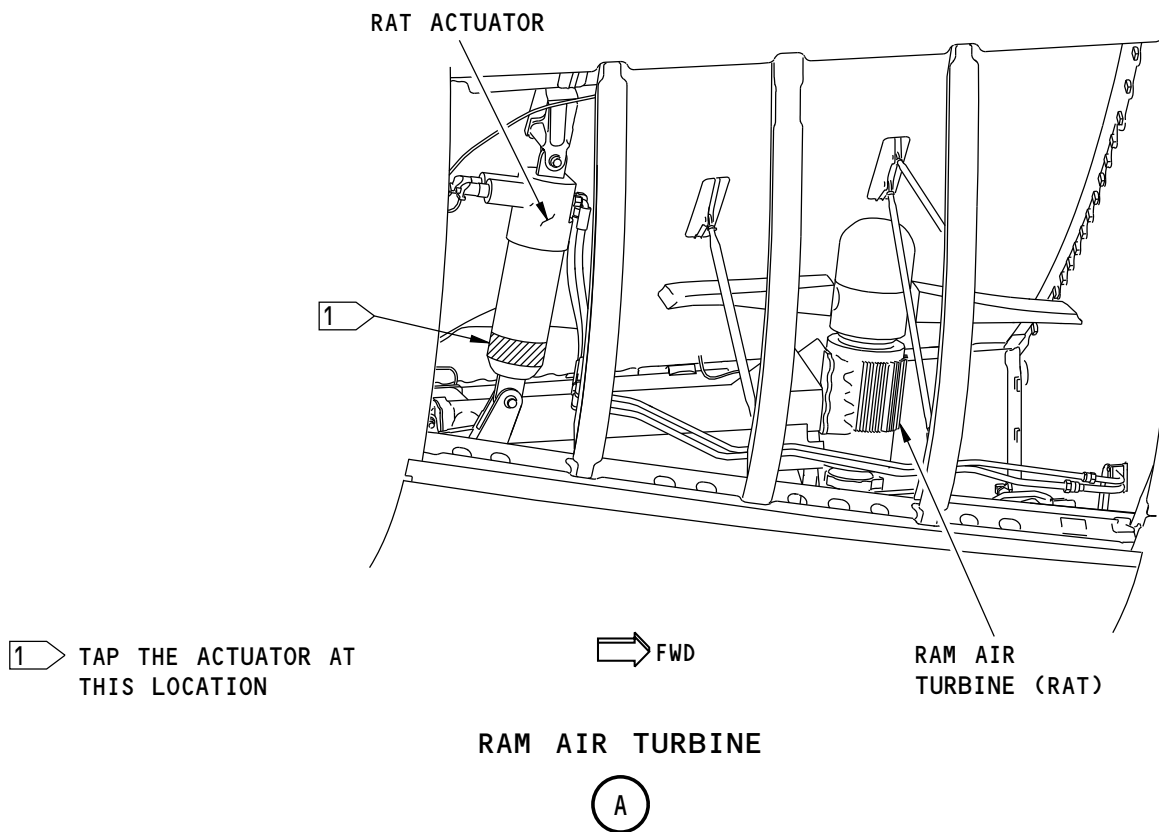
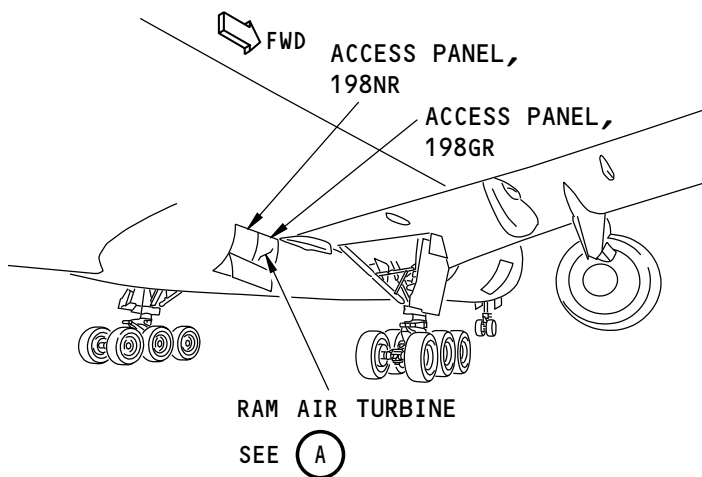
29-21 TASK 810

D633W103-ARO

Page 221
Sep 05/2017



777-200/300
FAULT ISOLATION MANUAL



2114161 S0000452851_V1

Ram Air Turbine (RAT) Actuator That Will Not Deploy Removal
Figure 301/29-21-00-990-801

EFFECTIVITY
ARO ALL

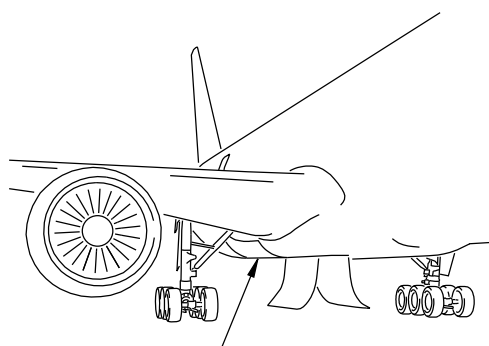
29-21 TASK SUPPORT

D633W103-ARO

Page 301
Jan 05/2013

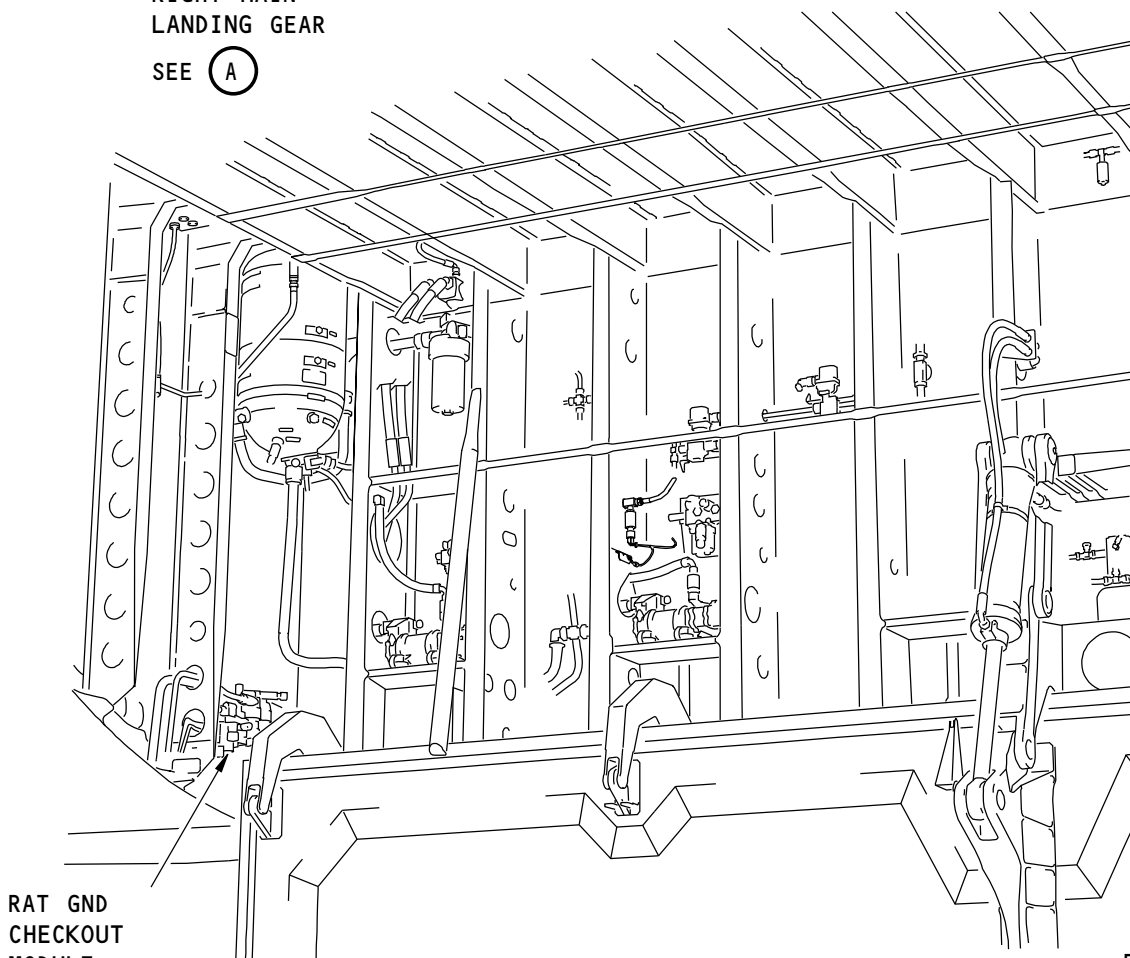


777-200/300
FAULT ISOLATION MANUAL



RIGHT MAIN
LANDING GEAR

SEE (A)

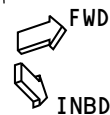


RAT GND
CHECKOUT
MODULE

SEE (B)

RIGHT MAIN LANDING GEAR

(A)



2114168 S0000452830_V1

RAT Checkout Module
Figure 302/29-21-00-990-802 (Sheet 1 of 2)

EFFECTIVITY
ARO ALL

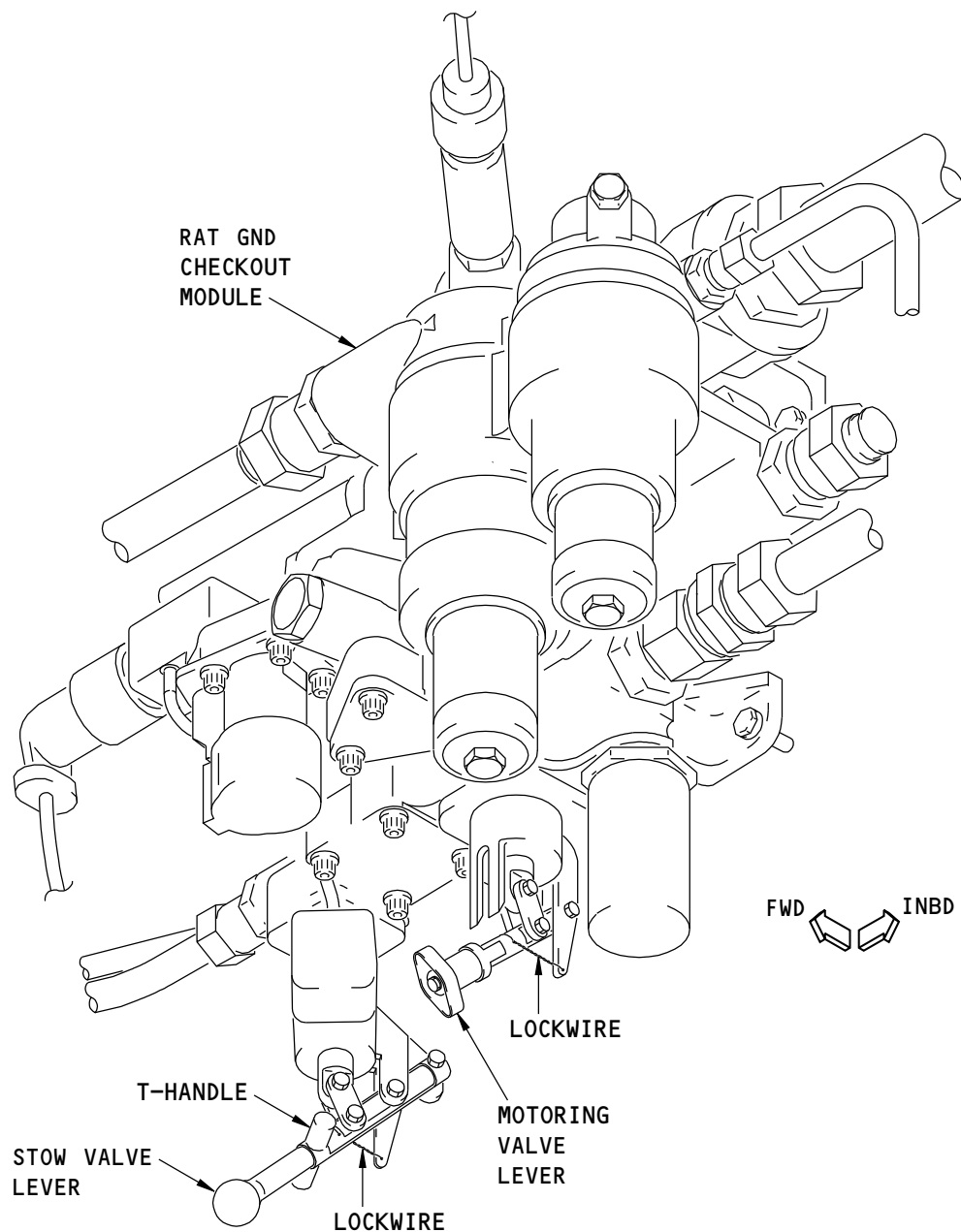
29-21 TASK SUPPORT

D633W103-ARO

Page 302
Jan 05/2013



777-200/300
FAULT ISOLATION MANUAL



RAT GND CHECKOUT MODULE

B

2114175 S0000452837_V1

RAT Checkout Module
Figure 302/29-21-00-990-802 (Sheet 2 of 2)

EFFECTIVITY
ARO ALL

29-21 TASK SUPPORT

D633W103-ARO

Page 303
Jan 05/2013



**777-200/300
FAULT ISOLATION MANUAL**

801. Procedure To Be Determined - Fault Isolation

A. Fault Isolation Procedure

- (1) At this time the FIM does not have a procedure for this fault. The FIM will contain a procedure for this fault in the future.

———— **END OF TASK** ————

EFFECTIVITY
ARO ALL

29-98 TASK 801

D633W103-ARO

Page 201
Jan 05/2013