

CHAPTER

32

LANDING GEAR



**737-600/700/800/900
FAULT ISOLATION MANUAL**

**CHAPTER 32
LANDING GEAR**

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
32-EFFECTIVE PAGES			32-09 TASKS (cont)			32-09 TASKS (cont)		
1 thru 5	Oct 15/2023		212	Jun 15/2022		O 248	Oct 15/2023	
6	BLANK		213	Jun 15/2022		O 249	Oct 15/2023	
32-HOW TO USE THE FIM			214	Jun 15/2022		O 250	Oct 15/2023	
1	Oct 15/2021		215	Jun 15/2023		O 251	Oct 15/2023	
2	Oct 15/2021		216	Jun 15/2022		O 252	Oct 15/2023	
3	Oct 15/2021		217	Jun 15/2022		O 253	Oct 15/2023	
4	Oct 15/2021		218	Jun 15/2022		254	Jun 15/2022	
5	Oct 15/2021		219	Jun 15/2022		255	Jun 15/2022	
6	Oct 15/2021		220	Jun 15/2022		256	Jun 15/2022	
32-FAULT CODE INDEX			221	Jun 15/2022		257	Jun 15/2022	
101	Oct 15/2021		222	Jun 15/2022		258	Jun 15/2022	
102	Feb 15/2023		223	Oct 15/2022		259	Jun 15/2022	
103	Oct 15/2022		224	Oct 15/2022		260	Jun 15/2022	
104	BLANK		225	Oct 15/2022		261	Jun 15/2022	
32-MAINT MSG INDEX			226	Oct 15/2022		262	Jun 15/2022	
101	Oct 15/2021		227	Oct 15/2022		263	Jun 15/2022	
102	Oct 15/2021		228	Oct 15/2022		264	Jun 15/2022	
103	Oct 15/2021		229	Oct 15/2022		265	Jun 15/2022	
104	Feb 15/2023		230	Oct 15/2022		266	Jun 15/2022	
105	Feb 15/2023		231	Oct 15/2022		267	Jun 15/2022	
106	Feb 15/2023		232	Oct 15/2022		268	Jun 15/2022	
107	Feb 15/2023		233	Oct 15/2022		269	Jun 15/2022	
108	Feb 15/2023		234	Oct 15/2022		270	Jun 15/2022	
109	Feb 15/2023		235	Jun 15/2022		271	Jun 15/2022	
110	Feb 15/2023		236	Jun 15/2022		272	Jun 15/2022	
32-09 TASKS			237	Jun 15/2022		273	Jun 15/2022	
201	Jun 15/2023		238	Jun 15/2022		274	Jun 15/2022	
202	Jun 15/2023		239	Oct 15/2022		275	Jun 15/2022	
203	Jun 15/2023		R 240	Oct 15/2023		276	Jun 15/2022	
204	Jun 15/2023		R 241	Oct 15/2023		277	Jun 15/2022	
205	Jun 15/2023		O 242	Oct 15/2023		278	Jun 15/2022	
206	Jun 15/2023		O 243	Oct 15/2023		279	Jun 15/2022	
207	Jun 15/2023		O 244	Oct 15/2023		280	BLANK	
208	Jun 15/2023		O 245	Oct 15/2023		32-09 TASK SUPPORT		
209	Jun 15/2023		O 246	Oct 15/2023		301	Oct 15/2021	
210	Jun 15/2023		O 247	Oct 15/2023		302	Oct 15/2021	
211	Jun 15/2022							

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

32-EFFECTIVE PAGES



**737-600/700/800/900
FAULT ISOLATION MANUAL**

**CHAPTER 32
LANDING GEAR**

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
32-11 TASKS			32-30 TASKS (cont)			32-32 TASKS (cont)		
201	Oct 15/2022		232	Oct 15/2021		207	Oct 15/2021	
202	Oct 15/2022		233	Oct 15/2021		208	Oct 15/2021	
32-21 TASKS			234	Oct 15/2021		209	Oct 15/2021	
201	Oct 15/2021		235	Oct 15/2021		210	Oct 15/2021	
202	Oct 15/2021		236	Oct 15/2021		211	Oct 15/2021	
32-30 TASKS			237	Oct 15/2021		212	Oct 15/2021	
201	Oct 15/2021		238	Oct 15/2021		213	Oct 15/2021	
202	Oct 15/2021		239	Oct 15/2021		214	Oct 15/2021	
203	Oct 15/2021		240	Oct 15/2021		215	Oct 15/2021	
204	Oct 15/2021		241	Oct 15/2021		216	Oct 15/2021	
205	Oct 15/2021		242	Oct 15/2021		217	Oct 15/2021	
206	Oct 15/2021		243	Oct 15/2021		218	Oct 15/2021	
207	Oct 15/2021		244	Oct 15/2021		219	Oct 15/2021	
208	Oct 15/2021		245	Oct 15/2021		220	BLANK	
209	Oct 15/2021		246	Oct 15/2021		32-42 TASKS		
210	Oct 15/2021		247	Oct 15/2021		201	Oct 15/2021	
211	Oct 15/2021		248	Oct 15/2021		202	Oct 15/2021	
212	Oct 15/2021		249	Oct 15/2021		203	Jun 15/2023	
213	Oct 15/2021		250	Jun 15/2023		204	Oct 15/2021	
214	Oct 15/2021		251	Jun 15/2023		205	Feb 15/2023	
215	Oct 15/2021		252	Jun 15/2023		206	Oct 15/2021	
216	Oct 15/2021		253	Jun 15/2023		207	Oct 15/2021	
217	Oct 15/2021		254	Jun 15/2023		208	Oct 15/2021	
218	Oct 15/2021		255	Jun 15/2023		209	Oct 15/2021	
219	Oct 15/2021		256	Jun 15/2023		210	Oct 15/2021	
220	Oct 15/2021		257	Jun 15/2023		211	Oct 15/2021	
221	Oct 15/2021		258	Jun 15/2023		212	Oct 15/2021	
222	Oct 15/2021		259	Jun 15/2023		213	Oct 15/2021	
223	Oct 15/2021		260	Jun 15/2023		214	Oct 15/2021	
224	Oct 15/2021		32-32 TASKS			215	Oct 15/2021	
225	Oct 15/2021		201	Oct 15/2021		216	Oct 15/2021	
226	Oct 15/2021		202	Oct 15/2021		217	Oct 15/2021	
227	Oct 15/2021		203	Oct 15/2021		218	Oct 15/2021	
228	Oct 15/2021		204	Oct 15/2021		219	Oct 15/2021	
229	Oct 15/2021		205	Oct 15/2021		220	Oct 15/2021	
230	Oct 15/2021		206	Oct 15/2021		R 221	Oct 15/2023	
231	Oct 15/2021							

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

32-EFFECTIVE PAGES

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 2
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

**CHAPTER 32
LANDING GEAR**

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
32-42 TASKS (cont)			32-42 TASKS (cont)			32-44 TASKS (cont)		
222	Oct 15/2021		258	Oct 15/2021		203	Oct 15/2021	
223	Oct 15/2021		259	Oct 15/2021		R 204	Oct 15/2023	
224	Oct 15/2021		260	Oct 15/2022		R 205	Oct 15/2023	
225	Oct 15/2021		261	Oct 15/2022		O 206	Oct 15/2023	
226	Oct 15/2021		262	Oct 15/2021		R 207	Oct 15/2023	
227	Oct 15/2021		263	Oct 15/2021		O 208	Oct 15/2023	
228	Oct 15/2021		264	Oct 15/2021		O 209	Oct 15/2023	
229	Oct 15/2021		265	Oct 15/2021		O 210	Oct 15/2023	
230	Feb 15/2022		266	Oct 15/2021		O 211	Oct 15/2023	
231	Feb 15/2022		267	Oct 15/2021		O 212	Oct 15/2023	
232	Oct 15/2021		268	Oct 15/2021		O 213	Oct 15/2023	
233	Oct 15/2021		269	Oct 15/2021		O 214	Oct 15/2023	
234	Oct 15/2021		270	Oct 15/2021		O 215	Oct 15/2023	
235	Oct 15/2021		271	Oct 15/2021		O 216	Oct 15/2023	
236	Oct 15/2021		272	Oct 15/2021		O 217	Oct 15/2023	
237	Oct 15/2021		273	Oct 15/2021		O 218	Oct 15/2023	
238	Oct 15/2021		274	Oct 15/2021		32-44 TASK SUPPORT		
239	Oct 15/2021		275	Oct 15/2021		301	Oct 15/2021	
240	Oct 15/2021		276	Oct 15/2021		302	Oct 15/2021	
241	Oct 15/2021		277	Oct 15/2021		303	Oct 15/2021	
242	Oct 15/2021		278	Oct 15/2021		304	Oct 15/2021	
243	Oct 15/2021		279	Oct 15/2021		305	Oct 15/2021	
244	Oct 15/2021		280	Oct 15/2021		306	Oct 15/2021	
245	Oct 15/2021		281	Oct 15/2021		307	Oct 15/2021	
246	Oct 15/2021		282	Oct 15/2021		308	Oct 15/2021	
247	Oct 15/2021		283	Oct 15/2021		309	Oct 15/2021	
248	Oct 15/2022		284	Oct 15/2021		310	Oct 15/2021	
249	Oct 15/2021		285	Oct 15/2021		311	Oct 15/2021	
250	Oct 15/2021		286	Oct 15/2021		312	Oct 15/2021	
251	Oct 15/2021		287	Feb 15/2023		313	Oct 15/2021	
252	Oct 15/2021		288	Feb 15/2023		314	Oct 15/2021	
253	Oct 15/2021		289	Feb 15/2023		315	Oct 15/2021	
254	Oct 15/2021		290	BLANK		316	Oct 15/2021	
255	Oct 15/2021		32-44 TASKS			317	Oct 15/2021	
256	Oct 15/2021		R 201	Oct 15/2023		318	Oct 15/2021	
257	Oct 15/2021		O 202	Oct 15/2023		32-46 TASKS		
						201	Feb 15/2022	

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

32-EFFECTIVE PAGES



**737-600/700/800/900
FAULT ISOLATION MANUAL**

**CHAPTER 32
LANDING GEAR**

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
32-46 TASKS (cont)			32-51 TASKS (cont)			32-61 TASKS (cont)		
202	Feb 15/2022		223	Jun 15/2022		230	Jun 15/2022	
203	Feb 15/2022		224	Jun 15/2022		231	Jun 15/2022	
204	Feb 15/2022		225	Jun 15/2022		232	Jun 15/2022	
205	Feb 15/2022		226	Jun 15/2022		233	Jun 15/2022	
206	Feb 15/2022		R 227	Oct 15/2023		234	Jun 15/2022	
207	Feb 15/2022		O 228	Oct 15/2023		235	Jun 15/2022	
208	Feb 15/2022		32-61 TASKS			236	Jun 15/2022	
209	Feb 15/2022		201	Oct 15/2021		237	Jun 15/2022	
210	Feb 15/2022		202	Oct 15/2021		238	Jun 15/2022	
211	Jun 15/2023		203	Oct 15/2021		239	Jun 15/2022	
212	Jun 15/2023		204	Oct 15/2021		240	Jun 15/2022	
213	Jun 15/2023		205	Oct 15/2021		241	Jun 15/2022	
214	Feb 15/2022		206	Oct 15/2021		242	Jun 15/2022	
32-51 TASKS			207	Oct 15/2021		243	Jun 15/2022	
201	Oct 15/2021		208	Oct 15/2021		244	Jun 15/2022	
202	Oct 15/2021		209	Oct 15/2021		245	Jun 15/2022	
203	Oct 15/2021		210	Oct 15/2021		246	Jun 15/2022	
204	Oct 15/2022		211	Oct 15/2021		247	Jun 15/2022	
205	Oct 15/2021		212	Oct 15/2021		248	Jun 15/2022	
206	Oct 15/2021		213	Oct 15/2021		249	Jun 15/2022	
207	Oct 15/2022		214	Oct 15/2021		250	Jun 15/2022	
208	Jun 15/2022		215	Oct 15/2021		251	Jun 15/2022	
209	Jun 15/2022		216	Oct 15/2021		252	Feb 15/2022	
210	Jun 15/2022		217	Oct 15/2021		253	Feb 15/2022	
211	Jun 15/2022		218	Oct 15/2021		254	Feb 15/2022	
212	Jun 15/2022		R 219	Oct 15/2023		255	Feb 15/2022	
213	Jun 15/2022		220	Oct 15/2021		256	Oct 15/2021	
214	Jun 15/2022		221	Jun 15/2022		257	Oct 15/2021	
215	Jun 15/2022		222	Jun 15/2022		258	Oct 15/2021	
216	Jun 15/2022		223	Jun 15/2022		259	Oct 15/2021	
217	Jun 15/2022		224	Jun 15/2022		260	Oct 15/2021	
218	Jun 15/2022		225	Jun 15/2022		261	Oct 15/2021	
219	Jun 15/2022		R 226	Oct 15/2023		262	Oct 15/2021	
220	Jun 15/2022		227	Jun 15/2022		263	Oct 15/2021	
221	Jun 15/2022		228	Jun 15/2022		264	Oct 15/2021	
222	Jun 15/2022		229	Jun 15/2022		265	Oct 15/2021	

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

32-EFFECTIVE PAGES



**737-600/700/800/900
FAULT ISOLATION MANUAL**

**CHAPTER 32
LANDING GEAR**

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
32-61 TASKS (cont)								
266	Oct 15/2021							
267	Oct 15/2021							
268	Oct 15/2021							
269	Oct 15/2021							
270	BLANK							
32-61 TASK SUPPORT								
301	Oct 15/2021							
302	Oct 15/2021							
303	Oct 15/2021							
304	Oct 15/2021							
305	Oct 15/2021							
306	Oct 15/2021							
307	Oct 15/2021							
308	Oct 15/2021							

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

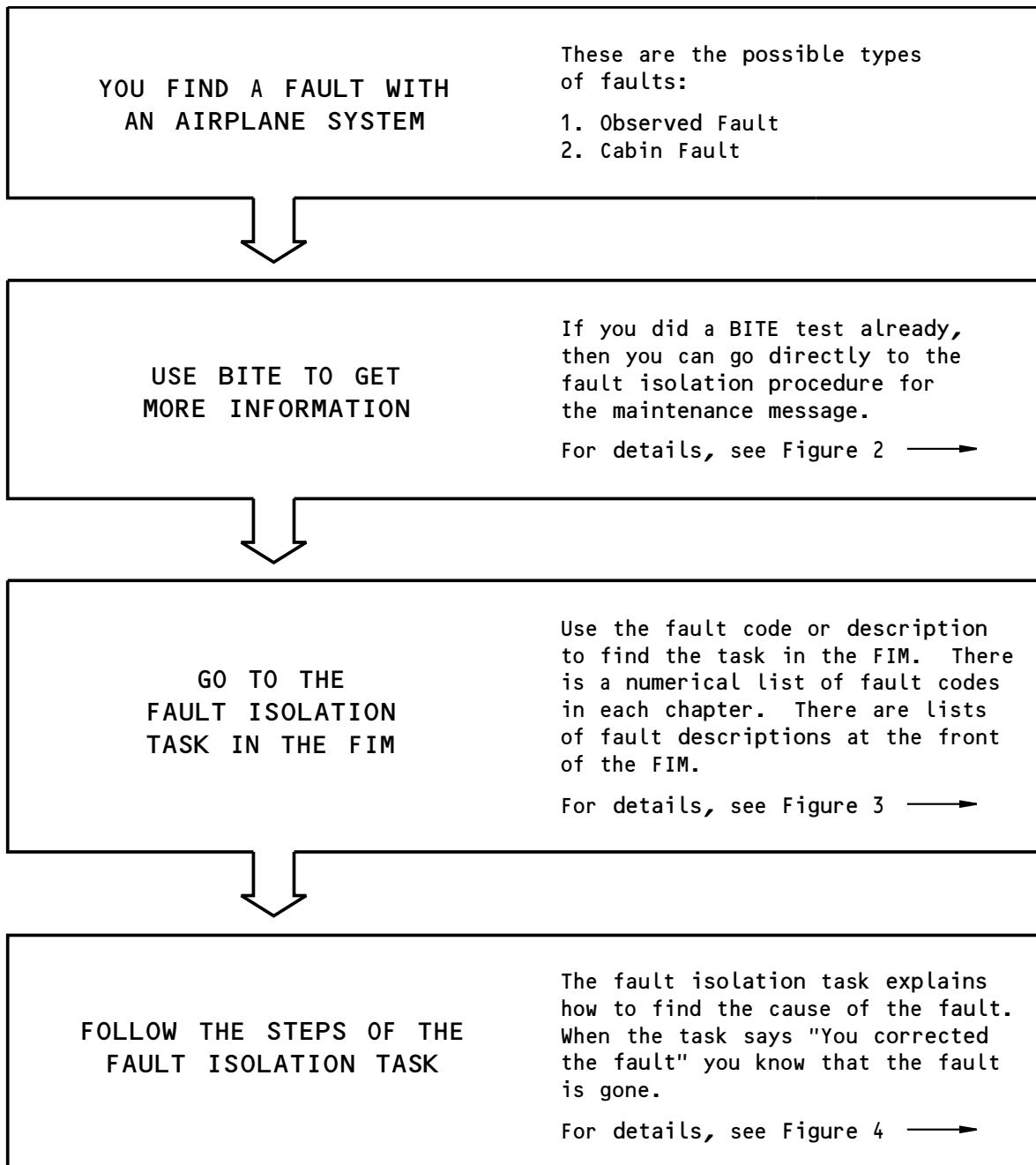
32-EFFECTIVE PAGES

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 5
Oct 15/2023

 BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



G04902 S0000148576_V1

Basic Fault Isolation Process
Figure 1

EFFECTIVITY
SIA ALL

32-HOW TO USE THE FIM

D633A103-SIA

Page 1
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Some airplane systems have built-in test equipment (BITE). IF the system finds a fault when you do a BITE test, it will give you a maintenance message.

A maintenance message can be any of these:

- a code
- a text message
- a light
- an indication.

To find the fault isolation task for a maintenance message, go to the Maintenance Message Index in the chapter for the applicable system.

If you do not know which chapter is the correct one, look at the list at the front of any Maintenance Message Index. For each system or component (LRU) that has BITE, this list gives the chapter number where you can find the Index that you need.

Find the maintenance message for the applicable LRU or system in the Index. Then find the task number on the same line as the maintenance message. Go to the task in the FIM and do the steps of the task (see Figure 4).

G04950 S0000148578_V1

**Getting Fault Information from BITE
Figure 2**

EFFECTIVITY
SIA ALL

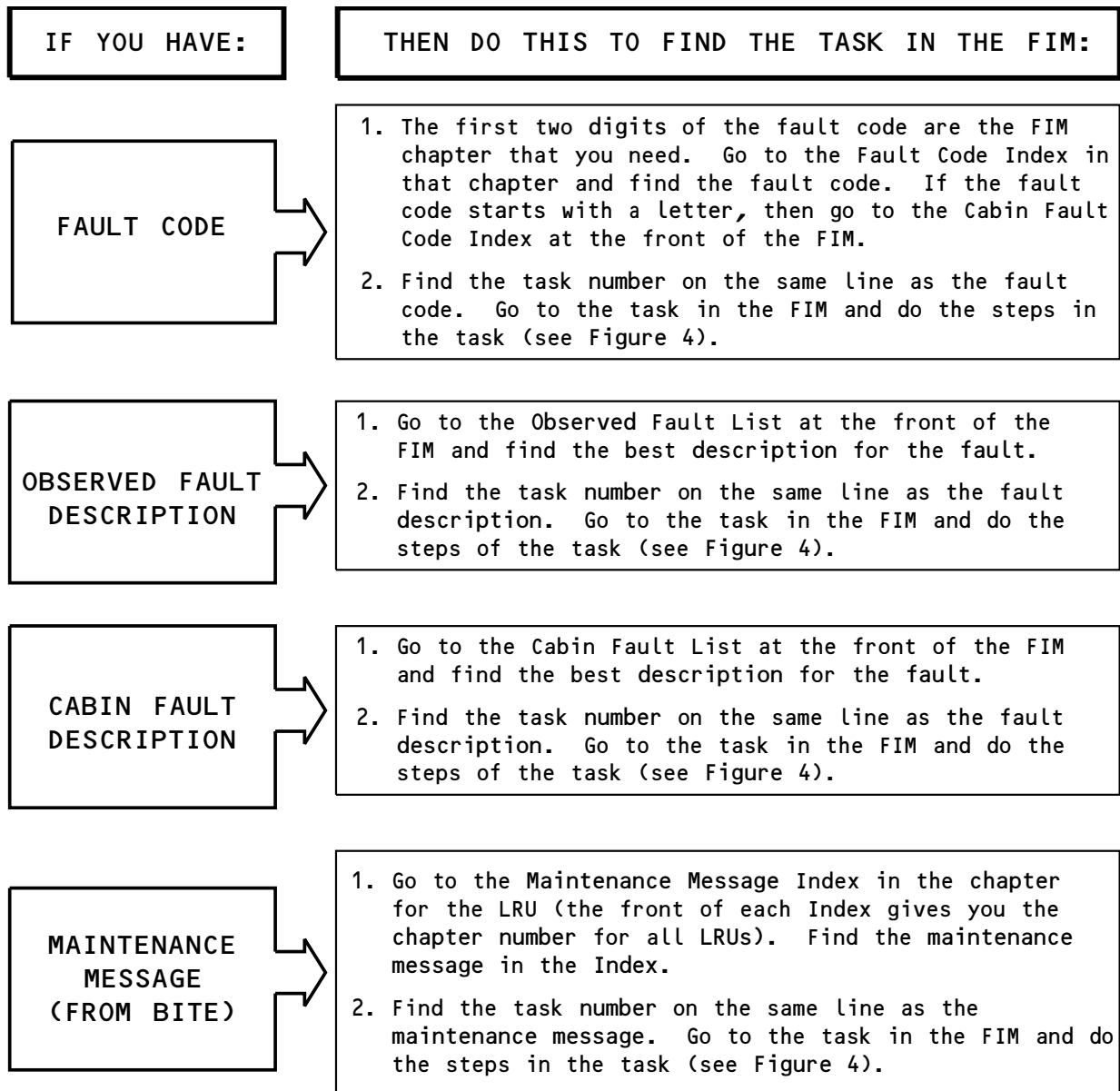
32-HOW TO USE THE FIM

D633A103-SIA

Page 2
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



G04979 S0000148579_V2

**Finding the Fault Isolation Task in the FIM
Figure 3**

EFFECTIVITY
SIA ALL

32-HOW TO USE THE FIM

D633A103-SIA

Page 3
Oct 15/2021



737-600/700/800/900 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

POSSIBLE CAUSES

- The list of possible causes has the most likely cause first and the least likely cause last.
- You can use the maintenance records of your airline to determine if the fault occurred before. Compare the list of possible causes to the past maintenance actions. This will help prevent repetition of the same maintenance actions.

INITIAL EVALUATION PARAGRAPH

- The primary purpose of the Initial Evaluation paragraph at the start of the task is to help you find out if 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 maintenance action to take. Then monitor the airplane to see if the fault happens again on subsequent flights.
- The Initial Evaluation paragraph can also help you find out which Fault Isolation Procedure to use to isolate and correct the fault.

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.

G05009 S0000148580_V3

Doing the Fault Isolation Task Figure 4

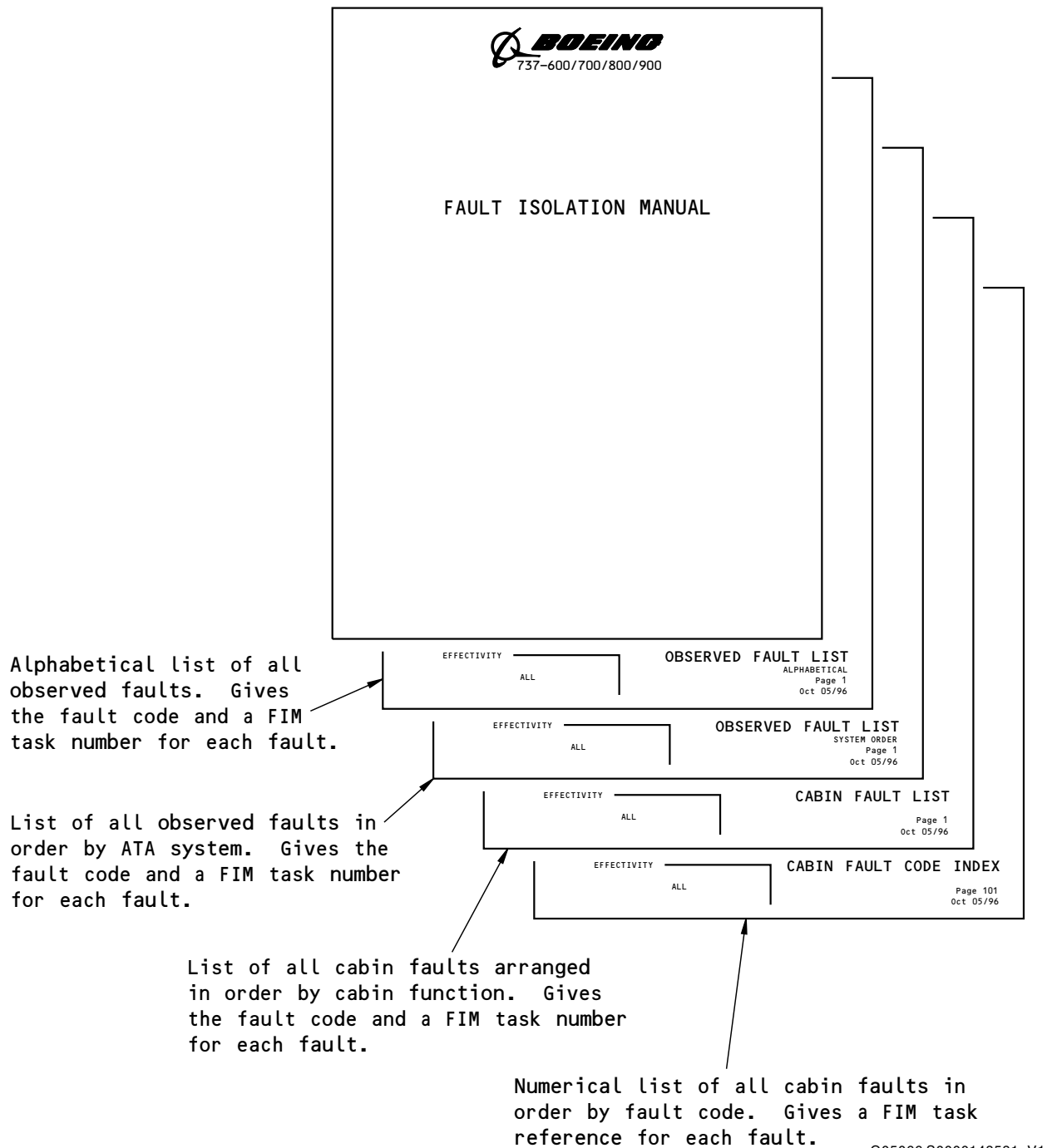
EFFECTIVITY
SIA ALL

32-HOW TO USE THE FIM

D633A103-SIA

Page 4
Oct 15/2021

 BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



Subjects at Front of FIM
Figure 5

EFFECTIVITY ☐ ALL

SIA ALL

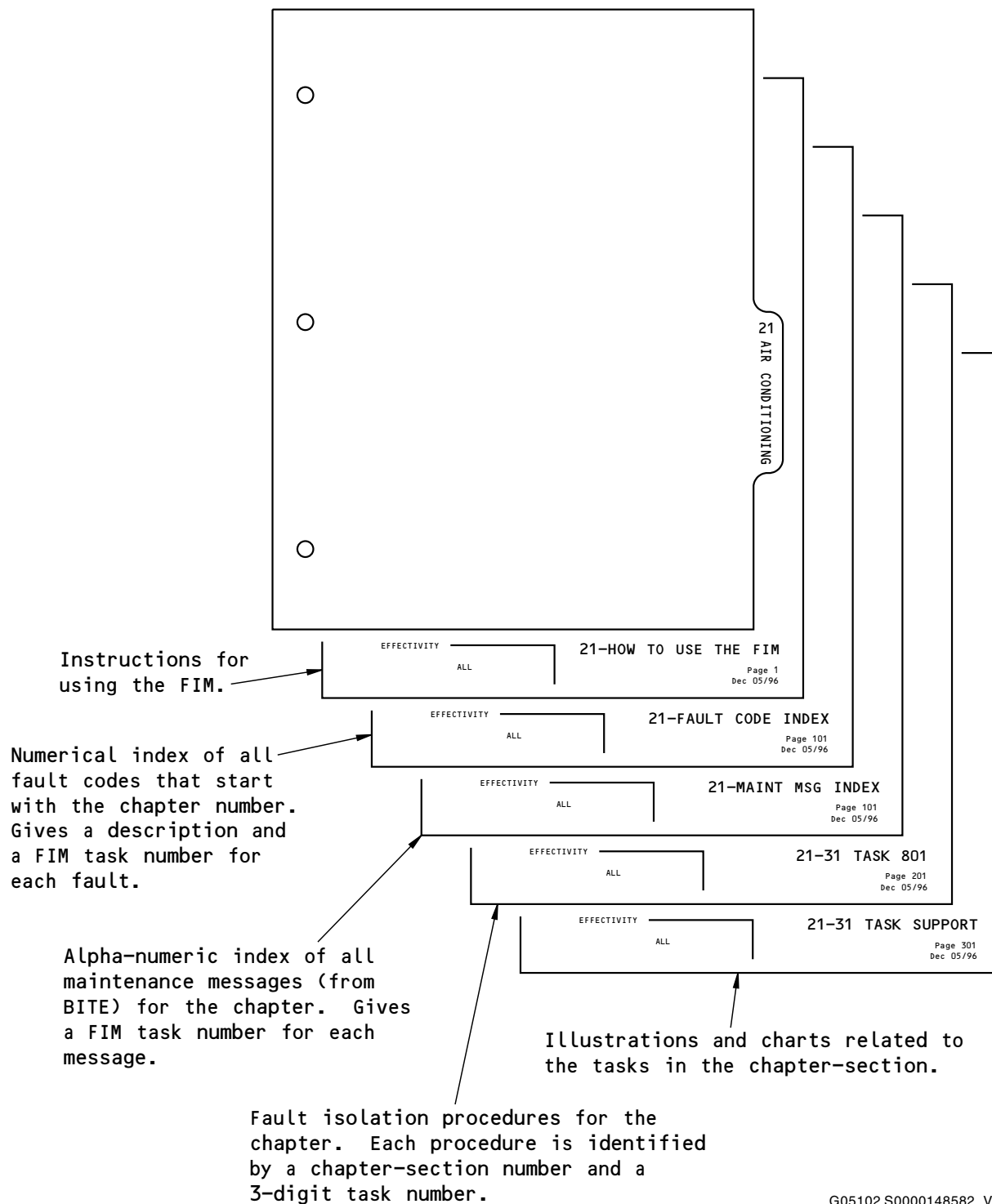
32-HOW TO USE THE FIM

D633A103-SIA

Page 5
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL



G05102 S0000148582_V1

Subjects in Each FIM Chapter
Figure 6

EFFECTIVITY
SIA ALL

32-HOW TO USE THE FIM

D633A103-SIA

Page 6
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
320 020 00	Air mode: Shows with the airplane on the ground.	32-09 TASK 801
320 030 00	Ground mode: Shows with airplane in the air.	32-09 TASK 801
320 040 00	PSEU: BITE display is blank.	32-09 TASK 811
320 050 00	PSEU light: light on.	32-09 TASK 801
320 060 00	PSEU light: light does not come on during test.	33-10 TASK 801
322 010 00	Nose landing gear shock strut: deflated or pressure is low.	32-21 TASK 801
323 010 00	Landing gear lever: does not move to the UP position in flight, is free to move to the UP position when the lock override is used.	32-30 TASK 813
323 080 41	Main landing gear: Slow to retract - left.	32-32 TASK 804
323 080 42	Main landing gear: Slow to retract - right.	32-32 TASK 804
323 080 48	Main landing gear: Slow to retract - left and right.	32-32 TASK 803
323 090 41	Main landing gear: slow to extend - left.	32-32 TASK 804
323 090 42	Main landing gear: slow to extend - right.	32-32 TASK 804
323 090 48	Main landing gear: slow to extend - left and right.	32-32 TASK 803
323 120 00	Nose landing gear: slow to extend.	32-30 TASK 806
323 130 00	Nose landing gear: Slow to retract.	32-30 TASK 806
323 140 00	Nose landing gear: NOSE GEAR red light on, airplane on ground.	32-30 TASK 814
324 010 00	Brake pressure indicator: low/zero with parking brake released.	32-44 TASK 805
324 020 00	Brake pressure indicator: does not operate.	32-44 TASK 806
324 030 00	Brakes: grab, drag, or lock.	32-42 TASK 816
324 040 00	Brakes: pull to the left.	32-42 TASK 817
324 050 00	Brakes: pull to the right.	32-42 TASK 817
324 070 00	ANTISKID INOP light: light on.	32-42 TASK 829
324 080 00	AUTO BRAKE DISARM light: light on.	32-42 TASK 828
324 090 00	Autobrakes: deceleration rate is not correct.	32-42 TASK 807
324 095 00	Autobrakes: brakes grab during landing when using autobrakes.	32-42 TASK 832
324 097 00	Autobrakes: AUTO BRAKE DISARM light comes on during landing.	32-42 TASK 833
324 098 00	Autobrakes: Wheel continues to spin in the Main Gear Wheel Well after Gear Retraction.	32-42 TASK 834
324 100 00	BRAKE TEMP light: light on.	32-46 TASK 808
324 102 00	BTMU: Lights (all) on BTMU stay off with selector set to MONITOR TEST.	32-46 TASK 803
324 104 00	BTMU: BRAKE TEMP indication on CDS Systems display shows a value of 0.	32-46 TASK 807

EFFECTIVITY
SIA ALL

32-FAULT CODE INDEX

D633A103-SIA

Page 101
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
324 105 00	BTMU: Lights (all) on BTMU stay off with selector set to SENSOR TEST.	32-46 TASK 807
324 106 00	BTMU: BRAKE TEMP indication on CDS Systems display shows a value greater than 5 with BRAKE TEMP light off.	32-46 TASK 807
324 110 00	Brake pressure indicator: low/zero with parking brake set.	32-44 TASK 805
324 120 00	Parking Brake: lever does not release.	32-44 TASK 807
324 130 00	Parking Brake: lever does not set.	32-44 TASK 807
324 141 00	Parking Brake: PARK BRAKE Light on the Control Stand stays OFF when the Parking Brake is set.	32-44 TASK 803
324 142 00	Parking Brake: PARK BRAKE Light on the Control Stand stays ON when the Parking Brake is released.	32-44 TASK 804
324 145 00	Parking Brake: PARKING BRAKE light on external power panel is not on when parking brake is set.	32-42 TASK 830
324 150 01	Tire problem - main gear left outboard.	32-42 TASK 820
324 150 02	Tire problem - main gear left inboard.	32-42 TASK 820
324 150 03	Tire problem - main gear right inboard.	32-42 TASK 820
324 150 04	Tire problem - main gear right outboard.	32-42 TASK 820
324 150 05	Tire problem - nose gear left.	32-42 TASK 820
324 150 06	Tire problem - nose gear right.	32-42 TASK 820
324 171 00	BTMU: BRAKE TEMP indication on CDS Systems display differ by more than 3.0 units.	32-46 TASK 810
324 172 00	Brakes: Abnormal Noise or Vibration.	32-44 TASK 808
325 010 00	Nose wheel: makes a loud noise in the wheel well.	32-51 TASK 801
325 020 00	Nose wheel: Strut bottoms during taxi.	32-51 TASK 802
325 030 00	Nose wheel: Vibrates at gear retraction.	32-51 TASK 803
325 040 00	Nose wheel: Shimmy or Vibrate at Landing.	32-51 TASK 804
325 045 00	Nose wheel: Shimmy or Vibrate during taxi.	32-51 TASK 804
325 050 00	Nose wheel: Shimmy or Vibrate at takeoff.	32-51 TASK 804
325 060 00	Rudder pedal steering: does not operate, tiller steering normal.	32-51 TASK 805
325 061 00	Rudder pedal steering: does not steer straight.	32-51 TASK 810
325 070 00	Tiller steering: does not operate.	32-51 TASK 806
325 080 00	Tiller steering: response is sluggish.	32-51 TASK 807
325 090 00	Tiller steering: Steers in left direction only.	32-51 TASK 808
325 100 00	Tiller steering: Steers in right direction only.	32-51 TASK 808
325 140 00	Main landing gear: Shimmy or Vibrate at Taxi, Takeoff, or Landing.	32-11 TASK 802
326 010 00	Landing gear position lights: lights not correct.	32-09 TASK 801

EFFECTIVITY
SIA ALL

32-FAULT CODE INDEX

D633A103-SIA

Page 102
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
326 040 41	Main landing gear: LEFT GEAR green light does not come on with landing gear lever at DN, LEFT GEAR red light on, alternate gear extension was attempted.	32-32 TASK 805
326 040 42	Main landing gear: RIGHT GEAR green light does not come on with landing gear lever at DN, RIGHT GEAR red light on, alternate gear extension was attempted.	32-32 TASK 805
326 050 41	Main landing gear: LEFT GEAR green light does not come on with landing gear lever at DN, LEFT GEAR red light on, indications normal after alternate gear extension.	32-32 TASK 802
326 050 42	Main landing gear: RIGHT GEAR green light does not come on with landing gear lever at DN, RIGHT GEAR red light on, indications normal after alternate gear extension.	32-32 TASK 802
326 060 41	Main landing gear: LEFT GEAR green light does not go off with landing gear lever at UP, LEFT GEAR red light on.	32-32 TASK 801
326 060 42	Main landing gear: RIGHT GEAR green light does not go off with landing gear lever at UP, RIGHT GEAR red light on.	32-32 TASK 801
326 070 00	Landing gear, main and nose: Gears (all) extends with landing gear lever at OFF, NOSE GEAR, RIGHT GEAR, and LEFT GEAR green lights on.	32-30 TASK 809
326 072 01	Landing Gear: LEFT GEAR, RIGHT GEAR, and NOSE GEAR Red and Green Lights (ALL) are ON at the same time - Gear Commanded UP.	32-30 TASK 815
326 072 02	Landing Gear: LEFT GEAR, RIGHT GEAR, and NOSE GEAR Red and Green Lights (ALL) are ON at the same time - Gear Commanded DN.	32-30 TASK 816
326 075 00	Landing gear, main and nose: does not retract when landing gear lever moved to UP position.	32-30 TASK 815
326 076 00	Landing gear, main and nose: Does not extend when landing gear lever moved to DN position.	32-30 TASK 816
326 080 00	Nose landing gear: NOSE GEAR green light does not come on with landing gear lever at DN, NOSE GEAR red light on, alternate gear extension was attempted.	32-30 TASK 807
326 090 00	Nose landing gear: NOSE GEAR green light does not go off with landing gear lever at UP, NOSE GEAR red light on.	32-30 TASK 810
326 110 00	Nose landing gear: NOSE GEAR green light does not come on with landing gear lever at DN, NOSE GEAR red light on.	32-30 TASK 812
326 115 00	Nose landing gear: NOSE GEAR green light off with landing gear lever at UP, NOSE GEAR red light on.	32-30 TASK 811

EFFECTIVITY
SIA ALL

32-FAULT CODE INDEX

D633A103-SIA

Page 103
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

<u>LRU/SYSTEM</u>	<u>SHORT NAME</u>	<u>CHAPTER</u>
Air Data Inertial Reference System	ADIRS	34
Air Traffic Controller Transponder - 1 (Left)	ATC XPDR - 1 (L)	34
Air Traffic Controller Transponder - 2 (Right)	ATC XPDR - 2 (R)	34
Airborne Vibration Monitor System Signal Conditioner	AVM SIG COND	77
Antiskid Control Unit	ANTISKID	32
Attendant Control Panel	ACP	23
Automatic Direction Finder Receiver - 1	ADF RECVR - 1	34
Automatic Direction Finder Receiver - 2	ADF RECVR - 2	34
Autothrottle Computer	A/T COMPUTER	22
Auxiliary Power Unit	APU	49
Auxiliary Power Unit Generator Control Unit	APU GCU	24
Bus Power Control Unit	BPCU	24
Cabin Pressure Controller	CAB PRESS CON	21
Cargo Electronic Unit - Lower Aft	CEU - LWR AFT	26
Cargo Electronic Unit - Lower Forward	CEU - LWR FWD	26
Cargo Electronic Unit - Main Aft	CEU - MAIN AFT	26
Cargo Fire Control Panel	CFCP	26
Common Display System	CDS	31
Compartment Overheat Detection Control Module	WING/BODY OHT	26
Digital Flight Control System	DFCS	22
Distance Measurement Equipment Interrogator	DME INTROGTR	34
Electrical Meters, Battery, and Galley Power Module	P5-13	24
Electronic Engine Controller - 1	ENGINE - 1	73
Electronic Engine Controller - 2	ENGINE - 2	73
Emergency Locator Transmitter	ELT	23
Engine Accessory Unit	EAU	78
Engine Accessory Unit/TR DEPLOY ENG 1	EAU/TR DPLOY-ENG 1	78
Engine Accessory Unit/TR DEPLOY ENG 2	EAU/TR DPLOY-ENG 2	78
Engine Accessory Unit/TR STOW ENG 1	EAU/TR STOW-ENG 1	78
Engine Accessory Unit/TR STOW ENG 2	EAU/TR STOW-ENG 2	78
Engine and Auxiliary Power Unit Fire Detection Control Module	ENG/APU FIRE	26
Enhanced Digital Flight Control Computer-A	EDFCC-A	22
Enhanced Digital Flight Control System	EDFCS	22
Flap/Slat Electronics Unit	FSEU	27
Flight Data Acquisition Unit	FDAU	31

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

Page 101
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

<u>LRU/SYSTEM</u>	<u>SHORT NAME</u>	<u>CHAPTER</u>
Flight Management Computer System	FMCS	34
Fuel Quantity Indicating System	FQIS	28
Generator Control Unit - 1	GCU - 1	24
Generator Control Unit - 2	GCU - 2	24
Ground Proximity Computer	GROUND PROX	34
High Frequency Transceiver	HF XCVR	23
Multi-Mode Receiver	MMR	34
Nitrogen Generation System BITE Display Unit	NGS	47
Pack Flow Temperature Controller	PFTC	21
Pack/Zone Temperature Controller - Left	PACK/ZN CON - L	21
Pack/Zone Temperature Controller - Right	PACK/ZN CON - R	21
Proximity Switch Electronics Unit	PSEU	32
Radio Altimeter Receiver/Transmitter	RADIO ALTIMTR	34
Satellite Communications System	SATCOM	23
Stall Management Yaw Damper Computer - 1	SMYD - 1	27
Stall Management Yaw Damper Computer - 2	SMYD - 2	27
Traffic Alert and Collision Avoidance System Computer	TCAS COMPUTER	34
VHF Omnidirectional Ranging Marker Beacon Receiver	VOR/MKR RCVR	34
Very High Frequency Transceiver	VHF XCVR	23
Waste Tank Logic Control Module	WASTE TANK	38
Weather Radar Receiver/Transmitter	WEATHER RADAR	34
Window Heat Control Unit - Left Forward	WHCU - L FWD	30
Window Heat Control Unit - Left Side	WHCU - L SIDE	30
Window Heat Control Unit - Right Forward	WHCU - R FWD	30
Window Heat Control Unit - Right Side	WHCU - R SIDE	30
Window Heat Control Unit 1 - Left Forward and Right Side	WHCU1 - L FWD/R SIDE	30
Window Heat Control Unit 2 - Right Forward and Left Side	WHCU2 - R FWD/L SIDE	30

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

Page 102
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	A/B CNTL	32-42 TASK 807
ANTISKID	A/B SEL	32-42 TASK 821
ANTISKID	A/B SOL	32-42 TASK 808
ANTISKID	A/B SYS	32-42 TASK 803
ANTISKID	A/G 1	32-42 TASK 823
ANTISKID	A/G 2	32-42 TASK 823
ANTISKID	A/G SW	32-42 TASK 823
ANTISKID	ADIRU L	32-42 TASK 824
ANTISKID	ADIRU R	32-42 TASK 825
ANTISKID	BOX 1-4	32-42 TASK 803
ANTISKID	BOX 1	32-42 TASK 803
ANTISKID	BOX 2-3	32-42 TASK 803
ANTISKID	BOX 2	32-42 TASK 803
ANTISKID	BOX 3	32-42 TASK 803
ANTISKID	BOX 4	32-42 TASK 803
ANTISKID	BOX A/B (or BOX AB/B)	32-42 TASK 803
ANTISKID	BOX BITE	32-42 TASK 803
ANTISKID	CNTLP SW	32-42 TASK 810
ANTISKID	GEARSW1	32-42 TASK 812
ANTISKID	GEARSW2	32-42 TASK 812
ANTISKID	IB CFG	32-42 TASK 837
ANTISKID	OB CFG	32-42 TASK 835
ANTISKID	PARKBRK	32-42 TASK 811
ANTISKID	PRESL	32-42 TASK 822
ANTISKID	PRESR	32-42 TASK 822
ANTISKID	PRG XCMP	32-42 TASK 836
ANTISKID	PWR 1-4	32-42 TASK 802
ANTISKID	PWR 2-3	32-42 TASK 802
ANTISKID	PWR A/B	32-42 TASK 826
ANTISKID	PWR BITE	32-42 TASK 826
ANTISKID	SOL P SW	32-42 TASK 809
ANTISKID	SP CO LI	32-42 TASK 803
ANTISKID	SP CO RO	32-42 TASK 803
ANTISKID	SP SW LI	32-42 TASK 806
ANTISKID	SP SW LO	32-42 TASK 806

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

Page 103
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	SP SW RI	32-42 TASK 806
ANTISKID	SP SW RO	32-42 TASK 806
ANTISKID	SPLRHDL	32-42 TASK 827
ANTISKID	THR L 1	32-42 TASK 813
ANTISKID	THR L 2	32-42 TASK 813
ANTISKID	THR R 1	32-42 TASK 813
ANTISKID	THR R 2	32-42 TASK 813
ANTISKID	THR SW	32-42 TASK 813
ANTISKID	VLV 1-2	32-42 TASK 805
ANTISKID	VLV 1	32-42 TASK 804
ANTISKID	VLV 2	32-42 TASK 804
ANTISKID	VLV 3-4	32-42 TASK 805
ANTISKID	VLV 3	32-42 TASK 804
ANTISKID	VLV 4	32-42 TASK 804
ANTISKID	WHLMECH1	32-42 TASK 838
ANTISKID	WHLMECH2	32-42 TASK 838
ANTISKID	WHLMECH3	32-42 TASK 838
ANTISKID	WHLMECH4	32-42 TASK 838
ANTISKID	XDCR 1	32-42 TASK 806
ANTISKID	XDCR 2	32-42 TASK 806
ANTISKID	XDCR 3	32-42 TASK 806
ANTISKID	XDCR 4	32-42 TASK 806
PSEU	27-62001 SPDBRK DN FAULT	27-62 TASK 808
PSEU	27-62002 SBRK GT ARMD FLT	27-62 TASK 809
PSEU	27-62003 ALT L LT 800 FLT	32-61 TASK 823
PSEU	27-62004 ALT R LT 800 FLT	32-61 TASK 823
PSEU	27-65001 ALT L LT 800	32-61 TASK 823
PSEU	27-65002 ALT R LT 800	32-61 TASK 823
PSEU	27-65003 SBRK GT ARMED	27-62 TASK 809
PSEU	27-65004 SPDBRK DOWN	27-62 TASK 808
PSEU	27-66001 SPDBRK EXT FLT	27-62 TASK 810
PSEU	29-20001 NO LGTV PRI PWR	29-20 TASK 807
PSEU	29-20002 NO LGTV SEC PWR	29-20 TASK 808
PSEU	29-22001 ENG RUN L FAULT	29-20 TASK 809
PSEU	29-22002 HYD QTY B FAULT	29-20 TASK 810

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

Page 104
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	29-22003 HYD QTY BITE FLT	29-20 TASK 811
PSEU	29-22004 ALT NOSE STRG FLT	29-20 TASK 812
PSEU	29-22005 LGTV SET FAULT	29-20 TASK 813
PSEU	29-22105 LGTV SET FAULT	29-20 TASK 813
PSEU	29-23001 ENG NOT RUNNING	29-20 TASK 809
PSEU	29-23002 ALT NOSE STRG SEL	29-20 TASK 812
PSEU	29-24001 PRI LGTV FAIL	29-20 TASK 805
PSEU	29-24002 SEC LGTV FAIL	29-20 TASK 806
PSEU	29-24003 LGTV RESET	29-20 TASK 813
PSEU	31-51001 GSBV CL FAULT	32-61 TASK 825
PSEU	31-51101 GSBV CL FAULT	32-61 TASK 825
PSEU	31-52001 TOW INHB FAULT	32-09 TASK 810
PSEU	31-52002 TRA L LT 53 FAULT	32-09 TASK 815
PSEU	31-52003 TRA R LT 53 FAULT	32-09 TASK 815
PSEU	31-52004 STAB TRIM DISAGREE	32-09 TASK 817
PSEU	31-52005 LE FLAPS EXT FLT	32-09 TASK 812
PSEU	31-52006 T/O FLPS A FAULT	32-09 TASK 814
PSEU	31-52007 T/O FLPS B FAULT	32-09 TASK 814
PSEU	31-52008 GS PRESS A FAULT	32-61 TASK 824
PSEU	31-52009 GS PRESS B FAULT	32-61 TASK 824
PSEU	31-52010 SPDBRK UP FAULT	27-62 TASK 808
PSEU	31-52011 LE FP EX BITE FLT	32-09 TASK 812
PSEU	31-52012 LE EXT IN FAULT	32-09 TASK 812
PSEU	31-52108 GS PRESS A FAULT	32-61 TASK 824
PSEU	31-52109 GS PRESS B FAULT	32-61 TASK 824
PSEU	31-52208 GS PRESS A FAULT	32-61 TASK 824
PSEU	31-52209 GS PRESS B FAULT	32-61 TASK 824
PSEU	31-53001 GS PRESS A GT 750	31-51 TASK 804
PSEU	31-53002 GS PRESS B GT 750	31-51 TASK 804
PSEU	31-53003 NOT STAB TRM GRN	31-51 TASK 821
PSEU	31-53007 SPDBRK HDL UP or NOT SBRK HDL DOWN	27-62 TASK 808
PSEU	31-53008 NOT T/O FLAPS A	32-09 TASK 814
PSEU	31-53009 NOT T/O FLAPS B	32-09 TASK 814
PSEU	31-53010 LE FLAPS NOT EXT	32-09 TASK 812
PSEU	31-55001 GS PRESS A	31-51 TASK 804

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

Page 105
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	31-55002 GS PRESS B	31-51 TASK 804
PSEU	31-55003 GSBV CLOSED	31-51 TASK 805
PSEU	31-55004 LE FLAPS EXTEND	32-09 TASK 812
PSEU	31-55005 SPD BRK UP	31-51 TASK 806
PSEU	31-55006 STAB TRM GREEN	31-51 TASK 820
PSEU	31-55007 STAB TRM NOT GRN	31-51 TASK 821
PSEU	31-55008 T/O WARN INHIBIT	31-51 TASK 809
PSEU	31-55009 TAKEOFF FLAPS A	31-51 TASK 810
PSEU	31-55010 TAKEOFF FLAPS B	31-51 TASK 811
PSEU	31-55011 TRA LT 53 LEFT	32-09 TASK 815
PSEU	31-55012 TRA LT 53 RIGHT	32-09 TASK 815
PSEU	31-56001 GSBV CL OUT FLT	32-09 TASK 813
PSEU	31-56002 T/O WARN 1 FAULT	31-51 TASK 801
PSEU	31-56003 T/O WARN 2 FAULT	31-51 TASK 801
PSEU	32-01001 L ON GND A FAULT	32-09 TASK 803
PSEU	32-01002 N ON GND A FAULT	32-09 TASK 802
PSEU	32-01003 R ON GND A FAULT	32-09 TASK 803
PSEU	32-01004 L ON GND B FAULT	32-09 TASK 803
PSEU	32-01005 N ON GND B FAULT	32-09 TASK 802
PSEU	32-01006 R ON GND B FAULT	32-09 TASK 803
PSEU	32-01007 AIR/GND FAIL	32-09 TASK 819
PSEU	32-02001 PARK BRK FAULT	32-09 TASK 806
PSEU	32-03001 PARK BRK A SET	32-09 TASK 806
PSEU	32-03002 PARK BRK B SET	32-09 TASK 806
PSEU	32-04001 AIR/GND OVERRIDE	32-09 TASK 818
PSEU	32-05001 PARK A	32-09 TASK 806
PSEU	32-05002 PARK B	32-09 TASK 806
PSEU	32-06001 AIR/GND R584 FLT	32-09 TASK 804
PSEU	32-06002 AIR/GND R593 FLT	32-09 TASK 804
PSEU	32-06003 AIR/GND R587 FLT	32-09 TASK 804
PSEU	32-06004 AIR/GND R583 FLT	32-09 TASK 804
PSEU	32-06005 AIR/GND R589 FLT	32-09 TASK 804
PSEU	32-06006 AIR/GND R592 FLT	32-09 TASK 804
PSEU	32-06007 AIR/GND R594 FLT	32-09 TASK 804
PSEU	32-06008 LG LVR LCH FLT	32-09 TASK 807

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 106
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-06009 AIR/GND R585 FLT	32-09 TASK 804
PSEU	32-06010 AIR/GND R588 FLT	32-09 TASK 804
PSEU	32-06011 AIR/GND R595 FLT	32-09 TASK 804
PSEU	32-06012 AIR/GND R586 FLT	32-09 TASK 804
PSEU	32-06013 AIR/GND R590 FLT	32-09 TASK 804
PSEU	32-06014 AIR/GND R591 FLT	32-09 TASK 804
PSEU	32-06015 AIR/GND R597 FLT	32-09 TASK 804
PSEU	32-06016 NGS RLY FAULT	32-61 TASK 813
PSEU	32-60001 NO 28V A POWER	32-09 TASK 808
PSEU	32-60002 NO 28V B POWER	32-09 TASK 822
PSEU	32-61001 L DN LKD A FAULT	32-61 TASK 801
PSEU	32-61002 L UP LKD A FAULT	32-61 TASK 802
PSEU	32-61003 NOSE LKD A FAULT	32-61 TASK 804
PSEU	32-61004 NOSE DN A FAULT	32-61 TASK 803
PSEU	32-61005 R DN LKD A FAULT	32-61 TASK 801
PSEU	32-61006 R UP LKD A FAULT	32-61 TASK 802
PSEU	32-61007 L DN LKD B FAULT	32-61 TASK 801
PSEU	32-61008 L UP LKD B FAULT	32-61 TASK 802
PSEU	32-61009 NOSE DN B FAULT	32-61 TASK 803
PSEU	32-61010 NOSE LKD B FAULT	32-61 TASK 804
PSEU	32-61011 R DN LKD B FAULT	32-61 TASK 801
PSEU	32-61012 R UP LKD B FAULT	32-61 TASK 802
PSEU	32-61013 NOSE DN DISAGREE	32-61 TASK 803
PSEU	32-61101 L DN LKD A FAULT	32-61 TASK 801
PSEU	32-61102 L UP LKD A FAULT	32-61 TASK 802
PSEU	32-61103 NOSE LKD A FAULT	32-61 TASK 804
PSEU	32-61104 NOSE DN A FAULT	32-61 TASK 803
PSEU	32-61105 R DN LKD A FAULT	32-61 TASK 801
PSEU	32-61106 R UP LKD A FAULT	32-61 TASK 802
PSEU	32-61107 L DN LKD B FAULT	32-61 TASK 801
PSEU	32-61108 L UP LKD B FAULT	32-61 TASK 802
PSEU	32-61109 NOSE DN B FAULT	32-61 TASK 803
PSEU	32-61110 NOSE LKD B FAULT	32-61 TASK 804
PSEU	32-61111 R DN LKD B FAULT	32-61 TASK 801
PSEU	32-61112 R UP LKD B FAULT	32-61 TASK 802

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 107
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-62001 TRA L LT 44 FAULT	32-09 TASK 816
PSEU	32-62002 TRA R LT 44 FAULT	32-09 TASK 816
PSEU	32-62003 TRA L LT 64 FAULT	32-09 TASK 820
PSEU	32-62004 TRA R LT 64 FAULT	32-09 TASK 820
PSEU	32-62005 ALT L LT 200 FLT	32-61 TASK 805
PSEU	32-62006 ALT R LT 200 FLT	32-61 TASK 806
PSEU	32-62007 LEVER DN FAULT	32-61 TASK 809
PSEU	32-62008 LEVER UP FAULT	32-61 TASK 809
PSEU	32-62009 LDG FLAP A FAULT	32-61 TASK 815
PSEU	32-62010 LDG FLAP B FAULT	32-61 TASK 815
PSEU	32-62011 LDG WARN INHB FLT	32-61 TASK 822
PSEU	32-62014 LDG FLAP DISAGREE	32-61 TASK 815
PSEU	32-62107 LEVER DN FAULT	32-61 TASK 809
PSEU	32-62108 LEVER UP FAULT	32-61 TASK 809
PSEU	32-62777 L/R ALT FAIL	32-61 TASK 826
PSEU	32-64001 INTERNAL FAULT	32-09 TASK 809
PSEU	32-64003 DISPATCH PER MEL	32-09 TASK 818
PSEU	32-64004 NO DISP FAULT	32-09 TASK 818
PSEU	32-65001 LANDING FLAPS A	32-61 TASK 815
PSEU	32-65002 LANDING FLAPS B	32-61 TASK 815
PSEU	32-66001 L GRN LT 1 FAULT	32-61 TASK 810
PSEU	32-66002 NOSE GRN LT 1 FLT	32-61 TASK 810
PSEU	32-66003 R GRN LT 1 FAULT	32-61 TASK 810
PSEU	32-66004 L RED LT 1 FAULT	32-61 TASK 810
PSEU	32-66005 NOSE RED LT 1 FLT	32-61 TASK 810
PSEU	32-66006 R RED LT 1 FAULT	32-61 TASK 810
PSEU	32-66007 DISPATCH 1 FAULT	32-61 TASK 818
PSEU	32-66010 NO DISP 1 FAULT	32-61 TASK 818
PSEU	32-66011 L GRN LT 2 FAULT	32-61 TASK 811
PSEU	32-66012 NOSE GRN LT 2 FLT	32-61 TASK 811
PSEU	32-66013 R GRN LT 2 FAULT	32-61 TASK 811
PSEU	32-66014 L RED LT 2 FAULT	32-61 TASK 812
PSEU	32-66015 NOSE RED LT 2 FLT	32-61 TASK 812
PSEU	32-66016 R RED LT 2 FAULT	32-61 TASK 812
PSEU	32-66017 DISPATCH 2 FAULT	32-61 TASK 818

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

Page 108
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-66018 LDG WARN FAULT	32-61 TASK 816
PSEU	32-66020 NO DISP 2 FAULT	32-61 TASK 818
PSEU	52-71001 FWD ENTR DR OPEN	52-10 TASK 801
PSEU	52-71002 FWD SERV DR OPEN	52-10 TASK 801
PSEU	52-71003 AFT ENTR DR OPEN	52-10 TASK 801
PSEU	52-71004 AFT SER DR OPEN	52-10 TASK 801
PSEU	52-72001 FWD CGO DR OPEN	52-30 TASK 803
PSEU	52-72002 AFT CGO DR OPEN	52-30 TASK 803
PSEU	52-72003 FWD ACC DR OPEN	52-40 TASK 801
PSEU	52-72004 EE ACC DR OPEN	52-40 TASK 802
PSEU	52-72005 L FL SW FAULT	52-20 TASK 801
PSEU	52-72006 L FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72007 L FL SW FAULT	52-20 TASK 801
PSEU	52-72008 R FL SW FAULT	52-20 TASK 801
PSEU	52-72009 R FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72010 L OW SW A FAULT	52-20 TASK 802
PSEU	52-72011 L OW SW B FAULT	52-20 TASK 802
PSEU	52-72012 L FWD OW SW A FLT	52-20 TASK 802
PSEU	52-72013 L FWD OW SW B FLT	52-20 TASK 802
PSEU	52-72014 R OW SW A FAULT	52-20 TASK 802
PSEU	52-72015 R OW SW B FAULT	52-20 TASK 802
PSEU	52-72016 R FWD OW SW A FLT	52-20 TASK 802
PSEU	52-72017 R FWD OW SW B FLT	52-20 TASK 802
PSEU	52-72018 ENG RUN R FAULT	52-20 TASK 803
PSEU	52-72019 OVWG OPT FAULT	52-20 TASK 804
PSEU	52-72020 L OW SW DISAGREE	52-20 TASK 805
PSEU	52-72021 L FWD OW SW DSGR	52-20 TASK 805
PSEU	52-72022 R OW SW DISAGREE	52-20 TASK 805
PSEU	52-72023 R FWD OW SW DSGR	52-20 TASK 805
PSEU	52-72024 FOUR OW OPT FLT	52-20 TASK 804
PSEU	52-72104 MD CD TOW DISABLED	31-51 TASK 823
PSEU	52-72106 L FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72107 L FL SW FAULT	52-20 TASK 801
PSEU	52-72108 R FL SW FAULT	52-20 TASK 801
PSEU	52-72109 R FWD FL SW FAULT	52-20 TASK 801

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

Page 109
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	52-74001 L OVWG OPEN	52-20 TASK 806
PSEU	52-74002 L FWD OW OPEN	52-20 TASK 806
PSEU	52-74003 R OVWG OPEN	52-20 TASK 806
PSEU	52-74004 R FWD OW OPEN	52-20 TASK 806
PSEU	52-76001 EQPT WARN FLT	52-10 TASK 802
PSEU	52-76003 AFT CGO WARN FLT	52-10 TASK 802
PSEU	52-76004 AFT ENTR WARN FLT	52-10 TASK 802
PSEU	52-76005 AFT SERV WARN FLT	52-10 TASK 802
PSEU	52-76012 AIRSTAIR WARN FLT	52-10 TASK 802
PSEU	52-76014 FWD CGO WARN FLT	52-10 TASK 802
PSEU	52-76015 FWD ENTR WARN FLT	52-10 TASK 802
PSEU	52-76016 FWD SERV WARN FLT	52-10 TASK 802
PSEU	52-76017 FL RELAY 1 FAULT	52-20 TASK 807
PSEU	52-76018 FL RELAY 2 FAULT	52-20 TASK 807
PSEU	52-76019 LOW WARN FLT	52-20 TASK 808
PSEU	52-76020 L FWD OW WARN FLT	52-20 TASK 808
PSEU	52-76021 R OW WARN FLT	52-20 TASK 808
PSEU	52-76022 R FWD OW WARN FLT	52-20 TASK 808

EFFECTIVITY
SIA ALL

32-MAINT MSG INDEX

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 110
Feb 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

801. Proximity Switch Electronics Unit (PSEU) BITE Procedure

A. General

- (1) You do the Proximity Switch Electronic Unit (PSEU) Built-In-Test Equipment (BITE) test at the front of the PSEU module. The PSEU is in the forward electrical equipment bay. These are the menu items in the PSEU display panel that you will use in this task to read out stored faults or test for faults:
 - (a) EXISTING FAULTS
 - (b) FAULT HISTORY
 - (c) GROUND TEST -> SELF TEST.
- (2) If the PSEU light is currently ON in the flight deck, the EXISTING FAULTS report will list both active and latched faults resulting from the PSEU continuous testing of discrete inputs and outputs, sensor interfaces, and PSEU internal testing. Do the steps in the "B" BITE Procedure to see EXISTING FAULTS. These faults generate fault messages on the PSEU display. A maintenance message identifies a specific failure which is found by the PSEU. The maintenance messages have English text and a seven digit number.
- (3) If the PSEU light was ON during the most recent flight, but is currently OFF, the EXISTING FAULTS will display NO FAULTS. Check for inactive faults in the most recent flight leg of the FAULT HISTORY report. The faults are grouped by flight leg. Flight leg 0 (LEG 0) is the most recent flight and includes faults that occurred on the ground after the most recent flight. Do the steps in the "C" BITE Procedure to see FAULT HISTORY.
- (4) Do the steps in the "D" Repair Confirmation if you performed maintenance for a PSEU fault message to see if the fault still exists. The PSEU SELF TEST is used for this purpose.

B. BITE Procedure to display Existing Faults

- (1) Check for Existing Faults. Use the PSEU BITE panel: (Figure 201, Figure 202)
 - (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door
 - (b) Push the ON/OFF switch.
NOTE: The display will show EXISTING FAULTS?
 - 1) If the BITE display stays blank, then, do this task: No BITE Display on the PSEU - Fault Isolation, 32-09 TASK 811.
 - (c) Push the YES switch. The display will show:
 - 1) Either the number of faults.
 - 2) Or the display will show NO FAULTS.
 - (d) If there are existing faults, then the display will show the number of faults in the PSEU. Do these steps:
NOTE: You should display and record all the existing faults before you perform any fault isolation. Maintenance messages could be added to, or removed, from the existing faults list when you perform the fault isolation.
 - 1) Push the down arrow to show the first fault.
 - 2) Push the down arrow to show MORE DETAILS?.
 - 3) Do these steps to show the details on the fault:
 - a) Push the YES switch.

EFFECTIVITY
SIA ALL

D633A103-SIA

32-09 TASK 801

Page 201
Jun 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- b) Record the maintenance message numbers.
- c) Refer to the table at the end of this task to find the fault isolation task for the maintenance message.

NOTE: Some maintenance messages report status of the PSEU. These maintenance messages, 32-04001, 32-64003, and 32-64004, are not faults. Continue to show the other existing maintenance messages to perform fault isolation.

- d) Push the down arrow to see if the message is latched.
 - e) Push the down arrow to see if there is any additional information on the fault.
 - f) RETURN TO LIST will show when there are no more details for the fault. Push the YES button to return to the fault message list.
- 4) The next fault will show on the BITE display. Repeat the previous steps to show all the existing faults and details.
- (e) If the test shows NO FAULTS, then do these steps then continue.
- 1) Push the MENU switch to return to the EXISTING FAULTS display.
 - 2) Push the down arrow switch until the display shows FAULT HISTORY?.
 - 3) Push the YES switch.
- NOTE: The display will show FLIGHT LEG 0?.
- 4) Push the YES switch.
 - 5) Write the maintenance message details.
 - 6) Push the down arrow switch to look for faults in FLIGHT LEG 0.
 - 7) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

C. BITE Procedure to display FAULT HISTORY

- (1) Check for Existing Faults. Use the PSEU BITE panel: (Figure 201, Figure 202)

- (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door

- (b) Push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?.

- 1) If the BITE display stays blank, then, do this task: No BITE Display on the PSEU - Fault Isolation, 32-09 TASK 811.

- (c) Push the NO switch.

- (d) Push the down arrow switch until the display shows FAULT HISTORY?.

NOTE: The display will show FLIGHT LEG 0?.

- 1) Push the YES switch.
- 2) Write the maintenance message details.
- 3) Push the down arrow switch.
- 4) Write the fault type data. These are the possible fault types:
 - a) HARD
 - b) INTERMITTENT

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

Page 202
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- c) REPEAT.
- 5) Push the MENU Switch
NOTE: This will return you to the FLIGHT LEG 0? display.
- 6) Push the down arrow switch to look for faults in other flight legs.
- 7) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

D. Repair Confirmation using PSEU Self Test.

- (1) Close this door: Forward Entry Door, FORWARD ENTRY DOOR - MAINTENANCE PRACTICES, AMM 52-11-00/201.
- (2) Prepare to do the SELF TEST for the PSEU:
 - (a) If it is necessary, open the

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door
 - (b) If the PSEU is not on, then push the ON/OFF switch.
NOTE: The display will show EXISTING FAULTS?.
 - (c) If it is necessary, push the MENU switch until EXISTING FAULTS? shows.
- (3) Do the SELF TEST for the PSEU:
 - (a) Push the down arrow until GROUND TEST? shows.
 - (b) Push the YES switch. The display will show REPLACE TEST.
 - (c) Push the down arrow until SELF TEST? shows.
 - (d) Push the YES switch to start the SELF TEST.
 - (e) SEE WARNINGS will show on the BITE display.
 - (f) ARE YOU SURE? will show on the BITE display.



WARNING

KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES. THESE COMPONENTS CAN MOVE SUDDENLY WHEN THE SELF TEST IS RUN. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (g) Make sure that all persons and equipment are clear on the flight control surfaces.
- (h) Push the YES switch after you completed the previous step.
- (i) TEST IN PROGRESS will show while the test runs.
- (j) When the self test is complete either:
 - 1) The number of faults will show.
 - 2) Or, TEST PASS will show.
 - 3) If the faults show, then repeat these steps until END OF LIST shows:
NOTE: RESET LATCHES will display before you reach the END OF LIST. Push the down arrow or NO switch. Do not push the YES switch unless you want to reset the latched faults.
 - a) Push the down arrow to show the first fault.
 - b) Push the down arrow to show MORE DETAILS?.
 - c) Push the YES switch to show the message number.

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

Page 203
Jun 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- d) Record the message number.
 - e) Push the MENU switch to return to the fault list.
 - f) Push the down arrow to show the next fault.
- 4) IF TEST PASS shows, then the self test passed with no faults found. You corrected the condition which caused the PSEU fault.
- (k) If you recorded faults, then examine the faults to determine if the original fault still exists.
 - (l) If the original fault still exists, then return to the fault isolation procedure.
 - (m) If other faults exist, then refer to the table at the end of this task to find the fault isolation task for the maintenance message.

NOTE: Some maintenance messages report status of the PSEU. These maintenance messages, 32-04001, 32-64003, and 32-64004, are not faults.

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	27-62001 SPDBRK DN FAULT	27-62 TASK 808
PSEU	27-62002 SBRK GT ARMD FLT	27-62 TASK 809
PSEU	27-62003 ALT L LT 800 FLT	32-61 TASK 823
PSEU	27-62004 ALT R LT 800 FLT	32-61 TASK 823
PSEU	27-65001 ALT L LT 800	32-61 TASK 823
PSEU	27-65002 ALT R LT 800	32-61 TASK 823
PSEU	27-65003 SBRK GT ARMED	27-62 TASK 809
PSEU	27-65004 SPDBRK DOWN	27-62 TASK 808
PSEU	27-66001 SPDBRK EXT FLT	27-62 TASK 810
PSEU	29-20001 NO LGTV PRI PWR	29-20 TASK 807
PSEU	29-20002 NO LGTV SEC PWR	29-20 TASK 808
PSEU	29-22001 ENG RUN L FAULT	29-20 TASK 809
PSEU	29-22002 HYD QTY B FAULT	29-20 TASK 810
PSEU	29-22003 HYD QTY BITE FLT	29-20 TASK 811
PSEU	29-22004 ALT NOSE STRG FLT	29-20 TASK 812
PSEU	29-22005 LGTV SET FAULT	29-20 TASK 813
PSEU	29-22105 LGTV SET FAULT	29-20 TASK 813
PSEU	29-23001 ENG NOT RUNNING	29-20 TASK 809
PSEU	29-23002 ALT NOSE STRG SEL	29-20 TASK 812
PSEU	29-24001 PRI LGTV FAIL	29-20 TASK 805
PSEU	29-24002 SEC LGTV FAIL	29-20 TASK 806
PSEU	29-24003 LGTV RESET	29-20 TASK 813
PSEU	31-51001 GSBV CL FAULT	32-61 TASK 825
PSEU	31-51101 GSBV CL FAULT	32-61 TASK 825
PSEU	31-52001 TOW INHB FAULT	32-09 TASK 810
PSEU	31-52002 TRA L LT 53 FAULT	32-09 TASK 815

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

Page 204
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	31-52003 TRA R LT 53 FAULT	32-09 TASK 815
PSEU	31-52004 STAB TRIM DISAGREE	32-09 TASK 817
PSEU	31-52005 LE FLAPS EXT FLT	32-09 TASK 812
PSEU	31-52006 T/O FLPS A FAULT	32-09 TASK 814
PSEU	31-52007 T/O FLPS B FAULT	32-09 TASK 814
PSEU	31-52008 GS PRESS A FAULT	32-61 TASK 824
PSEU	31-52009 GS PRESS B FAULT	32-61 TASK 824
PSEU	31-52010 SPDBRK UP FAULT	27-62 TASK 808
PSEU	31-52011 LE FP EX BITE FLT	32-09 TASK 812
PSEU	31-52012 LE EXT IN FAULT	32-09 TASK 812
PSEU	31-52108 GS PRESS A FAULT	32-61 TASK 824
PSEU	31-52109 GS PRESS B FAULT	32-61 TASK 824
PSEU	31-52208 GS PRESS A FAULT	32-61 TASK 824
PSEU	31-52209 GS PRESS B FAULT	32-61 TASK 824
PSEU	31-53001 GS PRESS A GT 750	31-51 TASK 804
PSEU	31-53002 GS PRESS B GT 750	31-51 TASK 804
PSEU	31-53003 NOT STAB TRM GRN	31-51 TASK 821
PSEU	31-53007 SPDBRK HDL UP or NOT SBRK HDL DOWN	27-62 TASK 808
PSEU	31-53008 NOT T/O FLAPS A	32-09 TASK 814
PSEU	31-53009 NOT T/O FLAPS B	32-09 TASK 814
PSEU	31-53010 LE FLAPS NOT EXT	32-09 TASK 812
PSEU	31-55001 GS PRESS A	31-51 TASK 804
PSEU	31-55002 GS PRESS B	31-51 TASK 804
PSEU	31-55003 GSBV CLOSED	31-51 TASK 805
PSEU	31-55004 LE FLAPS EXTEND	32-09 TASK 812
PSEU	31-55005 SPDBRK UP	31-51 TASK 806
PSEU	31-55006 STAB TRM GREEN	31-51 TASK 820
PSEU	31-55007 STAB TRM NOT GRN	31-51 TASK 821
PSEU	31-55008 T/O WARN INHIBIT	31-51 TASK 809
PSEU	31-55009 TAKEOFF FLAPS A	31-51 TASK 810
PSEU	31-55010 TAKEOFF FLAPS B	31-51 TASK 811
PSEU	31-55011 TRA LT 53 LEFT	32-09 TASK 815
PSEU	31-55012 TRA LT 53 RIGHT	32-09 TASK 815
PSEU	31-56001 GSBV CL OUT FLT	32-09 TASK 813
PSEU	31-56002 T/O WARN 1 FAULT	31-51 TASK 801

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 205
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	31-56003 T/O WARN 2 FAULT	31-51 TASK 801
PSEU	32-01001 L ON GND A FAULT	32-09 TASK 803
PSEU	32-01002 N ON GND A FAULT	32-09 TASK 802
PSEU	32-01003 R ON GND A FAULT	32-09 TASK 803
PSEU	32-01004 L ON GND B FAULT	32-09 TASK 803
PSEU	32-01005 N ON GND B FAULT	32-09 TASK 802
PSEU	32-01006 R ON GND B FAULT	32-09 TASK 803
PSEU	32-01007 AIR/GND FAIL	32-09 TASK 819
PSEU	32-02001 PARK BRK FAULT	32-09 TASK 806
PSEU	32-03001 PARK BRK A SET	32-09 TASK 806
PSEU	32-03002 PARK BRK B SET	32-09 TASK 806
PSEU	32-04001 AIR/GND OVERRIDE	32-09 TASK 818
PSEU	32-05001 PARK A	32-09 TASK 806
PSEU	32-05002 PARK B	32-09 TASK 806
PSEU	32-06001 AIR/GND R584 FLT	32-09 TASK 804
PSEU	32-06002 AIR/GND R593 FLT	32-09 TASK 804
PSEU	32-06003 AIR/GND R587 FLT	32-09 TASK 804
PSEU	32-06004 AIR/GND R583 FLT	32-09 TASK 804
PSEU	32-06005 AIR/GND R589 FLT	32-09 TASK 804
PSEU	32-06006 AIR/GND R592 FLT	32-09 TASK 804
PSEU	32-06007 AIR/GND R594 FLT	32-09 TASK 804
PSEU	32-06008 LG LVR LCH FLT	32-09 TASK 807
PSEU	32-06009 AIR/GND R585 FLT	32-09 TASK 804
PSEU	32-06010 AIR/GND R588 FLT	32-09 TASK 804
PSEU	32-06011 AIR/GND R595 FLT	32-09 TASK 804
PSEU	32-06012 AIR/GND R586 FLT	32-09 TASK 804
PSEU	32-06013 AIR/GND R590 FLT	32-09 TASK 804
PSEU	32-06014 AIR/GND R591 FLT	32-09 TASK 804
PSEU	32-06015 AIR/GND R597 FLT	32-09 TASK 804
PSEU	32-06016 NGS RLY FAULT	32-61 TASK 813
PSEU	32-60001 NO 28V A POWER	32-09 TASK 808
PSEU	32-60002 NO 28V B POWER	32-09 TASK 822
PSEU	32-61001 L DN LKD A FAULT	32-61 TASK 801
PSEU	32-61002 L UP LKD A FAULT	32-61 TASK 802
PSEU	32-61003 NOSE LKD A FAULT	32-61 TASK 804

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

Page 206
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-61004 NOSE DN A FAULT	32-61 TASK 803
PSEU	32-61005 R DN LKD A FAULT	32-61 TASK 801
PSEU	32-61006 R UP LKD A FAULT	32-61 TASK 802
PSEU	32-61007 L DN LKD B FAULT	32-61 TASK 801
PSEU	32-61008 L UP LKD B FAULT	32-61 TASK 802
PSEU	32-61009 NOSE DN B FAULT	32-61 TASK 803
PSEU	32-61010 NOSE LKD B FAULT	32-61 TASK 804
PSEU	32-61011 R DN LKD B FAULT	32-61 TASK 801
PSEU	32-61012 R UP LKD B FAULT	32-61 TASK 802
PSEU	32-61013 NOSE DN DISAGREE	32-61 TASK 803
PSEU	32-61101 L DN LKD A FAULT	32-61 TASK 801
PSEU	32-61102 L UP LKD A FAULT	32-61 TASK 802
PSEU	32-61103 NOSE LKD A FAULT	32-61 TASK 804
PSEU	32-61104 NOSE DN A FAULT	32-61 TASK 803
PSEU	32-61105 R DN LKD A FAULT	32-61 TASK 801
PSEU	32-61106 R UP LKD A FAULT	32-61 TASK 802
PSEU	32-61107 L DN LKD B FAULT	32-61 TASK 801
PSEU	32-61108 L UP LKD B FAULT	32-61 TASK 802
PSEU	32-61109 NOSE DN B FAULT	32-61 TASK 803
PSEU	32-61110 NOSE LKD B FAULT	32-61 TASK 804
PSEU	32-61111 R DN LKD B FAULT	32-61 TASK 801
PSEU	32-61112 R UP LKD B FAULT	32-61 TASK 802
PSEU	32-62001 TRA L LT 44 FAULT	32-09 TASK 816
PSEU	32-62002 TRA R LT 44 FAULT	32-09 TASK 816
PSEU	32-62003 TRA L LT 64 FAULT	32-09 TASK 820
PSEU	32-62004 TRA R LT 64 FAULT	32-09 TASK 820
PSEU	32-62005 ALT L LT 200 FLT	32-61 TASK 805
PSEU	32-62006 ALT R LT 200 FLT	32-61 TASK 806
PSEU	32-62007 LEVER DN FAULT	32-61 TASK 809
PSEU	32-62008 LEVER UP FAULT	32-61 TASK 809
PSEU	32-62009 LDG FLAP A FAULT	32-61 TASK 815
PSEU	32-62010 LDG FLAP B FAULT	32-61 TASK 815
PSEU	32-62011 LDG WARN INHB FLT	32-61 TASK 822
PSEU	32-62014 LDG FLAP DISAGREE	32-61 TASK 815
PSEU	32-62107 LEVER DN FAULT	32-61 TASK 809

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

Page 207
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-62108 LEVER UP FAULT	32-61 TASK 809
PSEU	32-62777 L/R ALT FAIL	32-61 TASK 826
PSEU	32-64001 INTERNAL FAULT	32-09 TASK 809
PSEU	32-64003 DISPATCH PER MEL	32-09 TASK 818
PSEU	32-64004 NO DISP FAULT	32-09 TASK 818
PSEU	32-65001 LANDING FLAPS A	32-61 TASK 815
PSEU	32-65002 LANDING FLAPS B	32-61 TASK 815
PSEU	32-66001 L GRN LT 1 FAULT	32-61 TASK 810
PSEU	32-66002 NOSE GRN LT 1 FLT	32-61 TASK 810
PSEU	32-66003 R GRN LT 1 FAULT	32-61 TASK 810
PSEU	32-66004 L RED LT 1 FAULT	32-61 TASK 810
PSEU	32-66005 NOSE RED LT 1 FLT	32-61 TASK 810
PSEU	32-66006 R RED LT 1 FAULT	32-61 TASK 810
PSEU	32-66007 DISPATCH 1 FAULT	32-61 TASK 818
PSEU	32-66010 NO DISP 1 FAULT	32-61 TASK 818
PSEU	32-66011 L GRN LT 2 FAULT	32-61 TASK 811
PSEU	32-66012 NOSE GRN LT 2 FLT	32-61 TASK 811
PSEU	32-66013 R GRN LT 2 FAULT	32-61 TASK 811
PSEU	32-66014 L RED LT 2 FAULT	32-61 TASK 812
PSEU	32-66015 NOSE RED LT 2 FLT	32-61 TASK 812
PSEU	32-66016 R RED LT 2 FAULT	32-61 TASK 812
PSEU	32-66017 DISPATCH 2 FAULT	32-61 TASK 818
PSEU	32-66018 LDG WARN FAULT	32-61 TASK 816
PSEU	32-66020 NO DISP 2 FAULT	32-61 TASK 818
PSEU	52-71001 FWD ENTR DR OPEN	52-10 TASK 801
PSEU	52-71002 FWD SERV DR OPEN	52-10 TASK 801
PSEU	52-71003 AFT ENTR DR OPEN	52-10 TASK 801
PSEU	52-71004 AFT SER DR OPEN	52-10 TASK 801
PSEU	52-72001 FWD CGO DR OPEN	52-30 TASK 803
PSEU	52-72002 AFT CGO DR OPEN	52-30 TASK 803
PSEU	52-72003 FWD ACC DR OPEN	52-40 TASK 801
PSEU	52-72004 EE ACC DR OPEN	52-40 TASK 802
PSEU	52-72005 L FL SW FAULT	52-20 TASK 801
PSEU	52-72006 L FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72007 L FL SW FAULT	52-20 TASK 801

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

Page 208
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	52-72008 R FL SW FAULT	52-20 TASK 801
PSEU	52-72009 R FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72010 L OW SW A FAULT	52-20 TASK 802
PSEU	52-72011 L OW SW B FAULT	52-20 TASK 802
PSEU	52-72012 L FWD OW SW A FLT	52-20 TASK 802
PSEU	52-72013 L FWD OW SW B FLT	52-20 TASK 802
PSEU	52-72014 R OW SW A FAULT	52-20 TASK 802
PSEU	52-72015 R OW SW B FAULT	52-20 TASK 802
PSEU	52-72016 R FWD OW SW A FLT	52-20 TASK 802
PSEU	52-72017 R FWD OW SW B FLT	52-20 TASK 802
PSEU	52-72018 ENG RUN R FAULT	52-20 TASK 803
PSEU	52-72019 OVWG OPT FAULT	52-20 TASK 804
PSEU	52-72020 L OW SW DISAGREE	52-20 TASK 805
PSEU	52-72021 L FWD OW SW DSGR	52-20 TASK 805
PSEU	52-72022 R OW SW DISAGREE	52-20 TASK 805
PSEU	52-72023 R FWD OW SW DSGR	52-20 TASK 805
PSEU	52-72024 FOUR OW OPT FLT	52-20 TASK 804
PSEU	52-72104 MD CD TOW DISABLED	31-51 TASK 823
PSEU	52-72106 L FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72107 L FL SW FAULT	52-20 TASK 801
PSEU	52-72108 R FL SW FAULT	52-20 TASK 801
PSEU	52-72109 R FWD FL SW FAULT	52-20 TASK 801
PSEU	52-74001 L OVWG OPEN	52-20 TASK 806
PSEU	52-74002 L FWD OW OPEN	52-20 TASK 806
PSEU	52-74003 R OVWG OPEN	52-20 TASK 806
PSEU	52-74004 R FWD OW OPEN	52-20 TASK 806
PSEU	52-76001 EQPT WARN FLT	52-10 TASK 802
PSEU	52-76003 AFT CGO WARN FLT	52-10 TASK 802
PSEU	52-76004 AFT ENTR WARN FLT	52-10 TASK 802
PSEU	52-76005 AFT SERV WARN FLT	52-10 TASK 802
PSEU	52-76012 AIRSTAIR WARN FLT	52-10 TASK 802
PSEU	52-76014 FWD CGO WARN FLT	52-10 TASK 802
PSEU	52-76015 FWD ENTR WARN FLT	52-10 TASK 802
PSEU	52-76016 FWD SERV WARN FLT	52-10 TASK 802
PSEU	52-76017 FL RELAY 1 FAULT	52-20 TASK 807

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

Page 209
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	52-76018 FL RELAY 2 FAULT	52-20 TASK 807
PSEU	52-76019 LOW WARN FLT	52-20 TASK 808
PSEU	52-76020 L FWD OW WARN FLT	52-20 TASK 808
PSEU	52-76021 R OW WARN FLT	52-20 TASK 808
PSEU	52-76022 R FWD OW WARN FLT	52-20 TASK 808

———— **END OF TASK** ————

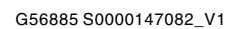
EFFECTIVITY
SIA ALL

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

32-09 TASK 801

Page 210
Jun 15/2023

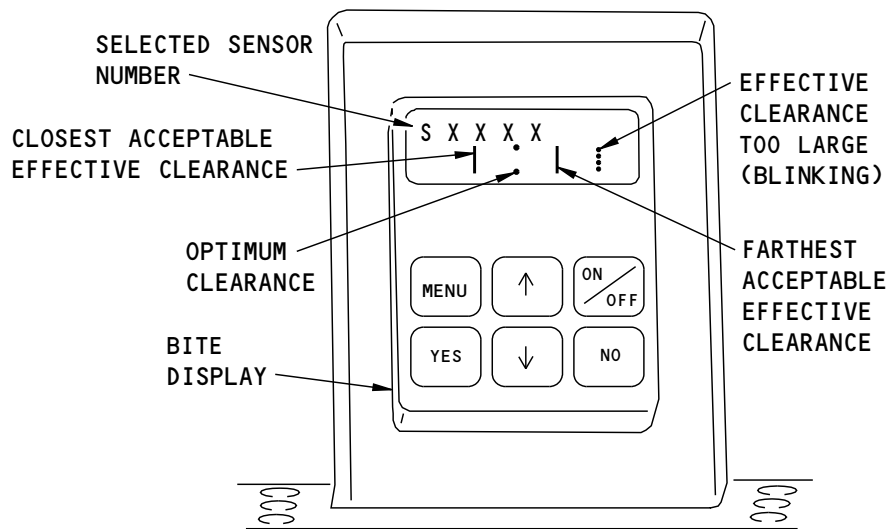


Proximity Switch Electronics Unit (PSEU) BITE
Figure 201/32-09-00-990-808 (Sheet 1 of 2)

32-09 TASK 801

Page 211
Jun 15/2022

737-600/700/800/900
FAULT ISOLATION MANUAL



BITE DISPLAY AND CONTROLS

(B)

G56888 S0000147083_V1

Proximity Switch Electronics Unit (PSEU) BITE
Figure 201/32-09-00-990-808 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

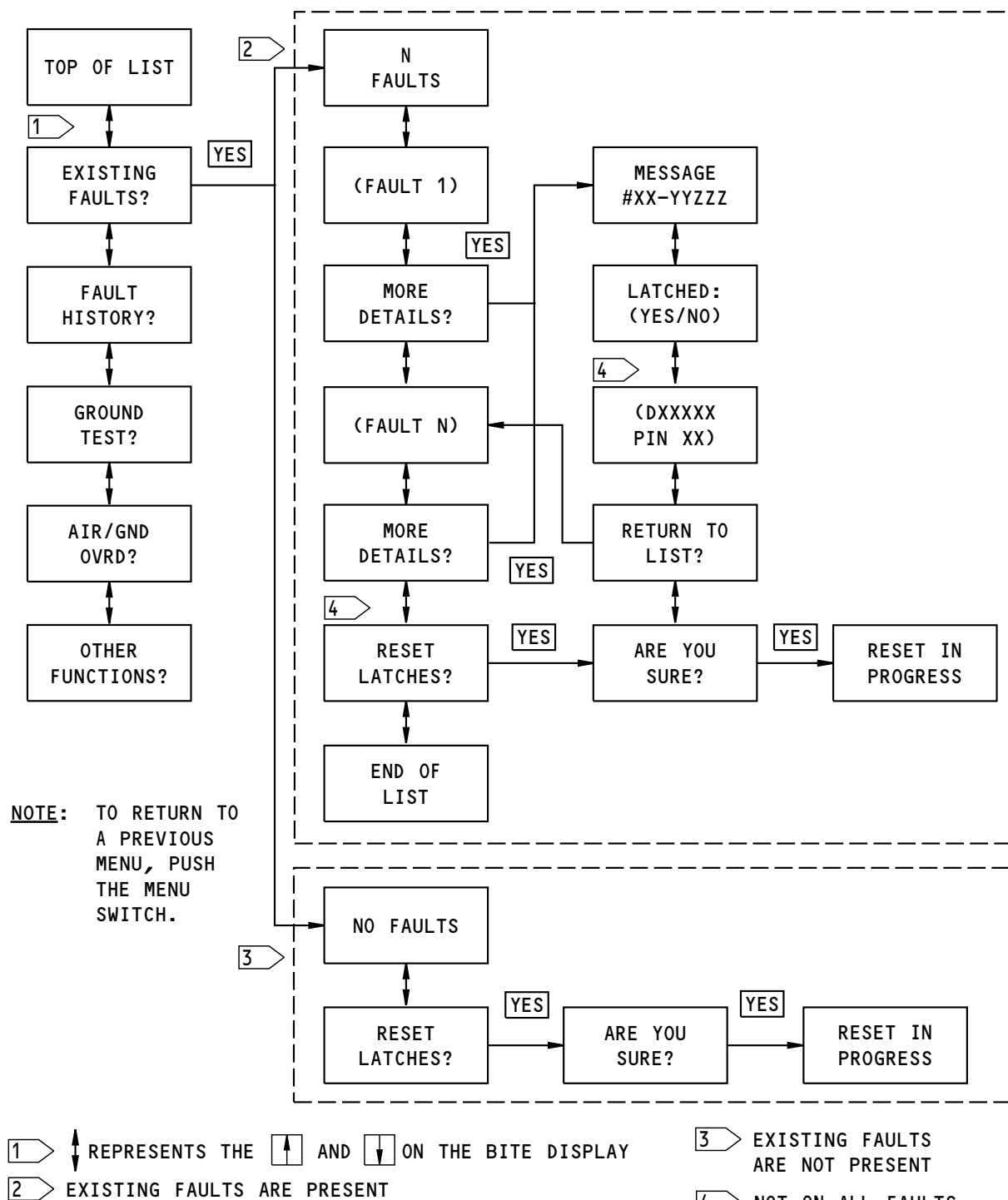
32-09 TASK 801

D633A103-SIA

Page 212
Jun 15/2022



737-600/700/800/900
FAULT ISOLATION MANUAL



H38469 S0000147084_V1

PSEU Bite Tree - Display Existing Fault Data
Figure 202/32-09-00-990-809 (Sheet 1 of 2)

EFFECTIVITY
SIA ALL

32-09 TASK 801

D633A103-SIA

Page 213
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

802. Nose Landing Gear Air/Ground Sensor Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 32-01002 N ON GND A FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-01102 N ON GND A FAULT

SIA ALL

(c) 32-01005 N ON GND B FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-01105 N ON GND B FAULT

SIA ALL

(2) These maintenance messages show that there is a problem with a nose landing gear air/ground sensor.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(a) Maintenance message number 32-01002 is set for this condition:

1) Sensor S1014 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.

2) There is sensor S1014 wiring fault.

(b) Maintenance message number 32-01102 is set for this condition:

1) Sensor S1014 shows the airplane on the ground with the airplane in the air mode.

2) There is sensor S1014 wiring fault.

(c) Maintenance message number 32-01005 is set for this condition:

1) Sensor S1015 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.

2) There is sensor S1015 wiring fault.

(d) Maintenance message number 32-01105 is set for this condition:

1) Sensor S1015 shows the airplane on the ground with the airplane in the air mode.

2) There is sensor S1015 wiring fault.

SIA ALL

B. Possible Causes

(1) Nose landing gear air/ground sensor, S1014 (S1015)

(2) PSEU, M2061

(3) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

EFFECTIVITY
SIA ALL

32-09 TASK 802

D633A103-SIA

Page 215
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

D. Related Data

- (1) Component Location (32-09 TASK SUPPORT Figure 301)
- (2) (SSM 32-09-11)
- (3) (SSM 32-09-12)
- (4) (SSM 32-31-11)
- (5) (SSM 32-31-12)

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Do these steps to show the status of the applicable air/ground sensor:
 - (a) Push the MENU switch until EXISTING FAULTS? shows.
 - (b) Push the down switch until OTHER FUNCTNS? shows.
 - (c) Push the YES switch to select OTHER FUNCTNS.
 - (d) Push the down switch until I/O MONITOR? shows.
 - (e) Push the YES switch to select I/O MONITOR.
 - (f) Push the down switch until SENSORS? shows.
 - (g) Push the YES switch to select SENSORS.
 - (h) Push the down or up switch until the sensor number shows.
 - 1) For maintenance message number 32-01002, show sensor S1014.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 2) For maintenance message number 32-01102, show sensor S1014.

SIA ALL

- 3) For maintenance message number 32-01005, show sensor S1015.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 4) For maintenance message number 32-01105, show sensor S1015.

SIA ALL

- (i) If the sensor status is TGT NEAR, then do this test of the other sensor state:
 - 1) Put a deactuator on the face of the sensor face.

NOTE: The deactuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent fault.

NOTE: You may measure the clearance between the sensor and target. This can help you determine if the sensor clearance is incorrect, (Nose Landing Gear Air/Ground Sensor Clearance Measurement, AMM TASK 32-09-02-220-801). An incorrect clearance can cause intermittent faults.
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (j) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-09 TASK 802

D633A103-SIA

Page 216
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
- (2) If the sensor status is TGT NEAR, with a deactuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:
 - 1) For maintenance message number 32-01002, disconnect connector D11142 from the PSEU.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 2) For maintenance message number 32-01102, disconnect connector D11142 from the PSEU.

SIA ALL

- 3) For maintenance message number 32-01005, disconnect connector D10988 from the PSEU.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 4) For maintenance message number 32-01105, disconnect connector D10988 from the PSEU.

SIA ALL

- 5) Verify that the resistance values for the sensor connections listed in the table below are within these limits:
 - a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue and yellow sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the FREQ button until 120 Hz is displayed in upper right corner.
 - d) Ensure that a reading is present on the LCR meter display, then put the LCR Meter in the Series Mode.
 - <1> For 878 LCR Meter.
 - <a> Press the L/C/R button twice to change to Resistance mode.
 - Push the DATA HOLD button once.
 - <c> Press and hold the D/Q button until "SER" is shown in the right corner of the LCR meter display.
 - <2> For 878A/878B/879/879B LCR Meter.
 - <a> Press the L/C/R button to change to Resistance mode.
 - Press and hold the L/C/R button for 2 seconds until "SER" is shown in the right corner of the LCR meter display
 - e) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
 - f) The resistance between the blue and yellow leads should be 344.5–351.5 Ω .

EFFECTIVITY
SIA ALL

32-09 TASK 802

D633A103-SIA

Page 217
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- <1> The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ω .

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The copper metal has a temperature coefficient of resistance which is approximately 0.40 Ω /degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω /degC from standard temperature (25degC)

- g) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red and yellow sensor leads.
- h) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
- i) Push the FREQ button until 120 Hz is displayed in upper right corner.
- j) Ensure that a reading is present on the LCR meter display, then put the LCR Meter in the Series Mode.

<1> For 878 LCR Meter.

- <a> Press the L/C/R button twice to change to Resistance mode.
- Push the DATA HOLD button once.
- <c> Press and hold the D/Q button until "SER" is shown in the right corner of the LCR meter display

<2> For 878A/878B/879/879B LCR Meter.

- <a> Press the L/C/R button to change to Resistance mode.
- Press and hold the L/C/R button for 2 seconds until "SER" is shown in the right corner of the LCR meter display

- k) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- l) The resistance between the red and yellow leads should be 27–33 Ω .



737-600/700/800/900 FAULT ISOLATION MANUAL

- <1> The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 Ω .

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The copper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC)

- 6) Re-connect connector D11142 or D10988 to the PSEU.
- 7) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 8) These are the connections on the sensor and the PSEU to check the resistances at:

Table 201

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S1014	YELLOW	GROUND
		D11142
	BLUE	pin 36
S1015	RED	D11142
		pin 60
	YELLOW	GROUND
		D10988
	BLUE	pin 23
		D10988
	RED	pin 42

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (SWPM 20-20-00).
 - 1) Make sure that the resistance is $\leq 0.001 \Omega$.
 - 2) If the resistance is $\geq 0.001 \Omega$, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
 - Nose Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-02-000-801

EFFECTIVITY
SIA ALL

32-09 TASK 802

D633A103-SIA

Page 219
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Nose Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-02-400-802
 - 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a deactuator installed, then do these steps:
 - (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Nose Landing Gear Air/Ground Sensor Clearance Measurement, AMM TASK 32-09-02-220-801.
 - (b) If the sensor clearance is not correct, then do these steps:
 - 1) Adjust the sensor clearance. To adjust the clearance, do this task: Nose Landing Gear Air/Ground Sensor Clearance Adjustment, AMM TASK 32-09-02-400-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the applicable sensor, S1014 (S1015). These are the tasks:
 - Nose Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-02-000-801
 - Nose Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-02-400-802
 - 2) Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is FAILSAFE, then do this test of the wiring:
 - (a) Disconnect the sensor leads from the applicable junction box. See AMM TASK 32-09-02-000-801 for details.
 - (b) Temporarily install the leads from a replacement sensor to the applicable junction box connector. See AMM TASK 32-09-02-400-802 for details.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - (e) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - 1) Replace the applicable sensor, S1014 (S1015). These are the tasks:
 - Nose Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-02-000-801
 - Nose Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-02-400-802
 - 2) Do the Repair Confirmation at the end of this task.
 - (f) If the sensor status is FAILSAFE, then do these steps and continue:
 - 1) Remove the replacement sensor leads from the junction box connector.
 - 2) Re-install the leads from the current air/ground sensor.
- (5) Do this check of the wiring:
 - (a) Do a wiring check between these connections on the sensor and the PSEU:

Table 202

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S1014	YELLOW	GROUND
		D11142
	BLUE	pin 36

EFFECTIVITY
SIA ALL

32-09 TASK 802

D633A103-SIA

Page 220
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Table 202 (Continued)

S1015			D11142
	RED	-----	pin 60
	YELLOW	-----	GROUND
			D10988
	BLUE	-----	pin 23
			D10988
	RED	-----	pin 42

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the Repair Confirmation at the end of this task.
- (c) If you do not find a problem with the wiring, then continue.
- (6) Do these steps to replace the PSEU, M2061:
 - (a) These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

G. Repair Confirmation

- (1) Do this test of the applicable air/ground sensor:
 - (a) Put a deactuator on the face of the sensor face.
 - (b) Remove the deactuator from the face of the sensor face.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.
 - 2) If the sensor test is not satisfactory, then continue the Fault Isolation at the subsequent step.

————— **END OF TASK** —————

803. Main Landing Gear Air/Ground Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-01001 L ON GND A FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 32-01101 L ON GND A FAULT

SIA ALL

- (c) 32-01003 R ON GND A FAULT

EFFECTIVITY
SIA ALL

32-09 TASKS 802-803

D633A103-SIA

Page 221
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (d) 32-01103 R ON GND A FAULT

SIA ALL

- (e) 32-01004 L ON GND B FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (f) 32-01104 L ON GND B FAULT

SIA ALL

- (g) 32-01006 R ON GND B FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (h) 32-01106 R ON GND B FAULT

SIA ALL

- (2) These maintenance messages show that there is a problem with a main landing gear air/ground sensor.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 32-01001 is set for this condition:
- 1) Sensor S1012 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1012 wiring fault.
- (b) Maintenance message number 32-01101 is set for this condition:
- 1) Sensor S1012 shows the airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1012 wiring fault.
- (c) Maintenance message number 32-01003 is set for this condition:
- 1) Sensor S1010 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1010 wiring fault.
- (d) Maintenance message number 32-01103 is set for this condition:
- 1) Sensor S1010 shows the airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1010 wiring fault.
- (e) Maintenance message number 32-01004 is set for this condition:
- 1) Sensor S1013 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1013 wiring fault.
- (f) Maintenance message number 32-01104 is set for this condition:
- 1) Sensor S1013 shows airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1013 wiring fault.
- (g) Maintenance message number 32-01006 is set for this condition:
- 1) Sensor S1011 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1011 wiring fault.
- (h) Maintenance message number 32-01106 is set for this condition:

EFFECTIVITY
SIA ALL

32-09 TASK 803

D633A103-SIA

Page 222
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- 1) Sensor S1011 shows airplane on the ground with the airplane in the air mode.
- 2) There is sensor S1011 wiring fault.

SIA ALL

B. Possible Causes

- (1) Left Main Landing Gear Air/Ground Sensor, S1012 (S1013)
- (2) Right Main Landing Gear Air/Ground Sensor, S1010 (S1011)
- (3) PSEU, M2061
- (4) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (32-09 TASK SUPPORT Figure 302)
- (2) WDM 32-31-11
- (3) WDM 32-31-12

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Do these steps to show the status of the applicable air/ground sensor:
 - (a) Push the MENU Switch until EXISTING FAULTS? shows.
 - (b) Push the DOWN Switch until OTHER FUNCTNS? shows.
 - (c) Push the YES Switch to select OTHER FUNCTNS.
 - (d) Push the DOWN Switch until I/O MONITOR? shows.
 - (e) Push the YES Switch to select I/O MONITOR.
 - (f) Push the DOWN Switch until SENSORS? shows.
 - (g) Push the YES Switch to select SENSORS.
 - (h) Push the DOWN or UP Switch until the sensor number shows:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-01001 or 32-01101, show sensor S1012.
- 2) For maintenance message number 32-01003 or 32-01103, show sensor S1010.
- 3) For maintenance message number 32-01004 or 32-01104, show sensor S1013.
- 4) For maintenance message number 32-01006 or 32-01106, show sensor S1011.

SIA ALL

EFFECTIVITY
SIA ALL

32-09 TASK 803

D633A103-SIA

Page 223
Oct 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- (i) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a deactuator on the face of the sensor face.
NOTE: The deactuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent fault.
NOTE: You may measure the clearance between the sensor and target. This can help you determine if the sensor clearance is incorrect, (Main Landing Gear Air/Ground Sensor Clearance Measurement, AMM TASK 32-09-01-400-802). An incorrect clearance can cause intermittent faults.
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (j) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
- (2) If the sensor status is TGT NEAR, with a deactuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps (WDM 32-31-11, WDM 32-31-12):

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-01001, 32-01101 or 32-01003 or 32-01103, disconnect connector D11142 from the PSEU.
- 2) For maintenance message number 32-01004, 32-01104, 32-01006 or 32-01106, disconnect connector D10988 from the PSEU.

SIA ALL

- 3) Verify that the resistance values for the sensor connections listed in the table below are within these limits:
 - a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue and yellow sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the FREQ button until 120 Hz is displayed in upper right corner.
 - d) Push and hold the L/C/R button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
NOTE: "ESR" appears in the upper right corner of the display to indicate that the meter is in the series mode.
 - e) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
 - f) The resistance between the blue and yellow leads should be 344.5–351.5 Ω .

EFFECTIVITY
SIA ALL

32-09 TASK 803

D633A103-SIA

Page 224
Oct 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- <1> The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ω .

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The copper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC)

- g) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red and yellow sensor leads.
- h) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
- i) Push the FREQ button until 120 Hz is displayed in upper right corner.
- j) Push and hold the L/C/R button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.

NOTE: "ESR" appears in the upper right corner of the display to indicate that the meter is in the series mode.

- k) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- l) The resistance between the red and yellow leads should be 27–33 Ω .

- <1> The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 Ω .

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The copper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC)

- 4) Re-connect connector D11142 (D10988) to the PSEU.

EFFECTIVITY
SIA ALL

32-09 TASK 803

D633A103-SIA

Page 225
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 5) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 6) These are the connections on the sensor and PSEU to check the resistances at:

Table 203

SENSOR	SENSOR LEAD		PSEU CONNECTOR
S1010	YELLOW	-----	GROUND
			D11142
			pin 35
	BLUE	-----	D11142
			pin 18
			pin 18
S1011	YELLOW	-----	GROUND
			D10988
			pin 10
	BLUE	-----	D10988
			pin 24
			pin 24
S1012	YELLOW	-----	GROUND
			D11142
			pin 61
	BLUE	-----	D11142
			pin 38
			pin 38
S1013	YELLOW	-----	GROUND
			D10988
			pin 40
	BLUE	-----	D10988
			pin 41
			pin 41

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and airplane structure (SWPM 20).
 - 1) Make sure that the resistance is $\leq 0.001 \Omega$.
 - 2) If the resistance is $\geq 0.001 \Omega$, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
 - Main Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-01-020-801
 - Main Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-01-400-801
 - 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.

EFFECTIVITY
SIA ALL

32-09 TASK 803

D633A103-SIA

Page 226
Oct 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- (3) If the sensor status is TGT FAR without a deactuator installed, then do these steps:
- Measure the clearance between the sensor and target. This is the task: Main Landing Gear Air/Ground Sensor Clearance Measurement, AMM TASK 32-09-01-400-802.
 - If the sensor clearance is not correct, then do these steps:
 - Adjust the sensor clearance. This is the task: Main Landing Gear Air/Ground Sensor Clearance Adjustment, AMM TASK 32-09-01-820-801.
 - Do the Repair Confirmation at the end of this task.
 - If the sensor clearance is correct, then do these steps:
 - Replace the applicable sensor. These are the tasks:
 - Main Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-01-020-801
 - Main Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-01-400-801
 - Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is FAILSAFE, then do this test of the wiring:
- Disconnect the sensor leads from the applicable junction box. See AMM TASK 32-09-01-020-801 for details.
 - Temporarily install the leads from a replacement sensor to the applicable junction box connector. See AMM TASK 32-09-01-400-801 for details.
 - Make sure the sensor is away from all metal objects.
 - Do the steps to show the sensor status again.
 - If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - Replace the applicable sensor. These are the tasks:
 - Main Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-01-020-801
 - Main Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-01-400-801
 - Do the Repair Confirmation at the end of this task.
 - If the sensor status is FAILSAFE, then do these steps and continue:
 - Remove the replacement sensor leads from the junction box connector.
 - Re-install the leads from the current air/ground sensor.
- (5) Do this check of the wiring (WDM 32-31-11, WDM 32-31-12):
- Do a wiring check between these connections on the sensor and PSEU:

Table 204

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S1010	YELLOW	GROUND
		D11142
	BLUE	pin 35
		D11142
	RED	pin 18
S1011	YELLOW	GROUND
		D10988
	BLUE	pin 10

EFFECTIVITY
SIA ALL

32-09 TASK 803

D633A103-SIA

Page 227
Oct 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

Table 204 (Continued)

			D10988
	RED	-----	pin 24
S1012	YELLOW	-----	GROUND
			D11142
	BLUE	-----	pin 61
			D11142
	RED	-----	pin 38
S1013	YELLOW	-----	GROUND
			D10988
	BLUE	-----	pin 40
			D10988
	RED	-----	pin 41

- (b) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Do the Repair Confirmation at the end of this task.
- (c) If you do not find a problem with the wiring, then continue.
- (6) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the post installation test in the PSEU installation procedure.
- (b) If the test operates correctly, then you corrected the problem.

G. Repair Confirmation

- (1) Do this test of the applicable air/ground sensor:
- (a) Put a deactuator on the face of the sensor face.
 - (b) Remove the deactuator from the face of the sensor face.
 - (c) Do the EXISTING FAULTS Test on the PSEU BITE Display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the problem.
 - 2) If the sensor test is not satisfactory, then continue the Fault Isolation at the subsequent step.

————— END OF TASK —————

804. Air/Ground Relay Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
- (a) 32-06001 AIR/GND R584 FLT
 - (b) 32-06002 AIR/GND R593 FLT
 - (c) 32-06003 AIR/GND R587 FLT

EFFECTIVITY
SIA ALL

32-09 TASKS 803-804

D633A103-SIA

Page 228
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (d) 32-06004 AIR/GND R583 FLT
 - (e) 32-06005 AIR/GND R589 FLT
 - (f) 32-06006 AIR/GND R592 FLT
 - (g) 32-06007 AIR/GND R594 FLT
 - (h) 32-06009 AIR/GND R585 FLT
 - (i) 32-06010 AIR/GND R588 FLT
 - (j) 32-06011 AIR/GND R595 FLT
 - (k) 32-06012 AIR/GND R586 FLT
 - (l) 32-06013 AIR/GND R590 FLT
 - (m) 32-06014 AIR/GND R591 FLT
 - (n) 32-06015 AIR/GND R597 FLT
- (2) These maintenance messages show that there is a problem with a air/ground relay.
- (a) The PSEU does not sense the expected load from the applicable air/ground relay.

B. Possible Causes

- (1) System 1 air/ground relay, R584, R587, R589, R592, R593, or R594
- (2) System 2 air/ground relay, R585, R588, R590, R591, R595, or R596
- (3) Wiring problem
- (4) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2
D	15	C01401	LANDING GEAR AIR/GND RELAY

D. Related Data

- (1) (SSM 32-09-11)
- (2) (SSM 32-09-12)
- (3) (WDM 32-31-11)
- (4) (WDM 32-31-12)

E. Initial Evaluation

- (1) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2
D	15	C01401	LANDING GEAR AIR/GND RELAY

- (a) If a circuit breaker opens, continue to troubleshoot.
 - (b) If the circuit breaker was open and stays closed, do the Repair Confirmation steps at the end of the procedure.
- (2) Make sure the relay is installed tightly in the J20 or J22 panel.

EFFECTIVITY
SIA ALL

32-09 TASK 804

D633A103-SIA

Page 229
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) If the relay is loose, then do these steps:
 - 1) Tighten the relay.
 - 2) Do the Repair Confirmation at the end of this task.
- (b) If the relay is secure, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check for power to the applicable relay:
 - (a) Remove the applicable relay.
 - (b) Do a check for 28 VDC between pin X1 of the relay socket and structure ground.
 - 1) If there is not 28 VDC at pin X1, then do these steps:
 - a) Repair the wiring between the circuit breaker and relay.
 - b) Re-install the relay.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If there is 28 VDC at pin X1, then continue.
- (2) Install a new relay.
 - (a) Do the Repair Confirmation at the end of this task.
 - 1) If the Repair Confirmation is not satisfactory, then continue.
- (3) Do this check of the wiring:
 - (a) Do a wiring check between these connections on the relay and PSEU:
NOTE: Relays R583, R586, and R597 are not installed.

Table 205

RELAY	RELAY LOCATION	RELAY CONNECTOR	INTERFACE
R583	SEE NOTE	SEE NOTE	PSEU - D11138 - PIN 36 CONNECTED TO PIN 39
R584	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 59
R585	J24	X1	C1401 - PANEL P6-3 D15
		X2	PSEU - D11140 - PIN 39
R586	SEE NOTE	SEE NOTE	PSEU - D11140 - PIN 20 CONNECTED TO PIN 9
R587	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 35
R588	J20	X1	C1401 - PANEL P6-3 D15
		X2	PSEU - D11140 - PIN 43
R589	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 21
R590	J20	X1	C1401 - PANEL P6-3 D15
		X2	PSEU - D11140 - PIN 9
R591	J20	X1	C1401 - PANEL P6-3 D15
		X2	PSEU - D11140 - PIN 44

EFFECTIVITY
SIA ALL

32-09 TASK 804

D633A103-SIA

Page 230
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Table 205 (Continued)

RELAY	RELAY LOCATION	RELAY CONNECTOR	INTERFACE
R592	J22	X1	C1355 - PANEL P6-3 C15
		X2	PSEU - D11138 - PIN 39
R593	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 20
R594	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 58
R595	J20	X1	C1355 - PANEL P6-3 C15
		X2	PSEU - D11140 - PIN 21
R596	J20	X1	C1355 - PANEL P6-3 C15
		X2	PSEU - D11140 - PIN 24
R597	SEE NOTE	SEE NOTE	PSEU - D11140 - PIN 23 CONNECTED TO PIN 44

- (b) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Do the Repair Confirmation at the end of this task.
- (c) If you do not find a problem with the wiring, then continue.
- (4) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the post installation test in the PSEU installation procedure.
- (b) If the test operates correctly, then you corrected the fault.

G. Repair Confirmation



OBEY THE PROCEDURE THAT PREPARES TO PUT THE AIRPLANE IN THE AIR MODE. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Prepare to put the airplane in the air mode. Do this task: Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801.
 - (2) Put the airplane in the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - (3) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
 - (4) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- (a) If you do not find the maintenance message, then you corrected the fault.

END OF TASK

EFFECTIVITY
SIA ALL

32-09 TASK 804

D633A103-SIA

Page 231
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

806. Parking Brake Switch Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-02001 PARK BRK FAULT
 - (b) 32-02002 PARK BRK A FAULT
 - (c) 32-02003 PARK BRK B FAULT
 - (d) 32-03001 PARK BRK A SET
 - (e) 32-03002 PARK BRK B SET
 - (f) 32-05001 PARK A
 - (g) 32-05002 PARK B
- (2) These maintenance messages show that there is a problem with a parking brake switch.
 - (a) Maintenance message number 32-02001 shows that the parking brake A and B switch conditions are not both true or both false.

NOTE: The parking brake A input is true when the input is grounded. The parking brake B input is true when the input is open.
 - (b) Maintenance message number 32-02002 shows that the parking brake A switch was set with the airplane in the air.
 - (c) Maintenance message number 32-02003 shows that the parking brake B switch was set with the airplane in the air.
 - (d) Maintenance message numbers 32-03001 and 32-03002 are not faults. These messages show the cause of the last takeoff warning.
 - (e) Maintenance message numbers 32-05001 and 32-05002 will show when input from the parking brake switch has not been cycled between the on and off state during the current flight leg.

B. Possible Causes

- (1) Parking brake switch, S100
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-44-11)
- (2) (WDM 32-44-11)

E. Initial Evaluation

- (1) Make sure chocks are installed at the landing gear wheels.
 - (a) If chocks are not installed, install the chocks.
- (2) Do this test of the parking brake switch in the "not set" position:

EFFECTIVITY
SIA ALL

32-09 TASK 806

D633A103-SIA

Page 232
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) Make sure that the parking brake lever is not set:
 - (b) Show the input status for these parking brake switch outputs on the PSEU display:
NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).
 - 1) D10984 pin 28 (Parking Brake B)
 - 2) D10982 pin 61 (Parking Brake A)
 - 3) Make sure that the status of D10984 pin 28 is GND.
 - 4) Make sure that the status of D10982 pin 61 is NO GND.
 - (c) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
 - (d) If the status of the pins are correct, then continue.
- (3) Do this test of the parking brake switch with the parking brake lever in the SET position:
- (a) Put the parking brake lever in the SET position.
 - (b) Show the input status for these parking brake switch outputs on the PSEU display:
 - 1) D10984 pin 28
 - 2) D10982 pin 61
 - 3) Make sure that the status of D10984 pin 28 is NO GND.
 - 4) Make sure that the status of D10982 pin 61 is GND.
 - (c) If the status of the pins are correct, then there was an intermittent fault.
 - (d) If the status of the pins are not correct, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

NOTE: You must do the steps in the Initial Evaluation before you do these steps.

- (1) Do this test of the parking brake switch:
 - (a) Remove the connector from the parking brake switch.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) If the Initial Evaluation failed with the parking brake lever in the "not set" position, then do these steps:
 - 1) Put the parking brake lever in the "not set" position.
 - 2) Measure the resistance between these pins on the parking brake switch:

Table 206

PARKING BRAKE SWITCH		EXPECTED CONDITION	
pin 2C	-----	pin 2NC	continuity
pin 2C	-----	pin 2NO	open

- (d) If the Initial Evaluation failed with the parking brake lever in the SET position, then do these steps:
 - 1) Put the parking brake lever in the SET position.
 - 2) Measure the resistance between these pins on the parking brake switch:



737-600/700/800/900 FAULT ISOLATION MANUAL

Table 207

PARKING BRAKE SWITCH		EXPECTED CONDITION	
pin 2C	-----	pin 2NC	open
pin 2C	-----	pin 2NO	continuity

- (e) If the conditions in the tables do not exist, then do these steps:
- 1) Replace the parking brake switch, S100. These are the tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
 - 2) Do the Repair Confirmation at the end of this task.
- (f) If the conditions in the tables exist, then continue.
- (2) Do this test to make sure the parking brake switch is grounded:
- (a) Do a continuity check between pin 2C on the connector to the parking brake switch and structure ground.
 - (b) If there is not continuity, then do these steps:
 - 1) Repair the wiring between the connector and structure ground.
 - 2) Re-connect the connector on the parking brake switch.
 - 3) Do the Repair Confirmation at the end of this task.
 - (c) If there is continuity, then continue.
- (3) Do this check of the PSEU:
- (a) Remove the connectors, D10984 and D10982 from the PSEU.
 - (b) Show the input status for these parking brake switch outputs on the PSEU display:
 - 1) D10984 pin 28
 - 2) D10982 pin 61
 - (c) If the status of both pins are NO GND, then do these steps:
 - 1) Ground the pins with jumpers.
 - 2) Show the input status for the parking brake switch outputs on the PSEU display.
 - 3) If the input status of both pins show GND, then do these steps:
 - a) Repair the wiring between the parking brake switch and the PSEU.
 - b) Re-connect the connector on the parking brake switch.
 - c) Re-connect the connectors on the PSEU.
 - d) Do the Repair Confirmation at the end of this task.
 - 4) If the input status of either pin is NO GND, then continue.
 - (d) If the status of either pin is GND, then continue.
- (4) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the Repair Confirmation at the end of this task.



**737-600/700/800/900
FAULT ISOLATION MANUAL**

G. Repair Confirmation

- (1) Do this test of the parking brake switch:
 - (a) If it is necessary, re-connect the connector on the parking brake switch.
 - (b) If it is necessary, re-connect the connectors on the PSEU.
 - (c) Put the parking brake lever in the "not set" position.
 - (d) Put the parking brake lever in the set position.
 - (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.

———— **END OF TASK** ————

807. Landing Gear Lever Latch Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-06008 LG LVR LCH FLT
- (2) This maintenance message shows that there is a problem with the landing gear lever latch solenoid. The PSEU does not sense the expected load from the solenoid.

B. Possible Causes

- (1) Landing gear control lever, M1952
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

D. Related Data

- (1) (SSM 32-09-11)
- (2) (WDM 32-31-11)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-09 TASKS 806-807

D633A103-SIA

Page 235
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Fault Isolation Procedure



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Do this test of the landing gear control lever and wiring:
 - (a) Remove the connector D11138 from the PSEU.
 - (b) Do a check for 28 VDC between pin 19 of connector D11138 and structure ground.
 - (c) If there is 28 VDC at pin 19 of D11138, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, you corrected the fault.
 - (d) If there is not 28 VDC at pin 19 of D11138, then continue.
- (3) Do this test for power to the landing gear control lever lock solenoid:
 - (a) Do the applicable steps in (AMM TASK 32-31-31-020-801) to remove the connector D11990 from the landing gear control lever.
 - (b) Do a check for 28 VDC between pin 9 of connector D11990 and structure ground.
 - (c) If there is not 28 VDC at pin 9 of D11990, then do these steps:
 - 1) Do a check of the wiring between the control lever lock solenoid and the following circuit breaker:
 - a) This is the circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
 - 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the PSEU.
 - c) Re-connect the connector on the control lever.
 - d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - e) If you do not find the maintenance message, then you corrected the fault.
 - 3) If you do not find a problem with the wiring, then do these steps:
 - a) Replace this circuit breaker:

EFFECTIVITY
SIA ALL

32-09 TASK 807

D633A103-SIA

Page 236
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

<1> This is the circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

- b) Re-connect the connector on the PSEU.
- c) Re-connect the connector on the control lever.
- d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- e) If you do not find the maintenance message, then you corrected the fault.
- (d) If there is 28 VDC at pin 9 of D11990, then continue:
- (4) Replace the landing gear lever lock solenoid, M1952. These are the tasks:
 - Landing Gear Control Lever Lock Solenoid Removal, AMM TASK 32-31-31-020-801
 - Landing Gear Control Lever Lock Solenoid Installation, AMM TASK 32-31-31-400-801
- (a) Re-connect the connector on the PSEU.
- (b) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- (c) If you do not find the maintenance message, then you corrected the fault.
- (d) If you find the maintenance message, then continue.
- (5) Do this wiring check between the landing gear lever lock solenoid and the PSEU:
 - (a) Do the applicable steps in (AMM TASK 32-31-31-020-801) to remove the connector D11990 from the landing gear control lever.
 - (b) Remove the connector D11138 from the PSEU.
 - (c) Do a check for continuity between these pins:

Table 208

LG LEVER LATCH SOLENOID - D11990

pin 8

PSEU - D11138

pin 19

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-connect the connector on the lever latch solenoid.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.

————— **END OF TASK** —————

808. No 28 VDC A Input Power to PSEU - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-60001 NO 28V A POWER

EFFECTIVITY
SIA ALL

32-09 TASKS 807-808

D633A103-SIA

Page 237
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- (2) This maintenance message shows that there is not 28 VDC primary input power to the PSEU.

B. Possible Causes

- (1) Wiring problem
(2) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI

D. Related Data

- (1) (SSM 32-64-11)
(2) (SSM 32-64-12)
(3) (WDM 32-64-11)
(4) (WDM 32-64-12)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
(a) If you do not find the maintenance message, then there was an intermittent fault.
(b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the 28 VDC input to the PSEU:
(a) Remove the connector D11138 from the PSEU.
(b) Examine the connector and socket for damage or unwanted material.
(c) Do a check for 28 VDC between pin 61 of the connector and structure ground.
(d) If there is not 28 VDC at pin 61, then do these steps:
1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI

- 2) Do a check for continuity between these pins:

Table 209

CIRCUIT BREAKER C1399 - P6-3 D1

PSEU - D11138

pin 1

pin 61

- 3) If you find a problem with the wiring, then do these steps:
a) Repair the wiring.
b) Re-connect the connector on the PSEU.

EFFECTIVITY
SIA ALL

32-09 TASK 808

D633A103-SIA

Page 238
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- c) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI

- d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- e) If you do not find the maintenance message, then you corrected the fault.
- 4) If you do not find a problem with the wiring, then do these steps:
- a) Replace this circuit breaker:
- <1> This is the circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI

- b) Re-connect the connector on the PSEU.
- c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- d) If you do not find the maintenance message, then you corrected the fault.
- (e) If there is 28 VDC at pin 61, then continue.
- (2) Do this test of the primary ground for the PSEU:
- (a) Do a check for continuity between pin 41 of the connector and structure ground.
- (b) If pin 41 does not have continuity to ground, then do these steps:
- 1) Repair the wiring between D11138 pin 41 and structure ground.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.
- (c) If pin 41 has continuity to structure ground, then continue.
- (3) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the post installation test in the PSEU installation procedure.
- (b) If the test operates correctly, then you corrected the fault.

————— **END OF TASK** —————

809. Proximity Switch Electronics Unit (PSEU) Internal Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
- (a) 32-64001 INTERNAL FAULT

EFFECTIVITY
SIA ALL

32-09 TASKS 808-809

D633A103-SIA

Page 239
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

B. Possible Causes

- (1) PSEU, M2061
- (2) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) SSM 32-61-11
- (2) SSM 32-61-12
- (3) WDM 32-64-11
- (4) WDM 32-64-12

E. Initial Evaluation

- (1) On the PSEU display panel, make sure that the maintenance message 32-64001 PSEU Internal Fault shows on the FAULT HISTORY page (Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801).
- (2) Do the self test for the PSEU (Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801).
 - (a) If TEST PASS shows, then this is an intermittent fault.
 - (b) If the maintenance message 32-64001 PSEU Internal Fault shows, then do the fault isolation procedure below.

F. Fault Isolation Procedure

- (1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) If the maintenance message does not show, then you corrected the fault.
 - (b) If the maintenance message shows, then continue.
- (2) Remove connectors D11138 and D11140 from the PSEU.
 - (a) Examine the socket and respective connector for damage or unwanted material.
 - (b) Re-connect the connectors on the PSEU.
- (3) Remove connectors D11138 and D11140 from the PSEU.
 - (a) Examine the socket and respective connector for damage or unwanted material.
 - (b) Re-connect the connectors on the PSEU.
- (4) Do this check of the wiring (WDM 32-64-11, WDM 32-64-12):
 - (a) Make sure that the resistance values are within the limits (Table 210).

NOTE: Use an Ohm Meter capable of making accurate resistance measurements at low resistances.



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Table 210

BUNDLE	WIRE	FROM	TO	RESISTANCE (OHMS)
C01399	PSEU PRIMARY POWER			
286A0044	274	C01399	D40820J	0.23
286A6208	575	D40820P	D40818P	0.20
286A0111	745	D40818J	D40452J	0.10
286A5156	544	D40452P	D11138 (Pin 61)	0.32
286A5156	545	D11138 (Pin 41)	GD00044	0.03
Contacts				0.25
Airframe				0.25
Meter				1.00
			Total	2.39
			Limit	2.75
C1400	PSEU ALTERNATE POWER			
286A0044	275	C01400	D40750J	0.13
286A5158	589	D40750P	D11140 (Pin 41)	0.22
286A5158	590	D11140 (Pin 61)	GD00034	0.04
Contacts				0.15
Airframe				0.25
Meter				1.00
			Total	1.79
			Limit	2.00

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

- 1) Repair the wiring.
- 2) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do the Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801.
- (2) Do the Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- (3) Do the Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- (4) Do the EXISTING FAULTS test on the PSEU BITE display (32-09 TASK 801).
 - (a) If the maintenance message does not show, then you corrected the fault.

———— **END OF TASK** ————

810. Take Off Warning (TOW) Inhibit Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 31-52001 TOW INHB FAULT

EFFECTIVITY
SIA ALL

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

32-09 TASKS 809-810

Page 241
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (2) This maintenance message shows that TOW INHIBIT (Landing Gear Takeoff Warning Cutoff) is true.

B. Possible Causes

- (1) Circuit breaker, C1398
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

D. Related Data

- (1) (SSM 31-53-11)
- (2) (WDM 31-53-11)

E. Initial Evaluation

- (1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

- (2) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- (a) If you do not find the maintenance message, then there was an intermittent fault or the circuit breaker was open.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the input from the landing gear takeoff warning switch:
- (a) Show the input status for these pins on the PSEU display:
NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).
 - (b) Show D10982 pin 52.
 - (c) If the status of the pin is GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
 - (d) If the status of the pin is NO GND, then continue.
- (2) Do this check of the PSEU:

EFFECTIVITY
SIA ALL

32-09 TASK 810

D633A103-SIA

Page 242
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) Remove the connector D10982 from the PSEU.
 - (b) Make sure pin 52 on the connector has continuity to structure ground.
 - (c) If the pin is grounded, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
 - (d) If the pin is not grounded, then continue.
 - (3) Do this check of the circuit breaker:
 - (a) Get access to the circuit breaker terminals.
 - (b) Do a check for continuity between the two terminals on the circuit breaker.
 - (c) If there is not continuity, then do these steps:
 - 1) Replace this circuit breaker:
 - a) This is the circuit breaker:
- F/O Electrical System Panel, P6-3**
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|-------------------------------------|
| C | 18 | C01398 | LANDING GEAR TAKEOFF WARNING CUTOFF |
- 2) Re-connect connector D10982 to the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.
 - (d) If there is continuity, then continue.
 - (4) Do this check of the wiring:
 - (a) Get access to the circuit breaker terminals.
 - (b) Do a check for continuity between pin L on the circuit breaker and structure ground.
 - (c) If the pin does not have continuity to ground, then do these steps:
 - 1) Repair the wiring between the circuit breaker and structure ground.
 - 2) Re-connect connector D10982 to the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.
 - (d) If the pin has continuity to ground, then continue.
 - (5) Do this wiring check between the PSEU and this circuit breaker:
 - (a) This is the circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

EFFECTIVITY
SIA ALL

32-09 TASK 810

D633A103-SIA

Page 243
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) Remove the connector D10982 from the PSEU.
- (c) Do a check for continuity between these pins on the circuit breaker and connector D10982 for the PSEU:

Table 211

CIRCUIT BREAKER C1398

PSEU

terminal B

pin 52

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.

END OF TASK

811. No BITE Display on the PSEU - Fault Isolation

A. Description

- (1) The PSEU BITE display does not come on when the ON/OFF switch on the PSEU is pushed.

B. Possible Causes

- (1) Forward access door switch, S196
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 52-71-12)
- (2) (WDM 52-71-12)

E. Initial Evaluation

- (1) Make sure that these circuit breakers are open:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

Wait a minimum of five (5) seconds.

EFFECTIVITY
SIA ALL

32-09 TASKS 810-811

D633A103-SIA

Page 244
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

- (2) Push the ON/OFF switch on the PSEU BITE display.
 - (a) If the display does not come on, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the forward access door switch:
 - (a) Remove the terminal lug from the common terminal of the forward access door switch.
 - (b) Push the ON/OFF switch on the PSEU BITE panel.
 - (c) If the display comes on, then do these steps:
 - 1) Replace the forward access door switch, S196. These are the tasks:
 - Forward Access Door Indication Switch Removal, AMM TASK 52-71-41-000-801
 - Forward Access Door Indication Switch Installation, AMM TASK 52-71-41-400-801
 - 2) Push the ON/OFF switch on the PSEU BITE.
 - 3) If the BITE display comes on, then you corrected the fault.
 - (d) If the display does not come on, then continue.
- (2) Do this wiring check between the forward access door switch and the PSEU:
 - (a) Remove the connector D10988 from the PSEU.
 - (b) Do a check for continuity between these pins:

FORWARD ACCESS DOOR SWITCH	PSEU
COMMON	pin 6

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Push the ON/OFF switch on the PSEU BITE.
 - 4) If the BITE display comes on, then you corrected the fault.
 - (d) If you did not find a problem with the wiring, then continue.
- (3) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the post installation test in the PSEU installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
SIA ALL

32-09 TASK 811

D633A103-SIA

Page 245
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

812. Leading Edge Flaps Position Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 31-52005 LE FLAPS EXT FLT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 31-52105 LE FLAPS EXT FLT

SIA ALL

(c) 31-52011 LE FP EX BITE FLT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 31-52111 LE FP EX BITE FLT

SIA ALL

(e) 31-52012 LE EXT IN FLT

(f) 31-53010 LE FLAPS NOT EXT

(g) 31-55004 LE FLAPS EXTEND

(2) These maintenance messages show that there is a fault with a flap position sensor.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(a) Maintenance message number 31-52005 is set for this condition:

1) A leading edge did not go to the not extended position while in the air and the flight was longer than 25 minutes.

(b) Maintenance message number 31-52105 is set for this condition:

1) The leading edges are not detected as extended and these conditions exist:

- a) The thrust lever resolver angles are not less than 53.
- b) Takeoff flaps A or Takeoff flaps B is true.
- c) The airplane is on the ground.

(c) Maintenance message number 31-52011 is set for this condition:

1) The leading edge flaps extension BITE did not go FALSE since the last takeoff and the flight was longer than 25 minutes.

(d) Maintenance message number 31-52111 is set for this condition:

1) The leading edges flaps extension BITE is false and these conditions exist:

- a) The thrust lever resolver angles are not less than 53.
- b) Takeoff flaps A or Takeoff flaps B is true.
- c) The airplane is on the ground.

SIA ALL

(e) Maintenance message number 31-52012 shows that there is a problem with the signal from the FSEU.

(f) Maintenance message number 31-53010. This indicates that the FSEU has annunciated a position error in the leading edge flaps/slats or trailing edge flaps. Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.

(g) Maintenance message number 32-55004 shows that the input has not toggled since the last take off.

EFFECTIVITY
SIA ALL

32-09 TASK 812

D633A103-SIA

Page 246
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

B. Possible Causes

- (1) Flap slat electronics unit (FSEU), M1746, annunciation of a position error in leading edge flaps/slats or trailing edge flaps
- (2) Wiring
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C01208	STALL WARN ASYM MODE

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	C00211	FLIGHT CONTROL FSEU DC 1
A	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

- (1) (SSM 27-81-11)
- (2) (SSM 31-53-11)
- (3) (WDM 27-81-11)
- (4) (WDM 31-53-11)

E. Initial Evaluation

- (1) Do this test of the leading edge flaps position indication:
 - (a) Make sure that the leading edge flaps are not extended.
 - (b) Show the input status for these pins on the PSEU display:
NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).
 - 1) D10986 pin 27
 - 2) D10986 pin 48
 - (c) Make sure that the status of both pins is GND.
 - (d) Extend the leading edge slats.
 - (e) Make sure that the status of these pins is NO GND:
 - 1) D10986 pin 27
 - 2) D10986 pin 48
 - (f) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
 - (g) If the status of the pins are correct, then there was an intermittent fault.

F. Fault Isolation Procedure

- (1) Do the EXISTING FAULTS test on the FSEU. Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
 - (a) If any FSEU maintenance messages show, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-09 TASK 812

D633A103-SIA

Page 247
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- a) If the Repair Confirmation is not satisfactory, then continue.
- (b) If no FSEU maintenance messages show, then continue.
- (2) Do this test of the FSEU:
 - (a) Remove the FSEU. To remove the FSEU, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.
 - (b) Examine the connector pins and sockets for damage and unwanted material.
 - (c) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

 - 1) D10986 pin 27
 - 2) D10986 pin 48
 - (d) If the status of both pins is NO GND, then do these steps:
 - 1) Ground pin B12 on the FSEU connector with a jumper wire.
 - 2) Show the input status for the pins again.
 - 3) If the status of both pins is GND, then do these steps:
 - a) Install a new FSEU, M1746. Do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
 - b) Do the Repair Confirmation at the end of this task.
 - 4) If the status of either pin is NO GND, then continue.
 - (e) If the status of either pin is GND, then continue.
- (3) Do this test of the PSEU:
 - (a) Remove the connector D10986 from the PSEU.
 - (b) Examine the connector pins and sockets for damage and unwanted material.
 - (c) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

 - 1) D10986 pin 27
 - 2) D10986 pin 48
 - (d) If the status of either pin is GND, then continue.
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (e) If the status of both pins is NO GND, then do these steps:
 - 1) Ground pins 27 and 48 on the PSEU with a jumper wire.
 - 2) Show the input status for the pins again.
 - 3) If the status of either pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:



737-600/700/800/900 FAULT ISOLATION MANUAL

- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- b) Do the Repair Confirmation at the end of this task.
- 4) If the status of both pins is GND, then continue.
- (4) Do this check of the wiring between the PSEU and the FSEU:
- (a) Do a wiring check between these pins of connector D728A at the FSEU and connector D10986 at the PSEU:
- | D728A | D10986 |
|---------|--------|
| pin B12 | pin 27 |
| pin B12 | pin 48 |
- (b) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the connector on the PSEU.
 - 3) Re-install the FSEU. To install the FSEU, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
 - 4) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the leading edge flaps position indication:
- (a) If it is necessary, re-install the FSEU. Do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
- (b) If it is necessary, re-connect the connectors on the PSEU.
- (c) Extend the leading edge flaps. Do this task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.
- (d) Retract the leading edge flaps. Do this task: Retract the Trailing Edge Flaps, AMM TASK 27-51-00-860-804.
- (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- 1) If you do not find the maintenance message, then you corrected the fault.

————— END OF TASK —————

813. Ground Spoiler Interlock Valve Position Test Connector - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
- (a) 31-56001 GSBV CL OUT FLT
- (2) There is a fault with the ground spoiler interlock valve position test connector on the E1-1 shelf.

B. Possible Causes

- (1) Wiring problem
- (2) Proximity switch electronics unit (PSEU), M2061

EFFECTIVITY
SIA ALL

32-09 TASKS 812-813

D633A103-SIA

Page 249
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 31-53-11)
(2) (WDM 31-53-11)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
(a) If you do not find the maintenance message, then there was an intermittent fault.
(b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this wiring check between the test connector D10064 on the E1-1 shelf and the PSEU:
(a) Remove the connector D11142 from the PSEU.
(b) Do a check for continuity between these pins of the test connector D10064 and connector D11142:

D10064	D11142
pin 45	pin 7

- (c) If you find a problem with the wiring, then do these steps:
1) Repair the wiring.
2) Re-connect the connector on the PSEU.
3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
4) If the maintenance message does not show, then you corrected the fault.
(d) If you do not find a problem with the wiring, then continue.
(2) Replace the PSEU, M2061. These are the tasks:
• Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
• Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
(a) Do the post installation test in the PSEU installation procedure.
(b) If the test operates correctly, then you corrected the fault.

———— **END OF TASK** ————

814. Takeoff Flaps - Fault Isolation

A. Description

- (1) These tasks are for these maintenance messages:
(a) 31-52006 T/O FLPS A FAULT

EFFECTIVITY
SIA ALL

32-09 TASKS 813-814

D633A103-SIA



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) 31-52007 T/O FLPS B FAULT
- (c) 31-53008 NOT T/O FLAPS A
- (d) 31-53009 NOT T/O FLAPS B

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (e) 31-52106 T/O FLPS A FAULT
- (f) 31-52107 T/O FLPS B FAULT

SIA ALL

- (2) There is a fault with the trailing edge takeoff flaps signal from the stall management yaw damper (SMYD).

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 31-52006 is set for this condition:
 - 1) Upon landing, whenever TAKEOFF FLAPS A has not been false (SMYD 2 reporting that the Left TE flaps are in takeoff configuration (extended)) for at least 1.5 seconds, while the airplane was in air for at least 5 seconds and
 - 2) The time from takeoff to landing has exceeded 25 minutes.
- (b) Maintenance message number 31-52106 is set for this condition:
 - 1) TAKEOFF FLAPS A is false (SMYD 2 reporting that the Left TE flaps are not in takeoff configuration) and
 - 2) The thrust lever resolver angles are greater than 53 degrees for both Left and Right resolvers, and
 - 3) LE FLAPS EXT (leading edge flaps are extended) and
 - 4) TAKEOFF FLAPS B is true (SMYD 1 reporting that the Right TE flaps are in takeoff configuration) and
 - 5) Aircraft is on ground for at least 5 seconds.
- (c) Maintenance message number 31-52007 is set for this condition:
 - 1) Upon landing, whenever TAKEOFF FLAPS B has not been false (SMYD 1 reporting that the Right TE flaps are in takeoff configuration (extended)) for at least 1.5 seconds, while the airplane was in air for at least 5 seconds and
 - 2) The time from takeoff to landing has exceeded 25 minutes.
- (d) Maintenance message number 31-52107 is set for this condition:
 - 1) The TAKEOFF FLAPS B is false (SMYD 1 reporting that the Right TE flaps are not in takeoff configuration) and
 - 2) The thrust lever resolver angles are greater than 53 degrees for both Left and Right resolvers and
 - 3) LE FLAPS EXT (leading edge flaps are extended) and
 - 4) TAKEOFF FLAPS A is true (SMYD 2 reporting that the Left TE flaps are in takeoff configuration) and
 - 5) Aircraft is on ground for at least 5 seconds.

SIA ALL

- (e) Maintenance message numbers 31-53008 and 31-53009 are not faults. These show the cause of the last takeoff warning.

EFFECTIVITY
SIA ALL

32-09 TASK 814

D633A103-SIA

Page 251
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

B. Possible Causes

- (1) Loose or contaminated connectors
- (2) Wiring between the L (R) Flap Position Transmitter, T427 (T428) and the Stall Management Yaw Damper (SMYD) 1 (2), M1747 (M1748)
- (3) Wiring between one or more SMYDs and PSEU
- (4) SMYD 1 (2), M1747 (M1748)
- (5) Proximity Sensor Electronics Unit (PSEU), M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) SSM 27-32-11
- (2) SSM 27-32-21
- (3) SSM 31-53-11
- (4) SSM 32-61-21
- (5) WDM 27-32-11
- (6) WDM 27-32-21
- (7) WDM 31-53-11
- (8) WDM 32-64-21

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test in the PSEU BITE Procedure. This is the task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you find the maintenance message, then do the Fault Isolation Procedure below.
 - (b) If you do not find the maintenance message, then there was an intermittent fault.

F. Fault Isolation Procedure

- (1) Do the EXISTING FAULTS test in the SMYD BITE Procedure for the applicable SMYD. This is the task: Stall Management Yaw Damper BITE Procedure, 27-32 TASK 801.

NOTE: This fault may be caused by the L (R) Flap Position Transmitter, T427 (T428). The related maintenance messages are:

- 27-31005 FLAP sig error
- 27-21029 FLAP sig inactive
- 27-32005 FLAP sig error
- 27-32029 FLAP sig inactive

- (a) If you find maintenance messages for the SMYD, then do these steps
 - 1) Go to the Fault Isolation task for the applicable maintenance message to correct the fault.
 - 2) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-09 TASK 814

D633A103-SIA

Page 252
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- (b) If you do not find any maintenance messages for the SMYD, then continue.
- (2) Do this test of the trailing edge flaps position indication:
- (a) Make sure that the trailing edge flaps are not extended.
- (b) Show the input status for these pins on the PSEU display:
- NOTE: If you need instructions on how to show the input status, then go to this task:
32-09 TASK 821
- 1) D10982 pin 15
- 2) D10982 pin 31
- (c) Make sure that the status of both pins is GND.
- (d) Put the trailing edge flaps in a takeoff configuration. This is the task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.
- (e) Make sure that the status of these pins is NO GND:
- 1) D10982 pin 15
- 2) D10982 pin 31
- (f) If the status of the pins are not correct, then do these steps.
- 1) Repair the wiring between the PSEU and the applicable SMYD (WDM 31-53-11, WDM 32-64-21).
- 2) Do the Repair Confirmation at the end of this task.
- (g) If the status of the pins are correct, then continue.
- 1) Return the trailing edge flaps to their usual configuration. This is the task: Retract the Trailing Edge Flaps, AMM TASK 27-51-00-860-804
- (3) Replace the applicable SMYD. These are the tasks:
- Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
 - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do the EXISTING FAULTS test in the PSEU BITE Procedure. This is the task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- (a) If you do not find the maintenance message, then you have corrected the fault.
- (b) If you find the maintenance message, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

815. TRA Sensor Input for Take Off Warning Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
- (a) 31-52002 TRA L LT 53 FAULT

EFFECTIVITY
SIA ALL

32-09 TASKS 814-815

D633A103-SIA

Page 253
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 31-52102 TRA L LT 53 FAULT

SIA ALL

- (c) 31-52003 TRA R LT 53 FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (d) 31-52103 TRA R LT 53 FAULT

SIA ALL

- (e) 31-55011 TRA LT 53 LEFT
(f) 31-55012 TRA LT 53 RIGHT

- (2) These maintenance messages show that there is a problem with an Autothrottle Switch Pack or associated wiring.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 31-52002 is set for this condition:
1) The Left Thrust Lever Resolver angle is less than 53 during takeoff.
(b) Maintenance message number 31-52102 is set for this condition:
1) The Left Thrust Lever Resolver angle is not less than 53 while landing.
(c) Maintenance message number 31-52003 is set for this condition:
1) The Right Thrust Lever Resolver angle is less than 53 during takeoff.
(d) Maintenance message number 31-52103 is set for this condition:
1) The Right Thrust Lever Resolver angle is not less than 53 while landing.

SIA ALL

- (e) Maintenance message number 31-55011 shows that the input the left thrust lever less than 53 switch did not change condition since the last takeoff.
(f) Maintenance message number 31-55012 shows that the right thrust lever less than 53 switch did not change condition since the last takeoff.

B. Possible Causes

- (1) Autothrottle Switch Pack, M1766 (M1767)
(2) Wiring
(3) PSEU, M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) SSM 31-53-11
(2) WDM 31-53-11

EFFECTIVITY
SIA ALL

32-09 TASK 815

D633A103-SIA

Page 254
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

E. Initial Evaluation

- (1) Do this test of the TRA outputs:
 - (a) Make sure that the throttles are in the idle position.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) Show the input status for these pins on the PSEU Display:

NOTE: If you need instructions on how to show the input status, then go to this task:
Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure,
32-09 TASK 821.

- 1) For maintenance messages 31-52002, 31-52102, and 31-55011, show the status of D10982 pin 42.
- 2) For maintenance messages 31-52003, 31-52103, and 31-55012, show the status of D10984 pin 42.

SIA ALL

- (c) Make sure that the status of the pin is NO GND.
- (d) Put the throttles in a position greater than 53 degrees.
- (e) Make sure that the status of the pin is GND.
- (f) If the status of the pins are correct, then there was an intermittent fault.
- (g) If the status of the pins are not correct, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure



OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. WHEN YOU MOVE THE THRUST LEVER FORWARD, THE WEATHER RADAR SYSTEM COMES ON AUTOMATICALLY WHILE THE CIRCUIT BREAKER IS CLOSED. MAKE SURE THAT ALL PERSONNEL ARE MORE THAN 15 FT (5 M) FROM THE ANTENNA WHEN IT TRANSMITS RF ENERGY. RF ENERGY CAN KILL OR CAUSE INJURIES TO PERSONS, AND CAUSE DAMAGE TO EQUIPMENT.

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

- (1) If the Initial Evaluation failed in the idle position, then do this check of the Left (Right) Autothrottle Switch Pack:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance messages 31-52002, 31-52102, and 31-55011, disconnect the connector D11128 from the Left Autothrottle Switch Pack.
- (b) For maintenance messages 31-52003, 31-52103, and 31-55012, disconnect the connector D11132 from the Right Autothrottle Switch Pack.

SIA ALL

- (c) Examine the connector and socket for damage or unwanted material.
- (d) Make sure that the throttles are in the idle position.
- (e) Make sure that pin 17 on the connector has continuity to ground.
- (f) If there is no continuity, then do these steps:
 - 1) Repair the wiring between pin 17 and structure ground
 - 2) Re-connect the connector on the Left (Right) Autothrottle Switch Pack.

EFFECTIVITY
SIA ALL

32-09 TASK 815

D633A103-SIA

Page 255
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 3) Do the Repair Confirmation at the end of this task.
- (g) If there is continuity, then continue.
- (h) Do a check for continuity between pins 16 and 17 on the Left (Right) Autothrottle Switch Pack.
- (i) If there is continuity, then do these steps:
 - 1) Replace the switch in the applicable Left (Right) Autothrottle Switch Pack, M1766 (M1767). These are the tasks:
 - Autothrottle Switchpack Assembly - Removal, AMM TASK 76-11-07-020-802-F00
 - Autothrottle Switchpack Assembly - Installation, AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
- (j) If there is no continuity, then continue.
- (2) If the Initial Evaluation failed in a throttle position greater than 53, then do this check of the Left (Right) Autothrottle Switch Pack:
 - (a) Put the throttles in a position greater than 53 degrees.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) For maintenance messages 31-52002, 31-52102, and 31-55011, disconnect the connector D11128 from the Left Autothrottle Switch Pack.
- (c) For maintenance messages 31-52003, 31-52103, and 31-55012, disconnect the connector D11132 from the Right Autothrottle Switch Pack.

SIA ALL

- (d) Examine the connector and socket for damage or unwanted material.
- (e) Do a check for continuity between pins 16 and 17 on the Left (Right) Autothrottle Switch Pack.
- (f) If there is no continuity, then do these steps:
 - 1) Replace the switch in the applicable Left (Right) Autothrottle Switch Pack, M1766 (M1767). These are the tasks:
 - Autothrottle Switchpack Assembly - Removal, AMM TASK 76-11-07-020-802-F00
 - Autothrottle Switchpack Assembly - Installation, AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
- (g) If there is continuity, then continue.
- (3) Do this test of the wiring to the Autothrottle Switch Pack:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance messages 31-52002, 32-52102, and 31-55011, disconnect the connector D10982 from the PSEU.
- (b) For maintenance messages 31-52003, 32-52103, and 31-55012, disconnect the connector D10984 from the PSEU.

SIA ALL

- (c) Examine the connector and socket for damage or unwanted material.

EFFECTIVITY
SIA ALL

32-09 TASK 815

D633A103-SIA

Page 256
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (d) For maintenance messages 31-52002, 32-52102, and 31-55011, show the input status for connector D10982 pin 42.

NOTE: If you need instructions on how to show the input status, then go to this task:
Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure,
32-09 TASK 821.

- (e) For maintenance messages 31-52003, 32-52103, and 31-55012, show the input status for connector D10984 pin 42.

SIA ALL

- (f) If the status of the pin is NO GND, then do these steps:
- 1) Ground pin 42 with a jumper.
 - 2) If the status changes to GND, then do these steps:
 - a) Repair the wiring between pin 42 on the PSEU and pin 16 on the Autothrottle Switch Pack, M1766 (M1767).
 - b) Do the Repair Confirmation at the end of this task.
 - 3) If the status is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the Left (Right) Autothrottle Switch Packs:
- (a) Re-connect the connectors on the PSEU and Left (Right) Autothrottle Switch Pack.
 - (b) Put the throttles in the idle position.
 - (c) Put the throttles in a position greater than 53 degrees.
 - (d) Do the EXISTING FAULTS test on the PSEU BITE. This is the task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the problem.
 - 2) If you find the maintenance message, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

816. TRA Greater Than 44 Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
- (a) 32-62001 TRA L LT 44 FAULT

EFFECTIVITY
SIA ALL

32-09 TASKS 815-816

D633A103-SIA

Page 257
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 32-62101 TRA L LT 44 FAULT

SIA ALL

- (c) 32-62002 TRA R LT 44 FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (d) 32-62102 TRA R LT 44 FAULT

SIA ALL

- (2) These maintenance messages show that there is a problem with an autothrottle switchpack or associated wiring.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 32-62001 is set for this condition:
- 1) The left thrust lever resolver angle is less than 44 during takeoff.
- (b) Maintenance message number 32-62101 is set for this condition:
- 1) The left thrust lever resolver angle is not less than 44 while landing.
- (c) Maintenance message number 32-62002 is set for this condition:
- 1) The right thrust lever resolver angle is less than 44 during takeoff.
- (d) Maintenance message number 32-62102 is set for this condition:
- 1) The right thrust lever resolver angle is not less than 44 while landing.

SIA ALL

B. Possible Causes

- (1) Autothrottle microswitch pack, M1766 (left) or M1767 (right)
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do this test of the TRA outputs:
 - (a) Make sure the throttles are in the idle position.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

EFFECTIVITY
SIA ALL

32-09 TASK 816

D633A103-SIA

Page 258
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- 1) For maintenance message 32-62001 and 32-62101, show the status of D10982 pin 40.
- 2) For maintenance message 32-62002 and 32-62102, show the status of D10984 pin 40.

SIA ALL

- (c) Make sure that the status of the pin is GND.
- (d) Put the throttles in a position greater than 44 degrees.
- (e) Make sure that the status of the pin is NO GND.
- (f) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
- (g) If the status of the pins are correct, then there was an intermittent fault.

F. Fault Isolation Procedure



OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. WHEN YOU MOVE THE THRUST LEVER FORWARD, THE WEATHER RADAR SYSTEM COMES ON AUTOMATICALLY WHILE THE CIRCUIT BREAKER IS CLOSED. MAKE SURE THAT ALL PERSONNEL ARE MORE THAN 15 FT (5 M) FROM THE ANTENNA WHEN IT TRANSMITS RF ENERGY. RF ENERGY CAN KILL OR CAUSE INJURIES TO PERSONS, AND CAUSE DAMAGE TO EQUIPMENT.

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

- (1) If the Initial Evaluation failed in the idle position, then do this check of the autothrottle switch pack:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message 32-62001 and 32-62101, remove the connector D11128 from the left autothrottle switch pack.
- (b) For maintenance message 32-62002 and 32-62102, remove the connector D11132 from the right autothrottle switch pack.

SIA ALL

- (c) Examine the connector and socket for damage or unwanted material.
- (d) Make sure the throttles are in the idle position.
- (e) Make sure pin 2 on the connector has continuity to ground.
- (f) If there is not continuity, then do these steps:
 - 1) Repair the wiring between pin 2 and structure ground
 - 2) Re-connect the connector on the autothrottle switch pack.
 - 3) Do the Repair Confirmation at the end of this task.
- (g) If there is continuity, then continue.
- (h) Do a check for continuity between pins 2 and 3 on the autothrottle switch pack.
- (i) If there is not continuity, then do these steps:
 - 1) Replace the applicable autothrottle switch pack, M1766 (left) or M1767 (right).
These are the tasks:

EFFECTIVITY
SIA ALL

32-09 TASK 816

D633A103-SIA

Page 259
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- AMM TASK 76-11-07-020-802-F00
- AMM TASK 76-11-07-400-802-F00
- 2) Do the Repair Confirmation at the end of this task.
- (j) If there is continuity, then continue.
- (2) If the Initial Evaluation failed in a position greater than 44, then do this check of the autothrottle switch pack:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message 32-62001 and 32-62101, remove the connector D11128 from the left autothrottle switch pack.
- (b) For maintenance message 32-62002 and 32-62102, remove the connector D11132 from the right autothrottle switch pack.

SIA ALL

- (c) Examine the connector and socket for damage or unwanted material.
- (d) Put the throttles in a position greater than 44 degrees.
- (e) Do a check for continuity between pins 2 and 3 on the autothrottle switch pack.
- (f) If there is continuity, then do these steps:
 - 1) Replace the applicable autothrottle switch pack, M1766 (left) or M1767 (right).
These are the tasks:
 - AMM TASK 76-11-07-020-802-F00
 - AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
- (g) If there is not continuity, then continue.
- (3) Do this test of the wiring to the autothrottle switchpack:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message 32-62001 and 32-62101, remove the connector D10982 from the PSEU.
- (b) For maintenance message 32-62002 and 32-62102, remove the connector D10984 from the PSEU..

SIA ALL

- (c) Examine the connector and socket for damage or unwanted material.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (d) For maintenance message 32-62001 and 32-62101, show the input status for connector D10982 pin 40.

NOTE: If you need instructions on how to show the input status, then go to this task:
(32-09 TASK 821).

- (e) For maintenance message 32-62002 and 32-62102, show the input status for connector D10984 pin 40.

SIA ALL

- (f) If the status of the pin is NO GND, then do these steps:
 - 1) Ground pin 40 with a jumper.
 - 2) If the status changes to GND, then do these steps:

EFFECTIVITY
SIA ALL

32-09 TASK 816

D633A103-SIA

Page 260
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- a) Repair the wiring between pin 40 on the PSEU and pin 3 on the autothrottle switchpack.
- b) Do the Repair Confirmation at the end of this task.
- 3) If the status is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the autothrottle switch packs:
 - (a) Re-connect the connectors on the PSEU and autothrottle switch pack.
 - (b) Put the throttles in the idle position.
 - (c) Put the throttles in a position greater than 44 degrees.
 - (d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.

————— **END OF TASK** —————

817. Stab Trim Position Disagree - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 31-52004 STAB TRM DISAGREE

NOTE: This message is not applicable to airplanes that have PSEU PN: 285A1600-6 installed. PSEU (-6) software removed this fault message.
- (2) This message will show on the Proximity Switch Electronic Unit (PSEU) BITE display when one of these conditions occur:
 - (a) Input from the Stabilizer Take Off Warning Switches, S546 or S132, are both true or both false.
 - (b) Input from the Stabilizer Take Off Warning Switches, S1183 or S1184, are both true or both false.

B. Possible Causes

- (1) Stabilizer Take Off Warning Nose Down Switch, S546
- (2) Stabilizer Take Off Warning Nose Down Switch, S1183
- (3) Stabilizer Take Off Warning Nose Up Switch, S132
- (4) Stabilizer Take Off Warning Nose Up Switch, S1184
- (5) Proximity Switch Electronic Unit (PSEU), M2061
- (6) Wiring

EFFECTIVITY
SIA ALL

32-09 TASKS 816-817

D633A103-SIA

Page 261
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) SSM 31-53-11
(2) WDM 31-53-11

E. Initial Recommended Action

- (1) A Proximity Switch Electronic Unit (PSEU) light illumination caused by disagreement between paired Stab Trim Switches, may be considered a probable nuisance fault. Boeing suggests the following steps, to determine if the PSEU light illumination may be considered a nuisance:
- (2) Interrogate the PSEU BITE to confirm fault code 31-52004 exists.
- (3) If fault code 31-52004 is found in existing faults do the following:



BEFORE YOU PRESSURIZE THE HYDRAULIC SYSTEM, MAKE SURE THAT THE REVERSERS, FLAPS, SPOILERS, NOSEWHEEL, ELEVATORS, RUDDER, SLATS, RUDDER PEDALS, AND CONTROL COLUMNS ARE CLEAR OF PERSONS AND EQUIPMENT. THIS WILL HELP PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Pressurize the hydraulic systems. This is the task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (b) Extend the flaps. This is the task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.
- (c) Perform one cycling of the Stabilizer, starting in the green band, moving to a position UP beyond the green band, then DOWN beyond the green band and back to center of the green band.
- 1) If the PSEU light extinguishes, the 31-52004 fault was intermittent and may be considered a nuisance fault. The airplane may be dispatched with no PSEU light.
- (4) If the light does not extinguish, there is likely another cause of the light illumination. Troubleshoot for 31-52004 per the rest of FIM 32- 09 Task 817 (Stab Trim Position Disagree – Fault Isolation).

F. Initial Evaluation

- (1) Make sure that the flaps are extended. This is the task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.
- (2) Do this test of the Stab Trim Switches:
- (a) Make sure that the stabilizer trim position is in the green band.
- (b) If the trim position is not in the green band, then do these steps:

EFFECTIVITY
SIA ALL

32-09 TASK 817

D633A103-SIA

Page 262
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR AREAS. THE CONTROL SURFACES AND LANDING GEAR DOORS CAN MOVE WHEN YOU PRESSURIZE THE HYDRAULIC SYSTEMS. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- 1) Pressurize the hydraulic systems. This is the task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- 2) Put the trim position in the green band.
- (c) Do these steps to find the status of the stabilizer trim inputs with the trim lever in the green band:
NOTE: You will use the status of the inputs for the fault isolation procedure below. Make sure you record the input status that you find.
 - 1) Show the input status for connector D10982 pin 51 on the PSEU display.
NOTE: If you need instructions on how to show the input status, then go to Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure, 32-09 TASK 821.
 - 2) Write down the status of the pin.
 - 3) Show the input status for connector D10984 pin 51 on the PSEU display.
 - 4) Write down the status of the pin.
- (d) Do these steps to find the status of the stabilizer trim inputs with the trim lever in the NOSE UP position:
 - 1) Put the trim position in the NOSE UP position.
 - 2) Show the input status for connector D10982 pin 51 on the PSEU display.
 - 3) Write down the status of the pin.
 - 4) Show the input status for connector D10984 pin 51 on the PSEU display.
 - 5) Write down the status of the pin.
- (e) Do these steps to find the status of the stabilizer trim inputs with the trim lever in the NOSE DOWN position:
 - 1) Put the trim position in the NOSE DOWN position.
 - 2) Show the input status for connector D10982 pin 51 on the PSEU display.
 - 3) Write down the status of the pin.
 - 4) Show the input status for connector D10984 pin 51 on the PSEU display.
 - 5) Write down the status of the pin.
- (f) Compare the inputs to this table:

Table 212

STAB TRIM POSITION	D10982 PIN 51	D10984 PIN 51
GREEN BAND	NO GND	GND
UP	GND	NO GND
DOWN	GND	NO GND

EFFECTIVITY
SIA ALL

32-09 TASK 817

D633A103-SIA

Page 263
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (g) If the status of the pins is not correct, then do the applicable Fault Isolation Procedure below.

NOTE: The fault isolation is divided into 3 parts: Green Band Disagree, Up Position Disagree, and Down Position Disagree. If the status of the pins disagree with the table for more than one stab trim position, then do the fault isolation in the order below.

- (h) If the status of the pins is correct, then there was an intermittent fault.

G. Fault Isolation Procedure - Green Band Disagree

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

- (1) Do these steps to prepare for Fault Isolation Procedure:
 - (a) Put the trim position in the green band.
 - (b) Remove the pressure from the hydraulic systems. This is the task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Examine the Stabilizer Takeoff Warning Nose Switches and surrounding area:
 - (a) If there is damage, then do these steps:
 - 1) Repair the damage that you find.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If any of the Stabilizer Takeoff Warning Nose Switches appear to be actuated, then do these steps:
 - 1) Remove and re-install the Stabilizer Takeoff Warning Nose Switch. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If there is no damage and the Stabilizer Takeoff Warning Nose Switches are not actuated, then continue.
- (3) If the input status of connector D10984 pin 51 is NO GND, then do this test:
 - (a) Disconnect the splice SP54 from the Stabilizer Take Off Warning Nose Down Switch S1183.
 - (b) Ground the wire from the PSEU, M2061 at the splice, SP54 with a jumper wire.
 - (c) Show the input status for connector D10984 pin 51 on the PSEU display.
 - (d) If the status of the pin is GND, then do this test of the Stabilizer Take Off Warning Nose Switches:
 - 1) Disconnect the splice SP58 from the Stabilizer Take Off Warning Nose Down Switch, S1183.
 - 2) Do a check for continuity between D-C and D-F on the Stabilizer Take Off Warning Nose Down Switch, S1183.
 - a) If there is no continuity, then do these steps:

<1> Replace the Stabilizer Take Off Warning Nose Down Switch, S1183. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801

EFFECTIVITY
SIA ALL

D633A103-SIA

32-09 TASK 817

Page 264
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
- <2> Re-connect the splices on the Stabilizer Take Off Warning Nose Down Switch, S1183
- <3> Do the Repair Confirmation at the end of this task.
- b) If there is continuity, then continue.
- 3) Do a check for continuity between C-C and ground on the Stabilizer Take Off Warning Nose Up Switch, S1184.
 - a) If there is no continuity, then do these steps:
 - <1> Replace the Stabilizer Take Off Warning Nose Up Switch, S1184. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - <2> Re-connect the splices on the Stabilizer Take Off Warning Nose Down Switches.
 - <3> Do the Repair Confirmation at the end of this task.
 - b) If there is continuity, then do these steps:
 - <1> Re-connect the splices on the Stabilizer Take Off Warning Nose Down Switches.
 - <2> Do the Repair Confirmation at the end of this task.
 - <a> If the repair confirmation operates correctly, then there may have been an open splice or another wiring problem.
- (e) If the status of the pin is NO GND, then do this test of the PSEU, M2061:
 - 1) Remove the connector D10984 from the PSEU, M2061.
 - 2) Examine the connector D10984 and socket for damage or unwanted material.
 - 3) Ground pin 51 on the PSEU connector, D10984 with a jumper wire.
 - 4) If the status of the pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the splice on the Stabilizer Take Off Warning Nose Down Switch.
 - c) Do the Repair Confirmation at the end of this task.
 - 5) If the status of the pin is GND, then do these steps:
 - a) Repair the wiring between the PSEU pin 51 and the Stabilizer Take Off Warning Nose Down Switch.
 - b) Re-connect the connector D10984 on the PSEU, M2061.
 - c) Re-connect the splice on the Stabilizer Take Off Warning Nose Down Switch.
 - d) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-09 TASK 817

D633A103-SIA

Page 265
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (4) If the input status of connector D10982 pin 51 is GND, then do this test:
- (a) Remove the splice SP56 from the Stabilizer Take Off Warning Nose Down Switch, S546.
 - (b) Show the input status for connector D10982 pin 51 on the PSEU display.
 - (c) If the status of the pin is NO GND, then do these steps:
 - 1) Do a check for continuity between the Stabilizer Take Off Warning Nose Down Switch, S546 terminal A-D and structure ground.
 - 2) If there is continuity, then do these steps:
 - a) Replace the Stabilizer Take Off Warning Nose Down Switch, S546. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - b) Do the Repair Confirmation at the end of this task.
 - 3) If there is no continuity, then do a check for continuity between the Stabilizer Take Off Warning Nose Up Switch, S132 terminal B-D and structure ground.
 - 4) If there is continuity, then do these steps:
 - a) Replace the Stabilizer Take Off Warning Nose Up Switch, S132. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - b) Do the Repair Confirmation at the end of this task.
 - (d) If the status of the pin is GND, then do these steps:
 - 1) Remove the connector D10982 from the PSEU, M2061.
 - 2) Examine the connector D10982 and socket for damage or unwanted material.
 - 3) Show the input status for connector D10982 pin 51 on the PSEU display.
 - 4) If the status of the pin is GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the splices for the Stabilizer Take Off Warning Nose Down Switch.
 - c) Do the Repair Confirmation at the end of this task.
 - 5) If the status of the pin is NO GND, then do a check of the wiring between the PSEU connector D10982 pin 51 and the splice SP56.
 - 6) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector D10982 on the PSEU, M2061.
 - c) Re-connect the splices for the Stabilizer Take Off Warning Nose Down Switch.
 - d) Do the Repair Confirmation at the end of this task.

H. Fault Isolation Procedure - Up Position Disagree

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

EFFECTIVITY
SIA ALL

32-09 TASK 817

D633A103-SIA

Page 266
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (1) Do these steps to move the Stabilizer to the NOSE UP trim position:



MAKE SURE ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR AREAS. THE CONTROL SURFACES AND LANDING GEAR DOORS CAN MOVE WHEN YOU PRESSURIZE THE HYDRAULIC SYSTEMS. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (a) Pressurize the hydraulic systems. This is the task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - (b) Put the trim position in the NOSE UP position.
 - (c) Remove the pressure from the hydraulic systems. This is the task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Examine the Stabilizer Take Off Warning Nose Switches and surrounding area:
- (a) If there is damage, then do these steps:
 - 1) Repair the damage that you find.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If either the Stabilizer Take Off Warning Nose Up Switch, S132 or S1184 is not actuated, then do these steps:
 - 1) Remove and re-install the Stabilizer Take Off Warning Nose Up Switch, S132 or S1184. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If either the Stabilizer Take Off Warning Nose Down Switch, S546 or S1183 is actuated, then do these steps:
 - 1) Remove and re-install the Stabilizer Take Off Warning Nose Down Switch, S546 or S1183. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If there is no damage and the Stabilizer Take Off Warning Nose Switches are in the correct position, then continue.
- (3) If the input status of connector D10984 pin 51 is GND, then do this test:
- (a) Remove the splice SP58 from the Stabilizer Take Off Warning Nose Up Switch, S1184.
 - (b) Show the input status for connector D10984 pin 51 on the PSEU display.
 - (c) If the status of the pin is NO GND, then do these steps:
 - 1) Replace the Stabilizer Take Off Warning Nose Up Switch, S1184. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If the status of the pin is GND, then do these steps:

EFFECTIVITY
SIA ALL

32-09 TASK 817

D633A103-SIA

Page 267
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) Remove the splice SP54 from the Stabilizer Take Off Warning Nose Down Switch, S1183.
- 2) Show the input status for connector D10984 pin 51 on the PSEU display.
- 3) If the status of the pin is NO GND, then do these steps:
 - a) Replace the Stabilizer Take Off Warning Nose Down Switch, S1183. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - b) Do the Repair Confirmation at the end of this task.
- 4) If the status of the pin is GND, then continue.
- 5) Remove the connector D10984 from the PSEU, M2061.
- 6) Examine the connector D10984 and socket for damage or unwanted material.
- 7) Show the input status for connector D10984 pin 51 on the PSEU display.
- 8) If the status of the pin is GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the connector D10984 on the PSEU, M2061.
 - c) Re-connect the splices on the Stabilizer Take Off Warning Nose Down Switches.
 - d) Do the Repair Confirmation at the end of this task.
- 9) If the status of the pin is NO GND, then do these steps:
 - a) Repair the wiring between the PSEU pin 51 and the splice SP54 for the Stabilizer Take Off Warning Nose Down Switches.
 - b) Re-connect the connector D10984 on the PSEU, M2061.
 - c) Re-connect the splices on the Stabilizer Take Off Warning Nose Down Switches.
 - d) Do the Repair Confirmation at the end of this task.
- (4) If the input status of connector D10982 pin 51 is NO GND, then do this test:
 - (a) Remove the splice SP56 from the Stabilizer Take Off Warning Nose Up Switch, S132.
 - (b) Ground the wire from the PSEU, M2061 with a jumper wire.
 - (c) Show the input status for connector D10982 pin 51 on the PSEU display.
 - (d) If the status of the pin is GND, then do this check of the Stabilizer Take Off Warning Nose Up Switch, S132:
 - 1) Do a check for continuity between pin B-D on the Stabilizer Take Off Warning Nose Up Switch, S132 and structure ground.
 - 2) If there is no continuity, then do these steps:
 - a) Replace the Stabilizer Take Off Warning Nose Up Switch, S132. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801

EFFECTIVITY
SIA ALL

32-09 TASK 817

D633A103-SIA

Page 268
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
- b) Do the Repair Confirmation at the end of this task.
- 3) If there is continuity, then do these steps:
 - a) Re-connect the splice on the Stabilizer Take Off Warning Nose Up Switch, S132.
 - b) Do the Repair Confirmation at the end of this task.
 - <1> If the repair confirmation operates correctly, then there may have been an open splice or another wiring problem.
- (e) If the status of the pin is NO GND, then do these steps:
 - 1) Remove the connector D10982 from the PSEU, M2061.
 - 2) Examine the connector D10982 and socket for damage or unwanted material.
 - 3) Ground pin 51 on the PSEU connector with a jumper wire.
 - 4) Show the input status for connector D10982 pin 51 on the PSEU display.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the connector D10982 on the PSEU, M2061.
 - c) Re-connect the splice on the Stabilizer Take Off Warning Nose Up Switch, S132.
 - d) Do the Repair Confirmation at the end of this task.
 - 6) If the status of the pin is GND, then do these steps:
 - a) Repair the wiring between the PSEU, M2061 and the Stabilizer Take Off Warning Nose Up Switch, S132 pin 5.
 - b) Re-connect the connector on the PSEU, M2061.
 - c) Re-connect the splice on the Stabilizer Take Off Warning Nose Up Switch, S132.
 - d) Do the Repair Confirmation at the end of this task.

I. Fault Isolation Procedure - Down Position Disagree

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

- (1) Do these steps to move the Stabilizer to the NOSE DOWN trim position:



WARNING

MAKE SURE ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR AREAS. THE CONTROL SURFACES AND LANDING GEAR DOORS CAN MOVE WHEN YOU PRESSURIZE THE HYDRAULIC SYSTEMS. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (a) Pressurize the hydraulic systems. This is the task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (b) Put the trim position in the NOSE DOWN position.

EFFECTIVITY
SIA ALL

D633A103-SIA

32-09 TASK 817

Page 269
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (c) Remove the pressure from the hydraulic systems. This is the task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Examine the Stabilizer Take Off Warning Nose Switches and surrounding area:
 - (a) If there is damage, then do these steps:
 - 1) Repair the damage that you find.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If either of the Stabilizer Take Off Warning Nose Up Switches, S132 or S1184 is actuated, then do these steps:
 - 1) Remove and re-install the Stabilizer Take Off Warning Nose Up Switches, S132 or S1184. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If either of the Stabilizer Take Off Warning Nose Down Switch, S546 or S1183 is not actuated, then do these steps:
 - 1) Remove and re-install the Stabilizer Take Off Warning Nose Down Switch, S546 or S1183. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If there is no damage and the Stabilizer Take Off Warning Nose Switches are in the correct position, then continue.
- (3) If the input status of connector D10984 pin 51 is GND, then do these steps:
 - (a) Replace the Stabilizer Take Off Warning Nose Down Switch, S1183. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - (b) Do the Repair Confirmation at the end of this task.
- (4) If the input status of connector D10982 pin 51 is NO GND, then do this test:
 - (a) Remove the splice SP56 from the Stabilizer Take Off Warning Nose Down Switch, S546.
 - (b) Do a check for continuity between terminal A-D on the Stabilizer Take Off Warning Nose Down Switch, S546 and structure ground.
 - (c) If there is no continuity, then do these steps:
 - 1) Replace the Stabilizer Take Off Warning Nose Down Switch, S546. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If there is continuity, then do these steps:
 - 1) Re-connect the splice on the Stabilizer Take Off Warning Nose Down Switch, S546.
 - 2) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-09 TASK 817

D633A103-SIA

Page 270
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- a) If the repair confirmation operates correctly, then there may have been an open splice or another wiring problem.

J. Repair Confirmation

- (1) If it is necessary, re-connect the connectors on the PSEU, M2061 and the splices on the Stabilizer Take Off Warning Nose Up and Down Switches.



MAKE SURE ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR AREAS. THE CONTROL SURFACES AND LANDING GEAR DOORS CAN MOVE WHEN YOU PRESSURIZE THE HYDRAULIC SYSTEMS. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (2) Pressurize the hydraulic systems. This is the task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (3) Set the stabilizer trim outside the green band toward nose down.
- (4) Set the stabilizer trim outside the green band toward nose up.
- (5) Set the stabilizer trim inside the green band.
- (6) Do the EXISTING FAULTS test on the PSEU BITE. Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- (a) If the maintenance message does not show, then you corrected the fault.
- (7) If hydraulic pressure is no longer needed, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

———— **END OF TASK** ————

818. PSEU Status Messages - Fault Isolation

A. Description

- (1) This task is for these status messages:
- (a) 32-04001 AIR/GND OVERRIDE
- (b) 32-64003 DISPATCH PER MEL
- (c) 32-64004 NO DISP FAULT
- NOTE: This message text for 32-64004 will show as DO NOT DISPATCH.
- (2) These messages are status messages which show these conditions:
- (a) Message 32-04001 - AIR/GND OVERRIDE shows that the PSEU outputs are in the override condition. This is not a fault.
- (b) Message 32-64003 - DISPATCH PER MEL shows that there is an existing dispatch type fault (the PSEU light can be turned off).
- (c) Message 32-64004 - NO DISP FAULT shows that there is an existing no dispatch type fault (the fault must be corrected to turn off the PSEU light).

B. Initial Evaluation

- (1) Maintenance message 32-04001 - AIR/GND OVERRIDE shows that the PSEU outputs are in the override condition. If the override condition is not necessary, then you can put the PSEU back in the normal condition. To put the PSEU back to the normal condition, do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, AMM TASK 32-09-00-840-802.

EFFECTIVITY
SIA ALL

D633A103-SIA

32-09 TASKS 817-818

Page 271
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (2) Maintenance messages 32-64003 and 32-64004 are status messages. There are other maintenance messages in the PSEU which must be corrected before you can remove the status message. Continue to show the other fault messages to perform fault isolation. To show the other fault messages, do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

————— **END OF TASK** —————

819. More Than One Air/Ground Sensor Faults - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-01007 AIR/GND FAIL
- (2) This maintenance message shows that there are more than one air/ground sensor faults. This message shows if one of these conditions are correct:
 - (a) Maintenance message numbers 32-01002 and 32-01005 are both set.
 - (b) Maintenance message numbers 32-01001 and 32-01004 are both set.
 - (c) Maintenance message numbers 32-01003 and 32-01006 are both set.

B. Possible Causes

- (1) Nose landing gear air/ground sensor, S1014 or S1015
- (2) Left main landing gear air/ground sensor, S1012 or S1013
- (3) Right main landing gear air/ground sensor, S1010 or S1011
- (4) Wiring problem
- (5) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (32-09 TASK SUPPORT Figure 301)
- (2) Component Location (32-09 TASK SUPPORT Figure 302)
- (3) (SSM 32-09-11)
- (4) (SSM 32-09-12)
- (5) (WDM 32-31-11)
- (6) (WDM 32-31-12)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find any maintenance messages, then there was an intermittent fault.
 - (b) If you find the maintenance message, then show and record all the maintenance messages in the PSEU.

EFFECTIVITY
SIA ALL

32-09 TASKS 818-819

D633A103-SIA

Page 272
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (c) Look for these PSEU maintenance messages:
- 1) For maintenance message numbers 32-01002 and 32-01005, do this task: Nose Landing Gear Air/Ground Sensor Fault - Fault Isolation, 32-09 TASK 802.
 - 2) For maintenance message numbers 32-01001, 30-01003, 32-01004, and 32-01006, do this task: Main Landing Gear Air/Ground Sensor Fault - Fault Isolation, 32-09 TASK 803.

————— **END OF TASK** —————

820. TRA Greater Than 64 Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-62003 TRA L LT 64 FAULT
 - (b) 32-62004 TRA R LT 64 FAULT
- (2) These maintenance messages show that there is a problem with an autothrottle switchpack or associated wiring.
 - (a) Maintenance message number 32-62003 is set for one of these conditions:
 - 1) The left and right TRA LT64 switches disagree during takeoff.
 - 2) The left thrust lever resolver angle is not less than 64 while landing.
 - (b) Maintenance message number 32-62004 is set for one of these conditions:
 - 1) The left and right TRA LT64 switches disagree during takeoff.
 - 2) The right thrust lever resolver angle is not less than 64 while landing.

B. Possible Causes

- (1) Autothrottle microswitch pack, M1766 (left) or M1767 (right)
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

EFFECTIVITY
SIA ALL

32-09 TASKS 819-820

D633A103-SIA

Page 273
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

E. Initial Evaluation



OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. WHEN YOU MOVE THE THRUST LEVER FORWARD, THE WEATHER RADAR SYSTEM COMES ON AUTOMATICALLY WHILE THE CIRCUIT BREAKER IS CLOSED. MAKE SURE THAT ALL PERSONNEL ARE MORE THAN 15 FT (5 M) FROM THE ANTENNA WHEN IT TRANSMITS RF ENERGY. RF ENERGY CAN KILL OR CAUSE INJURIES TO PERSONS, AND CAUSE DAMAGE TO EQUIPMENT.

- (1) Do this test of the TRA outputs:
 - (a) Make sure the throttles are in the idle position.
 - (b) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

 - 1) For maintenance message 32-62003, show the status of D10982 pin 41.
 - 2) For maintenance message 32-62004, show the status of D10984 pin 41.
 - (c) Make sure that the status of the pin is GND.
 - (d) Put the throttles in a position greater than 64 degrees.
 - (e) Make sure that the status of the pin is NO GND.
 - (f) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
 - (g) If the status of the pins are correct, then there was an intermittent fault.

F. Fault Isolation Procedure

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

- (1) If the Initial Evaluation failed in the idle position, then do this check of the autothrottle switch pack:
 - (a) For maintenance message 32-62003, remove the connector D11128 from the left autothrottle switch pack.
 - (b) For maintenance message 32-62004, remove the connector D11132 from the right autothrottle switch pack.
 - (c) Examine the connector and socket for damage or unwanted material.
 - (d) Make sure the throttles are in the idle position.
 - (e) Make sure pin 23 on the connector has continuity to ground.
 - (f) If there is not continuity, then do these steps:
 - 1) Repair the wiring between pin 23 and structure ground
 - 2) Re-connect the connector on the autothrottle switch pack.
 - 3) Do the Repair Confirmation below.
 - (g) If there is continuity, then continue.
 - (h) Use a multimeter, STD-1231 to measure for continuity between pins 23 and 24 on the autothrottle switch pack.
 - (i) If there is not continuity, then do these steps:
 - 1) Replace the applicable autothrottle switch pack, M1766 (left) or M1767 (right).

These are the tasks:

EFFECTIVITY
SIA ALL

32-09 TASK 820

D633A103-SIA

Page 274
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- AMM TASK 76-11-07-020-802-F00
- AMM TASK 76-11-07-400-802-F00
- 2) Do the Repair Confirmation at the end of this task.
- (j) If there is continuity, then continue.
- (2) If the Initial Evaluation failed in a position greater than 64, then do this check of the autothrottle switch pack:
 - (a) For maintenance message 32-62003, remove the connector D11128 from the left autothrottle switch pack.
 - (b) For maintenance message 32-62004, remove the connector D11132 from the right autothrottle switch pack.
 - (c) Examine the connector and socket for damage or unwanted material.
 - (d) Put the throttles in a position greater than 64 degrees.
 - (e) Do a check for continuity between pins 23 and 24 on the autothrottle switch pack.
 - (f) If there is continuity, then do these steps:
 - 1) Replace the autothrottle switch pack, M1766 (left) or M1767 (right). These are the tasks:
 - AMM TASK 76-11-07-020-802-F00
 - AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
 - (g) If there is not continuity, then continue.
- (3) Do this test of the wiring to the autothrottle switchpack:
 - (a) For maintenance message 32-62003, remove the connector D10982 from the PSEU.
 - (b) For maintenance message 32-62004, remove the connector D10984 from the PSEU.
 - (c) Examine the connector and socket for damage or unwanted material.
 - (d) For maintenance message 32-62003, show the input status for connector D10982 pin 41.
NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).
 - (e) For maintenance message 32-62004, show the input status for connector D10984 pin 41.
 - (f) If the status of the pin is NO GND, then do these steps:
 - 1) Ground pin 41 with a jumper.
 - 2) If the status changes to GND, then do these steps:
 - a) Repair the wiring between pin 41 on the PSEU and pin 24 on the autothrottle switchpack.
 - b) Do the Repair Confirmation at the end of this task.
 - 3) If the status is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-09 TASK 820

D633A103-SIA

Page 275
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

G. Repair Confirmation

- (1) Do this test of the autothrottle switch packs:
 - (a) Re-connect the connectors on the PSEU and autothrottle switch pack.
 - (b) Put the throttles in the idle position.
 - (c) Put the throttles in a position greater than 64 degrees.
 - (d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.

————— **END OF TASK** —————

821. Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure

A. General

- (1) You do the Proximity Switch Electronics Unit (PSEU) input monitoring at the front of the PSEU module. The PSEU is in the forward electrical equipment bay.

B. Procedure

- (1) Do the input monitoring procedure for the PSEU: (Figure 203)
 - (a) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door
 - (b) Push the ON/OFF switch.
NOTE: The display will show EXISTING FAULTS?
 - (c) Push the down arrow until OTHER FUNCTNS? shows.
 - (d) Push the YES switch.
NOTE: The display will show T/O WARN REPORT?.
 - (e) Push the down arrow until I/O MONITOR? shows.
 - (f) Push the YES switch.
NOTE: The display will show SENSORS?.
 - (g) Push the down arrow until INPUTS? shows.
 - (h) Push the YES switch.
NOTE: The display will show CONN Dxxxxx? where Dxxxxx is a connector number.
 - (i) Push the down arrow or up arrow until the required connector shows.
 - (j) Push the YES switch.
NOTE: The display will show a pin number and status. The status can be GND, NO GND, or a voltage.
 - (k) Push the down arrow or up arrow until the required pin shows.
 - (l) Use the connector/pin status as required for fault isolation.
 - (m) In the course of this procedure use the MENU switch to go to a previous menu level.

————— **END OF TASK** —————

EFFECTIVITY
SIA ALL

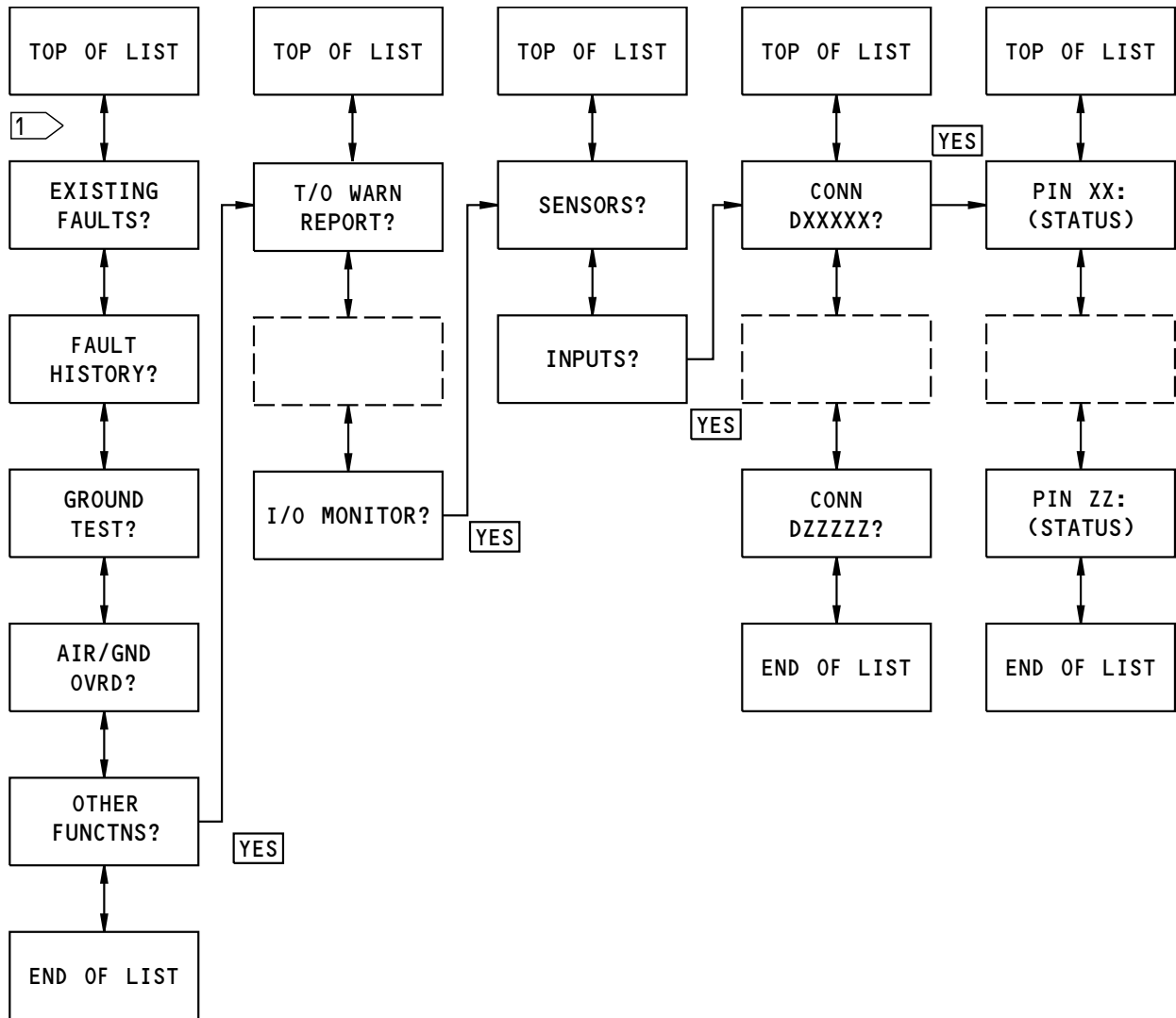
32-09 TASKS 820-821

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 276
Jun 15/2022

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



NOTE: TO RETURN TO A PREVIOUS MENU,
PUSH THE MENU SWITCH.

1 REPRESENTS THE AND ON THE BITE DISPLAY

H38471 S0000147088_V1

PSEU Bite Tree - Display Input/Output Status
Figure 203/32-09-00-990-803

EFFECTIVITY
SIA ALL

32-09 TASK 821

D633A103-SIA

Page 277
Jun 15/2022



737-600/700/800/900
FAULT ISOLATION MANUAL

822. No 28 VDC B Input Power to PSEU - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-60002 NO 28V B POWER
- (2) These maintenance messages show that there is not 28 VDC input power to the PSEU.

B. Possible Causes

- (1) Wiring problem
- (2) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-61-11)
- (2) (SSM 32-61-12)
- (3) (WDM 32-64-11)
- (4) (WDM 32-64-12)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the 28 VDC input to the PSEU:
 - (a) Remove the connector D11140 from the PSEU.
 - (b) Examine the connector and socket for damage or unwanted material.
 - (c) Do a check for 28 VDC between pin 41 of connector D11140 and structure ground.
 - (d) If there is not 28 VDC at pin 41, then do these steps:
 - 1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

- 2) Do a check for continuity between these pins:

Table 213

CIRCUIT BREAKER C1400 - P6-3 D2

pin 1

PSEU - D11140

pin 41

EFFECTIVITY
SIA ALL

32-09 TASK 822

D633A103-SIA

Page 278
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

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

- a) Repair the wiring.
- b) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

- c) Re-connect the connector on the PSEU.
 - d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - e) If you do not find the maintenance message, then you corrected the fault.
- 4) If you do not find a problem with the wiring, then do these steps:

- a) Replace this circuit breaker:
<1> This is the circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

- b) Re-connect the connector on the PSEU.
 - c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - d) If you do not find the maintenance message, then you corrected the fault.
- (e) If there is 28 VDC at pin 41, then continue.
- (2) Do this test of the primary ground for the PSEU:
- (a) Do a check for continuity between pin 61 of connector D11140 and structure ground.
 - (b) If pin 61 does not have continuity to ground, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.
 - (c) If pin 61 has continuity to structure ground, then continue.
- (3) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the post installation test in the PSEU installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.

———— **END OF TASK** ————

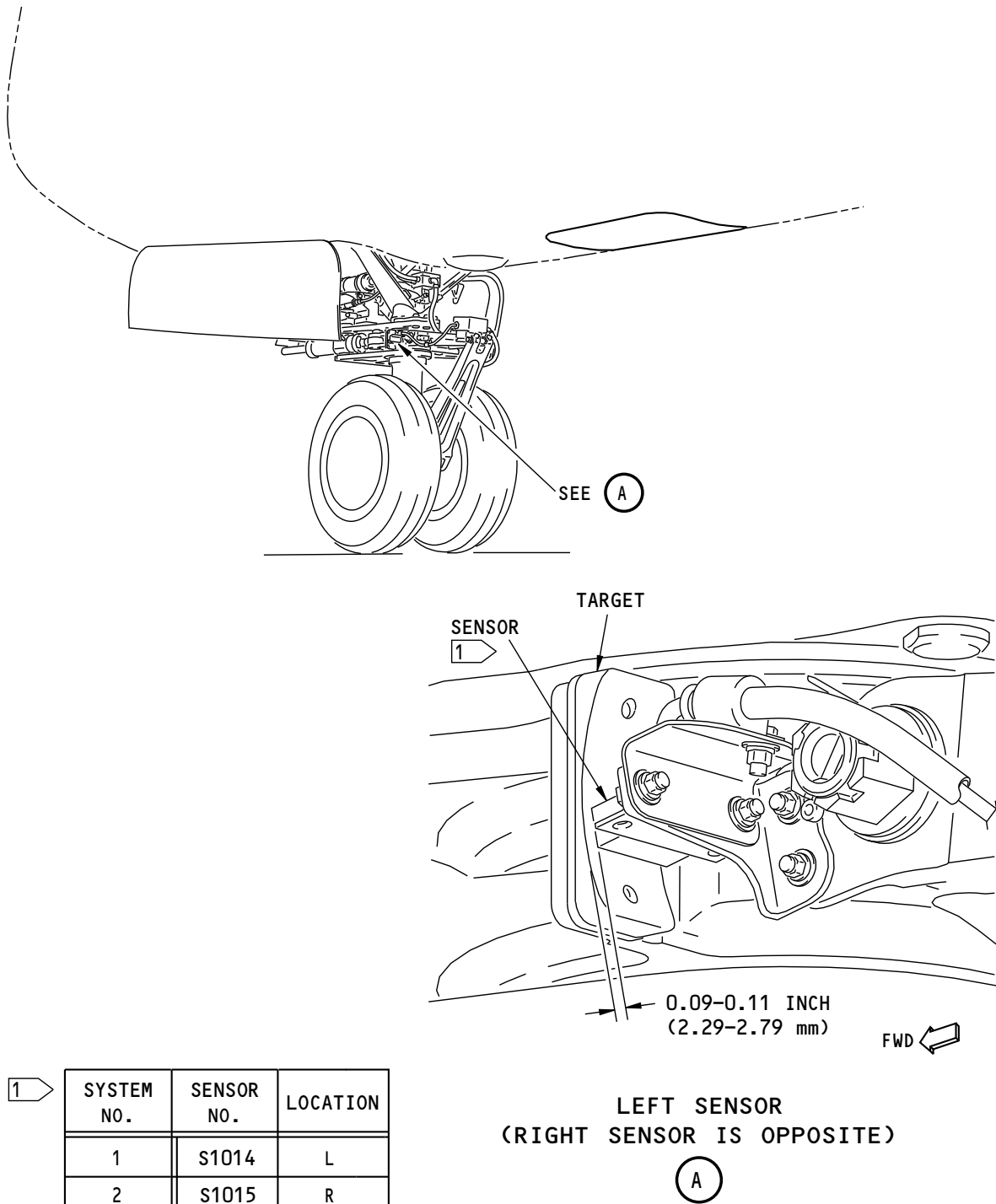
EFFECTIVITY
SIA ALL

32-09 TASK 822

D633A103-SIA

Page 279
Jun 15/2022

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



G56890 S0006743670_V1

Nose Landing Gear Air/Ground Sensor Component Location
Figure 301/32-09-00-990-801

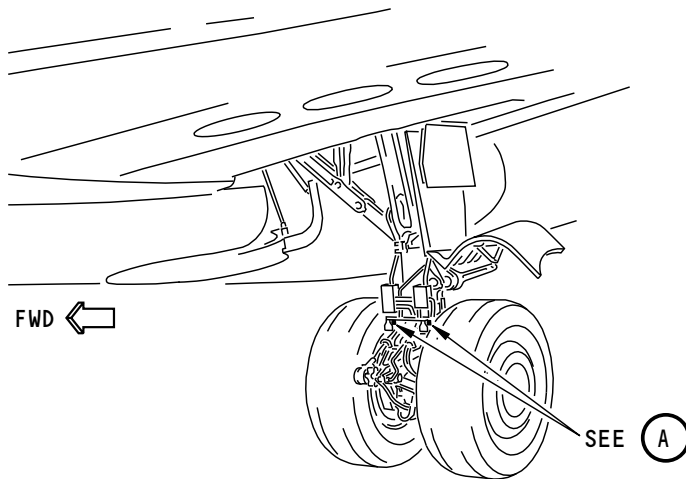
EFFECTIVITY
SIA ALL

32-09 TASK SUPPORT

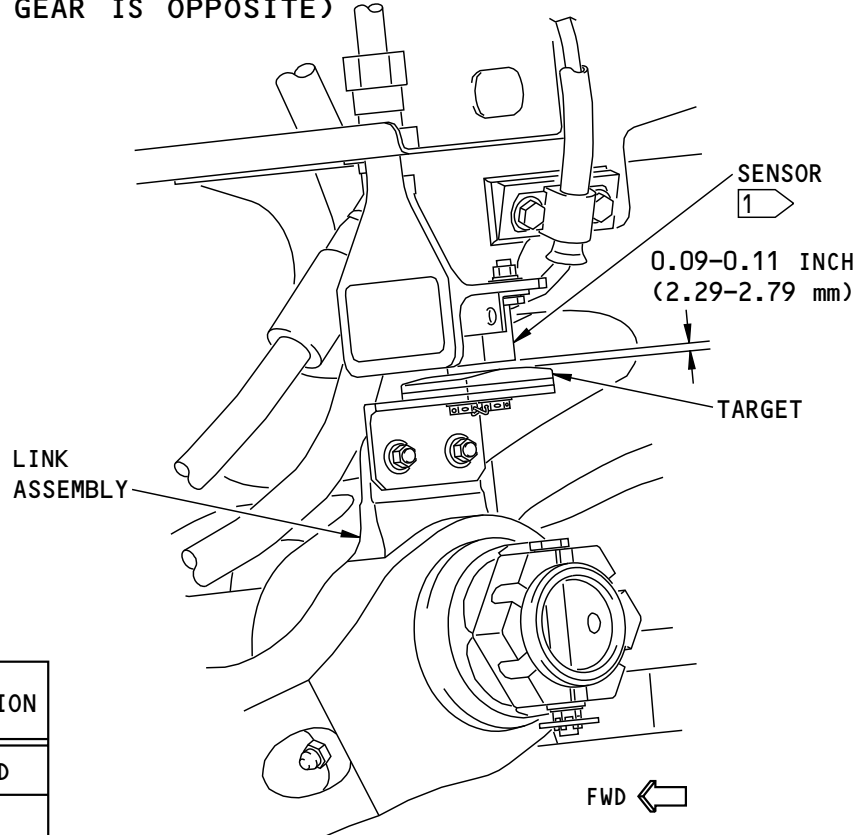
D633A103-SIA

Page 301
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



**LEFT MAIN LANDING GEAR
(RIGHT MAIN LANDING GEAR IS OPPOSITE)**



1	SENSOR NO.	MLG	LOCATION
	S1010	R	OUTBD
	S1011	R	INBD
	S1012	L	OUTBD
	S1013	L	INBD

(EXAMPLE)

(A)

G56894 S0006743671_V2

**Main Landing Gear Air/Ground Sensor Component Location
Figure 302/32-09-00-990-802**

EFFECTIVITY
SIA ALL

32-09 TASK SUPPORT

D633A103-SIA

Page 302
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

802. Main Landing Gear Wheels Shimmy or Vibrate During Taxi, Takeoff, or Landing - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The main wheels shimmy or vibrate during taxi, takeoff, or landing.

B. Possible Causes

- (1) Imbalanced wheels, tires, or wheel/tire assemblies due to uneven tread wear.
- (2) Main Landing Gear shimmy.
- (3) A leaking shimmy damper or worn or loose main landing gear components such as shimmy damper, torsion links or apex joint bushings.
- (4) Under-serviced or over serviced Main Landing Gear (MLG) shock struts caused by loss of oil or gas or improper servicing methods.
- (5) Airplane being parked overnight in cold weather conditions. This can cause the tires to cold set and tire imbalance.

C. Fault Isolation Procedure

- (1) If main landing gear vibration is severe at landing, do these tasks:
 - Phase I Inspection, AMM TASK 05-51-68-210-801
 - Phase II Inspection, AMM TASK 05-51-68-210-802.
 - (a) If you find a problem during the inspection, do these steps:
 - 1) Do the corrective action specified in the Aircraft Maintenance Manual (AMM) task.
 - 2) If the observed fault symptom is gone, then you corrected the fault.
 - (b) If you do not find a problem during the inspection, then continue.
- (2) Inspect the MLG tires.
 - Tires - Inspection, AMM TASK 32-45-00-700-803.
 - (a) If you find a problem during the inspection, do these steps:
 - 1) Do the corrective action specified in the AMM task.
 - 2) If the observed fault symptom is gone, then you corrected the fault.
 - (b) If you do not find a problem during the inspection, then continue.
- (3) For the main landing gear, do this task:
 - Main Landing Gear Inspection, AMM TASK 32-11-00-200-801.
 - (a) Repair any problems that you find
 - (b) If the observed fault symptom is gone, then you corrected the fault.
 - (c) If the observed fault symptom stays, then continue.
- (4) For the main landing gear, do this task:
 - Main Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-31-610-801.
 - (a) If you find a problem during the inspection, do these steps:
 - 1) Do the corrective action specified in the AMM task.
 - 2) If the observed fault symptom is gone, then you corrected the fault.
 - (b) If you did not find a problem during the inspection, then continue.
- (5) For the shimmy damper, check for leaks.
 - Gross Internal Leakage Check, AMM TASK 29-00-00-790-802.

EFFECTIVITY
SIA ALL

32-11 TASK 802

D633A103-SIA

Page 201
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) If leakage exceeds limits, then repair or replace shimmy damper.
 - Main Landing Gear Shimmy Damper Compensator Removal, AMM TASK 32-11-81-000-803
 - Main Landing Gear Shimmy Damper Manifold Assembly Installation, AMM TASK 32-11-81-400-803
 - Main Landing Gear Shimmy Damper Manifold Assembly Removal, AMM TASK 32-11-81-000-804
 - Main Landing Gear Shimmy Damper End Gland Assembly Installation, AMM TASK 32-11-81-400-804.
- (b) If the observed fault symptom is gone, then you corrected the fault.
- (c) If the observed fault symptom stays, then continue.
- (6) Examine MLG torsion links for worn or looseness.
 - Main Landing Gear Torsion Links Inspection, AMM TASK 32-11-51-200-801.
- (a) If you find a problem during the inspection, do these steps:
 - 1) Do the corrective action specified in the AMM task.
 - 2) If the observed fault symptom is gone, then you corrected the fault.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-11 TASK 802

D633A103-SIA

Page 202
Oct 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

801. Nose Landing Gear Shock Strut Deflated or Low Pressure Problems - Fault Isolation

A. Description

- (1) The Nose Landing Gear (NLG) strut is low and (or) flat.
- (2) If the operators reliability data indicates that low strut reports are seasonal, and they are more frequent during winter months, it is acceptable to over-service the strut with additional nitrogen to increase the dimension "X" by 1 in. (25 mm). This must be done in a relatively warm environment (e.g. warm weather or after resting in an ambient temperature hangar) such that when the aircraft is cold, or arrives in a cold environment, the strut is at a more normal dimension "X". Refer to Cold Weather Unattended Parking at Temperatures Below 32°F (0°C), AMM TASK 12-33-02-600-805.
- (3) For operators experiencing frequent reports of low struts, that it could be beneficial to perform a full fluid and nitrogen service more frequently than the Maintenance Planning Data (or Document) (MPD) recommended 3000 cycle interval.
 - (a) The NLG strut pressure and dimension "X" must be checked within 5-10 cycles in accordance with Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.

B. Possible Causes

- (1) Low level of fluid or gas in the strut
- (2) Oil Charge Valve
- (3) Gas Charging Valve
- (4) Dynamic Seal
- (5) Static Seal
- (6) Metering Pin Seal
- (7) Orifice Support Tube Seal

C. Related Data

- (1) 737NG-FTD-32-11004: 737NG Experience With Low/Flat Nose Landing Gear Shock Strut

D. Initial Evaluation

- (1) Do the Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.
NOTE: Due to the very small volume NLG strut, with a forward Center of Gravity (CG) and relatively heavy aircraft, the NLG strut will look low, but it may indeed still be on the servicing curve.
 - (a) It is acceptable to simply top off with fluid in lieu of performing a 2 point check to make sure that the correct fluid volume is in the NLG strut Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
 - (b) If the measured extension and pressure are on the curve in the service chart then there was an intermittent fault.
 - (c) If the measured extension and pressure are not on the curve in the service chart, do the Fault Isolation Procedure.

E. Fault Isolation Procedure

- (1) Examine for fluid and/or nitrogen leaks at the oil charge valve, charging valve, dynamic seal, static seal, metering pin seal, and orifice support tube seal on the NLG strut. This is the task: Nose Landing Gear Shock Strut Seal Leakage Check, AMM TASK 32-21-11-200-801.
 - (a) If there the fluid leak, replace the parts that leaks. These are the tasks:

EFFECTIVITY
SIA ALL

32-21 TASK 801

D633A103-SIA

Page 201
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- Replace the Active Static Seals and the Active Dynamic Seals with the Spare Seals, AMM TASK 32-21-11-960-801
- Replace the Active Seals and Spare Seals, AMM TASK 32-21-11-960-802
- Nose Landing Gear Gas Charging Valve - Removal, AMM TASK 32-21-00-000-802
- Nose Landing Gear Gas Charging Valve - Installation, AMM TASK 32-21-00-400-802
 - 1) Do the Repair Confirmation at the end of this task.
- (b) If you do not find fluid leak, then replace the oil charge valve and gas charging valve. These are the tasks:

NOTE: The valves can be possible sources of nitrogen leaks.

- Nose Landing Gear Gas Charging Valve - Removal, AMM TASK 32-21-00-000-802
- Nose Landing Gear Gas Charging Valve - Installation, AMM TASK 32-21-00-400-802
 - 1) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

- (1) Do the Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802 at the end of the task.
- (2) Do the Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.
 - (a) If the observed fault symptom is gone, then you corrected the problem.
 - (b) If the problem still exists, continue the Fault Isolation Procedure at the subsequent step.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-21 TASK 801

D633A103-SIA

Page 202
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

801. NOSE GEAR, LEFT GEAR, and RIGHT GEAR Red Lights On (On Ground Only) - Fault Isolation

A. Description

- (1) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these landing gear conditions:
 - (a) Landing gear down and locked
 - (b) Disagree
 - (c) Gear not down warning.
- (2) The red NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights comes on for these conditions:
 - (a) Disagree: lever down, nose, left, and right gear not down and locked
 - (b) Disagree: lever not down, nose, left, and right gear not up and locked
 - (c) Gear not down warning.
- (3) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Wiring problem
- (2) Proximity switch electronics unit (PSEU), M2061
- (3) Landing gear control lever module, M1952
- (4) Landing gear control cable out of adjustment

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

E. Initial Evaluation



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Make sure the control lever for the landing gear is fully in the detent for the DN position.
- (3) If the red NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights are on then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-30 TASK 801

D633A103-SIA

Page 201
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (4) If the red NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights do not come on, and the green NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights are on, then you corrected the fault.

F. Fault Isolation Procedure

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- (a) If the PSEU BITE shows a PSEU internal fault or NOSE, L, or R RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
- 1) Do the Repair Confirmation at the end of this task.
- (b) If the PSEU BITE does not show a PSEU internal fault or NOSE, L, or R RED LT FLT, then continue.
- (2) Do this check for power at the landing gear control lever module:
- (a) Remove the landing gear control lever module, M1952. To remove it, do this task: Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801.
- (b) Do a check for 28 VDC, from the PSEU, at pin 2 of connector D11990 in the flight compartment.
- NOTE:** The connector D11990 is located at the control lever module, M1952, on the P2-3 panel.
- (c) If there is not 28 VDC at pin 2 of connector D11990, then do these steps:
- 1) Disconnect connector D10982 for the landing gear lever switch.
- NOTE:** The connector D10982 is located on the PSEU, M2061 on the E-11 rack in the forward electrical equipment bay.
- 2) Repair the wiring between these pins of connector D11990 in the flight compartment and connector D10982 at the E-11 rack:
- | D10982 | D11990 |
|--------|--------|
| pin 1 | pin 2 |
- 3) Re-connect the connector D10982 to the PSEU, M2061.
- 4) Re-connect the connector D11990 at the control lever module, M1952.
- 5) Re-install the control lever module. To install it, do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
- 6) Do the Repair Confirmation at the end of this task.
- (d) If there is 28 VDC at pin 2 of connector D11990, then continue.
- (3) Do this check of the switch and wiring on the control lever module, M1952:
- (a) Do a check for an open circuit between pin 1 and pin 2 of connector D11990 on the control lever module, M1952.
- (b) If there is not continuity between pin 1 and pin 2 of connector D11990 on the control lever module, then do these steps:
- 1) Replace the control lever module. These are the tasks:
- Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (c) If there is continuity between pin 1 and pin 2 of connector D11990 on the control lever module, then do these steps:

EFFECTIVITY
SIA ALL

32-30 TASK 801

D633A103-SIA

Page 202
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) Clean the connector D11990 and make sure the pins are not damaged
 - 2) Re-connect the connector D11990
 - 3) Re-install the control lever module, do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
 - 4) Do the Repair Confirmation at the end of this task.
- (4) Do a check of the landing gear control cable adjustment. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.

G. Repair Confirmation

- (1) Make sure the control lever for the landing gear is in the DN position.



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) If the red NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights are not on, and the green NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights are on, then you corrected the fault.

END OF TASK

806. Nose Landing Gear Slow to Retract or Extend - Fault Isolation

A. Description

- (1) The nose landing gear extension and retraction system has these hydraulic components:
- (a) Retract actuator
 - (b) Lock mechanism
 - (c) Lock actuator
 - (d) Lock valve manifold
 - (e) Transfer cylinder
 - (f) Selector/bypass valve
 - (g) Landing gear control cable system
- (2) The sequence for nose gear retraction is as follows:
- (a) The landing gear selector/bypass valve supplies up pressure when the control lever for the landing gear is moved to the UP position.
 - (b) Up pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the down side. This gives a time delay to let the lock actuator unlock the lock mechanism before the retract actuator gets up pressure.
 - (c) Up pressure goes to the lock actuator. The lock actuator retracts and unlocks the lock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, up pressure goes to the up side of the retract actuator. The retract actuator moves to retract the nose gear.
 - (e) When the nose gear moves into the up position the lock mechanism moves to the lock position.

EFFECTIVITY
SIA ALL

32-30 TASKS 801-806

D633A103-SIA

Page 203
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (f) The lock springs hold the lock mechanism in the overcenter locked position.
- (3) The sequence for nose gear extension is as follows:
 - (a) The landing gear selector valve supplies down pressure when the control lever for the landing gear is moved to the DN position.
 - (b) Down pressure moves the piston in the transfer cylinder to the up side. This momentarily applies an up force to the nose landing gear to decrease the forces in the lock mechanism. Then the lock actuator can unlock the lock mechanism.
 - (c) Down pressure goes to the lock actuator. The lock actuator extends and unlocks the lock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, down pressure goes to the down side of the gear actuator. The gear actuator moves to extend the nose gear.
 - (e) When the nose gear moves into the down position the lock actuator extends to move the lock mechanism to the lock position.
 - (f) The lock springs hold the lock mechanism in the overcenter locked position.
- (4) (SDS SUBJECT 32-32-00)

B. Possible Causes

- (1) A restriction or internal leakage in one of these components for the nose gear:
 - (a) Lock actuator
 - (b) Lock valve manifold
 - (c) Retract actuator
 - (d) Check valves in the gear Up and gear Down lines for the steering return pressure
 - (e) Transfer cylinder
- (2) A restriction in the hydraulic lines from/to the selector valve
- (3) Nose gear wheel well door rigging
- (4) Landing gear selector/bypass valve
- (5) The attach points for the drag strut assembly on the nose gear
- (6) Nose gear trunnion bushings
- (7) Rigging of the landing gear selector/bypass valve

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

EFFECTIVITY
SIA ALL

32-30 TASK 806

D633A103-SIA

Page 204
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

E. Initial Evaluation

- (1) Do the operational test for the nose landing gear. Do this task: Operational Test for the Nose Landing Gear, AMM TASK 32-33-00-710-801.
- (2) If the nose landing gear extends or retracts very slowly, then do the Fault Isolation Procedure below.
- (3) If the retraction/extension time for the nose landing gear is acceptable, then there was an intermittent fault. Do these steps to complete this task:
 - (a) Make sure the downlock pin is installed on the nose landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure the control lever for the landing gear is in the DN position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

F. Fault Isolation Procedure

- (1) Make sure there are no restrictions or internal leakage in the lock actuator, the lock valve manifold, the retract actuator, the steering system check valves, or the transfer cylinder for the nose gear.
 - (a) If there is a restriction in one of the above components then do these steps, as applicable:
 - 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 3) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 4) Replace the nose gear steering system check valves.
 - 5) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 6) Do the Repair Confirmation at the end of this task.
 - (b) If there is not a restriction in the lock actuator, the lock valve manifold, the retract actuator, the steering system check valves, or the transfer cylinder then continue.
- (2) Make sure there are no restrictions in the hydraulic lines from the landing gear selector/bypass valve.
 - (a) If there is a restriction in the hydraulic lines from the selector/bypass valve to the components for nose landing gear extension/retraction, then do these steps:
 - 1) Flush or change the hydraulic lines.
 - 2) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-30 TASK 806

D633A103-SIA

Page 205
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) If there is not a restriction in the hydraulic lines, then continue.
- (3) Adjust the nose landing gear wheel well door linkage, do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, AMM TASK 32-33-61-820-802.
- (4) Replace the landing gear selector/bypass valve. These are the tasks:
 - Landing Gear Selector Valve Removal, AMM TASK 32-31-51-020-801
 - Landing Gear Selector Valve Installation, AMM TASK 32-31-51-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (5) Inspect the pins and bushings at the attach points for the drag strut on the nose landing gear.
 - (a) If the pins or bushings are damaged, then do these steps:
 - 1) Replace the drag strut for the nose landing gear. To do this, these are the tasks:
 - Nose Landing Gear Drag Strut Removal, AMM TASK 32-21-21-000-801
 - Nose Landing Gear Drag Strut Installation, AMM TASK 32-21-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the pins or bushings at the hinge points for the side strut are not damaged, make sure they are well lubricated and then continue.
- (6) Inspect the trunnion pin installation on the nose landing gear, do this task: Nose Landing Gear Inspection, AMM TASK 32-21-00-200-801.
 - (a) If the trunnion pin freeplay is not correct or a trunnion pin is damaged, then do these steps:
 - 1) Make sure the trunnion pin freeplay is correct or replace the damaged trunnion pin. These are the tasks:
 - Nose Landing Gear - Removal, AMM TASK 32-21-00-000-801
 - Nose Landing Gear - Installation, AMM TASK 32-21-00-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the trunnion pin freeplay is correct or the pins are not damaged, make sure they are well lubricated and then continue.
- (7) Make sure the landing gear control system is adjusted correctly. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - (a) If the landing gear control system is not adjusted correctly, then do these steps:
 - 1) Do the adjustment of the landing gear control system. To adjust it, do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the landing gear control system is adjusted correctly, then continue.

G. Repair Confirmation

- (1) Do the operational test for the nose landing gear. Do this task: Operational Test for the Nose Landing Gear, AMM TASK 32-33-00-710-801.
 - (a) If the operational test for the nose landing gear is satisfactory, then you corrected the fault.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-30 TASK 806

D633A103-SIA

Page 206
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

807. NOSE GEAR Green Light Not On With Gear Lever DN, NOSE GEAR Red Light On, Alternate Gear Extension Attempted - Fault Isolation

A. Description

- (1) The nose landing gear extension and retraction system has these hydraulic components:
 - (a) Retract actuator
 - (b) Lock mechanism
 - (c) Lock actuator
 - (d) Lock valve manifold
 - (e) Transfer cylinder
 - (f) Selector/bypass valve
 - (g) Landing gear control cable system
- (2) The sequence for nose gear retraction is as follows:
 - (a) The landing gear selector/bypass valve supplies up pressure when the control lever for the landing gear is moved to the UP position.
 - (b) Up pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the down side. This gives a time delay to let the lock actuator unlock the lock mechanism before the retract actuator gets up pressure.
 - (c) Up pressure goes to the lock actuator. The lock actuator retracts and unlocks the lock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, up pressure goes to the up side of the retract actuator. The retract actuator moves to retract the nose gear.
 - (e) When the nose gear moves into the up position the lock mechanism moves to the lock position.
 - (f) The lock springs hold the lock mechanism in the overcenter locked position.
- (3) The sequence for nose gear extension is as follows:
 - (a) The landing gear selector valve supplies down pressure when the control lever for the landing gear is moved to the DN position.
 - (b) Down pressure moves the piston in the transfer cylinder to the up side. This momentarily applies an up force to the nose landing gear to decrease the forces in the lock mechanism. Then the lock actuator can unlock the lock mechanism.
 - (c) Down pressure goes to the lock actuator. The lock actuator extends and unlocks the lock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, down pressure goes to the down side of the gear actuator. The gear actuator moves to extend the nose gear.
 - (e) When the nose gear moves into the down position the lock actuator extends to move the lock mechanism to the lock position.
 - (f) The lock springs hold the lock mechanism in the overcenter locked position.
- (4) (SDS SUBJECT 32-32-00)

B. Possible Causes

- (1) Damage to, or jammed nose gear shock strut, drag brace or lock link
- (2) Damage to, or jammed nose gear wheel well door linkage

EFFECTIVITY
SIA ALL

32-30 TASK 807

D633A103-SIA

Page 207
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (3) Damage to, or jammed nose gear lock actuator or retract actuator
- (4) Obstruction in nose gear lock link
- (5) Restriction or internal leakage in one of these components:
 - (a) Lock actuator
 - (b) Lock valve manifold
 - (c) Retract actuator
 - (d) Transfer cylinder
- (6) Proximity Sensor Electronics Unit (PSEU)
- (7) Electrical Wiring Problem

C. Related Data

- (1) (SSM 32-30-00)

D. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Visually examine the NLG shock strut, NLG drag brace and NLG lock link for damage and if the components cannot move freely.
 - (a) If the NLG shock strut is damaged or cannot move freely, then do these steps.
 - 1) If the shock strut cannot move freely, then adjust the shock strut until the shock strut can move freely.
 - 2) If the shock strut is damaged, then replace the shock strut. These are the tasks:
 - Nose Landing Gear - Removal, AMM TASK 32-21-00-000-801
 - Nose Landing Gear - Installation, AMM TASK 32-21-00-400-801
 - 3) Do the Repair Confirmation at the end of this task.
 - (b) If the shock strut can move freely and is not damaged, then continue.
 - (c) If the NLG drag strut is damaged or cannot move freely, then do these steps.
 - 1) If the drag strut cannot move freely, then adjust the drag strut until the shock strut can move freely.
 - 2) If the drag strut is damaged, then replace the drag strut. These are the tasks:
 - Nose Landing Gear Drag Strut Inspection, AMM TASK 32-21-21-200-801
 - Nose Landing Gear Drag Strut Removal, AMM TASK 32-21-21-000-801
 - Nose Landing Gear Drag Strut Installation, AMM TASK 32-21-21-400-801

EFFECTIVITY
SIA ALL

32-30 TASK 807

D633A103-SIA

Page 208
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 3) Do the Repair Confirmation at the end of this task.
- (d) If the drag strut can move freely and is not damaged, then continue.
- (e) If the NLG lock links are damaged or cannot move freely, then do these steps.
 - 1) If the lock links cannot move freely, then remove all objects that do not let the lock links move freely. Adjust the lock links until the lock links can move freely.
 - 2) If the lock links are damaged, then replace the lock links. These are the tasks:

NOTE: The Task Nose Gear Lock Mechanism Inspection, AMM TASK 32-33-51-200-801 gives the tolerance of the components of the lock links.

 - Nose Landing Gear Lock Mechanism Removal, AMM TASK 32-33-51-000-801
 - Nose Gear Lock Mechanism Installation, AMM TASK 32-33-51-400-801
 - 3) Do the Repair Confirmation at the end of this task.
- (f) If the lock links can move freely and are not damaged, then continue.
- (3) Visually examine the NLG wheel well door linkage for damage and if the components cannot move freely.
 - (a) If the NLG wheel well door linkage is damaged or cannot move freely, then do these steps.
 - 1) If the wheel well door linkage cannot move freely, then adjust the wheel well door linkage until the wheel well door linkage can move freely. This is the task:
 - Nose Gear Wheel Well Door Linkage Adjustment and Check, AMM TASK 32-33-61-820-802
 - 2) If the wheel well door linkage is damaged, then replace the wheel well door linkage. These are the tasks:

NOTE: The Task Nose Gear Wheel Well Door Linkage Inspection, AMM TASK 32-33-61-200-801 gives the tolerance of the components of the wheel well door linkage.

 - Nose Gear Wheel Well Door Linkage Removal, AMM TASK 32-33-61-000-801
 - Nose Gear Wheel Well Door Linkage Installation, AMM TASK 32-33-61-400-801
 - 3) Do the Repair Confirmation at the end of this task.
 - (b) If the wheel well door linkage can move freely and is not damaged, then continue.
- (4) Visually examine the NLG lock actuator and retract actuator for damage and if the components cannot move freely.
 - (a) If the NLG lock actuator is damaged or cannot move freely, then do these steps.
 - 1) If the lock actuator cannot move freely, then adjust the lock actuator until the lock actuator can move freely.
 - 2) If the lock actuator door linkage is damaged, then replace the lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 3) Do the Repair Confirmation at the end of this task.
 - (b) If the lock actuator can move freely and is not damaged, then continue.
 - (c) If the NLG retract actuator is damaged or cannot move freely, then do these steps.

EFFECTIVITY
SIA ALL

32-30 TASK 807

D633A103-SIA

Page 209
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 1) If the retract actuator cannot move freely, then adjust the retract actuator until the lock actuator can move freely.
- 2) If the retract actuator door linkage is damaged, then replace the retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
- 3) Do the Repair Confirmation at the end of this task.
- (d) If the retract actuator can move freely and is not damaged, then continue.
- (5) Make sure there are no restrictions or internal leakage in the lock actuator, the lock valve manifold, the retract actuator or the transfer cylinder, for the nose gear.
 - (a) If there is a restriction in one of the above components then do these steps, as applicable:
 - 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 3) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 4) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 5) Do the Repair Confirmation at the end of this task.
 - (b) If there is not a restriction in the transfer cylinder, the downlock actuator, the lock valve manifold, or the retract actuator, then continue.
- (6) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault, a NOSE GRN LT FLT, or a NOSE RED LT FLT, then continue.

E. Repair Confirmation



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

EFFECTIVITY
SIA ALL

32-30 TASK 807

D633A103-SIA

Page 210
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (2) If the airplane is not on jacks, then do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (3) Put the control lever for the landing gear in the OFF position.
- (4) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (5) Put the control lever to the DN position to hydraulically extend the nose gear.
- (6) If the red NOSE GEAR light is not on, and the green NOSE GEAR light is on, then you corrected the fault. Do these steps to complete the task:



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (a) Install the downlock pins on the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (c) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

————— **END OF TASK** —————

809. Landing Gear Extends With Landing Gear Lever at OFF, NOSE GEAR, LEFT GEAR, RIGHT GEAR Green Lights on - Fault Isolation

A. Description

- (1) The landing gear control system controls the extension and retraction of the nose and main landing gear.
- (2) The landing gear control system has these components:
 - (a) Landing gear control lever assembly
 - (b) Landing gear push/pull control cable
 - (c) Forward quadrant and system cables
 - (d) Selector valve
 - (e) Transfer valve
- (3) Move the landing gear control lever to control the extension and retraction of the landing gear. The control lever moves the selector valve through cables.
- (4) The control lever operates a push/pull cable which moves the forward quadrant assembly. The forward quadrant assembly is below the flight compartment floor.
- (5) The forward quadrant moves the landing gear selector valve through control cables and the selector valve quadrant.
- (6) The landing gear selector valve supplies hydraulic pressure to extend and retract the nose and main landing gear. The selector valve is in the main landing gear wheel well on the upper bulkhead.
- (7) The three positions of the landing gear selector valve are as follows:
 - (a) UP - pressurized to retract
 - (b) OFF - extension and retraction components are not pressurized

EFFECTIVITY
SIA ALL

32-30 TASKS 807-809

D633A103-SIA

Page 211
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (c) DN - pressurized to extend
- (8) (SDS SUBJECT 32-31-00)

B. Possible Causes

- (1) Landing gear control lever moved past OFF position when moving from UP to OFF
- (2) Landing gear control lever moved too fast from UP to OFF after red lights go out
- (3) Rigging of the landing gear control system cables
- (4) Landing gear selector valve
- (5) Landing gear control lever assembly

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

D. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) Electrically ground the airplane. Do this task: Static Grounding, AMM TASK 20-40-11-910-801.
- (c) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (d) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

- (e) Make sure the control lever for the landing gear is in the DN position.
- (f) Remove the downlock pins from the nose and main landing gear. To remove the downlock pins, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (g) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

EFFECTIVITY
SIA ALL

32-30 TASK 809

D633A103-SIA

Page 212
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (h) Move the two thrust levers to the full forward position.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (i) Move the control lever for the landing gear to UP to retract the landing gear.
- (j) Make sure the NOSE, LEFT GEAR, and RIGHT GEAR green lights and red lights are off.
- (2) Do these steps to make sure the landing gear control system is adjusted correctly:
- (a) Move the control lever for the landing gear to the OFF position.
- (b) If the landing gear extended and the NOSE, LEFT GEAR, and RIGHT GEAR green lights came on when you put the control lever to the OFF position, then do these steps:
- 1) Put the control lever for the landing gear to the DN position.
 - 2) Do the landing gear control system adjustment. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - 3) Do the Repair Confirmation at the end of this task.
 - 4) If the Repair Confirmation is not satisfactory, then continue.
- (3) Replace the landing gear selector valve. These are the tasks:
- Landing Gear Selector Valve Removal, AMM TASK 32-31-51-020-801
 - Landing Gear Selector Valve Installation, AMM TASK 32-31-51-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (b) If the Repair Confirmation is not satisfactory, then continue.
- (4) Replace the landing gear control lever assembly. These are the tasks:
- Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (5) Clean the landing gear control lever between the outer shaft and the outer lever sleeve using alcohol, B50073 spray or liquid.

E. Repair Confirmation

- (1) Remove the downlock pins from the nose and main landing gear. To remove the downlock pins, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (3) Move the control lever for the landing gear to UP to retract the landing gear.
- (4) Move the control lever for the landing gear to the OFF position.

EFFECTIVITY
SIA ALL

32-30 TASK 809

D633A103-SIA

Page 213
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (5) If the landing gear did not extend when you put the control lever to the OFF position, then you corrected the fault. Do these steps to complete this task:
 - (a) Move the control lever to the DN position to extend the landing gear.
 - (b) Install the downlock pins on the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

————— END OF TASK —————

810. Nose Gear Commanded Up, NOSE GEAR Green Light and NOSE GEAR Red Light On - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) Nose Landing Gear: NOSE GEAR green light does not go off with landing gear lever at UP. NOSE GEAR red light on.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these nose gear conditions:
 - (a) Gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and gear position disagree
 - (c) Throttle position and gear position disagree.
 - (d) The red NOSE GEAR light comes on for these conditions:
 - (e) Disagree: lever down, nose gear not down and locked
 - (f) Disagree: lever not down, nose gear not up and locked
 - (g) Disagree: nose gear not down, throttle retarded and altitude below 800 ft (244 m)
- (3) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Ground lock pin installed
- (2) Proximity switch electronics unit (PSEU), M2061
- (3) Nose gear lock actuator
- (4) Nose gear lock valve manifold
- (5) Nose gear retract actuator
- (6) Check valves in the gear Up and Down lines for steering return pressure
- (7) Nose gear transfer cylinder
- (8) Nose gear retract fuse
- (9) A blocked hydraulic line
- (10) Nose gear lock mechanism
- (11) Position sensors damaged or not adjusted correctly

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)

EFFECTIVITY
SIA ALL

32-30 TASKS 809-810

D633A103-SIA

Page 214
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

(3) (WDM 32-64-11, 12)

D. Initial Evaluation

- (1) Make sure the control lever for the landing gear is in the DN position.
- (2) Do a check to make sure the groundlock pin was installed. If it was, then remove it and you corrected the fault. If not, then continue.



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (3) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (4) Examine these components on the nose gear and in the nose wheel well for damage:
 - (a) Wiring and sensors
 - (b) Sensor brackets
 - (c) Lock links
 - (d) Lock springs
 - (e) Retract actuator
 - (f) Lock actuator
 - (g) Ground lock pin
 - (h) Lock manifold
 - (i) Transfer cylinder



WARNING

REMOVE PERSONS AND EQUIPMENT FROM THE NOSE GEAR PATH. WHEN THE NOSE GEAR RETRACTS, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (5) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (6) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (7) Remove the downlock pin for the nose landing gear. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (8) Move the control lever for the landing gear to the UP position.
 - (a) If the red NOSE GEAR light and the green NOSE GEAR lights stay on, then do the Fault Isolation Procedure - Nose Gear Retraction.

EFFECTIVITY
SIA ALL

32-30 TASK 810

D633A103-SIA

Page 215
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) If the red NOSE GEAR light goes out, and the green NOSE GEAR light is not on, then there was an intermittent fault. Do these steps to complete this task:
 - 1) Move the control lever for the landing gear to the DN position.
 - 2) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

E. Fault Isolation Procedure - Nose Gear Retraction

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault or NOSE RED LT FLT, then continue.

F. Fault Isolation Procedure - Internal Leakage Check



MAKE SURE YOU CONNECT A HOSE TO HYDRAULIC PORTS THAT ARE OPENED TO THE ATMOSPHERE FOR THIS CHECK AND THAT IT GOES TO A SUITABLE CONTAINER FOR EXCESS FLOW. HYDRAULIC FLUID THAT SPRAYS FREELY INTO THE AIR CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONNEL.

NOTE: One procedure to use to find internal leakage without component removal is to disconnect the hydraulic line from the port on that component that will not have flow. If there is flow, the component is bad.

- (1) Do this check for internal leakage:
 - (a) Move the control lever for the landing gear to the DN position.



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (d) Listen for noise as the hydraulic fluid flows through the components.



DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (e) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.

EFFECTIVITY
SIA ALL

32-30 TASK 810

D633A103-SIA

Page 216
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Move the control lever for the landing gear to the UP position.
- (g) Listen for noise as the hydraulic fluid flows through the components.



DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (h) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.
 - (i) Move the control lever for the landing gear to the DN position.
 - (j) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (k) Replace the leaking parts.
 - (l) After the replacement of one or more components do the Repair Confirmation at the end of this task.
 - (m) If the nose gear did not operate correctly after you replaced the leaking part, then continue.
- (2) Examine the quantity of flow per minute:
- (a) Make sure the control lever for the landing gear is in the DN position.



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (d) Disconnect the gear DOWN line from the nose gear lock actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (e) Move the control lever for the landing gear to the OFF position.

EFFECTIVITY
SIA ALL

32-30 TASK 810

D633A103-SIA

Page 217
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



WARNING

KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (f) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (g) Move the control lever for the landing gear to the UP position.
- (h) Measure the quantity of fluid that leaks out of the gear DOWN port.
- NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (i) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
- 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (j) If the internal leakage is less than 30 cc/min, then continue.
- (k) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (l) Move the control lever for the landing gear to the DN position.
- (m) Connect the gear DOWN line to the nose gear lock actuator.
- (n) Disconnect the gear DOWN line from the lock valve manifold.
- 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (o) Move the control lever for the landing gear to the OFF position.



WARNING

KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (p) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

EFFECTIVITY
SIA ALL

32-30 TASK 810

D633A103-SIA

Page 218
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (q) Move the control lever for the landing gear to the UP position.
- (r) Measure the quantity of fluid that leaks out of the gear DOWN port.
NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (s) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (t) If the internal leakage is less than 30 cc/min, then continue.
- (u) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (v) Move the control lever for the landing gear to the DN position.
- (w) Connect the gear DOWN line to the lock valve manifold.
- (x) Disconnect the gear DOWN line from the gear retract actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (y) Move the control lever for the landing gear to the OFF position.



KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (z) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (aa) Move the control lever for the landing gear to the UP position.
- (ab) Measure the quantity of fluid that leaks out of the gear DOWN port.
NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (ac) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:

EFFECTIVITY
SIA ALL

32-30 TASK 810

D633A103-SIA

Page 219
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 1) Replace the gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (ad) If the internal leakage is less than 30 cc/min, then continue.
- (ae) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (af) Move the control lever for the landing gear to the DN position.
- (ag) Connect the gear DOWN line to the gear retract actuator.
- (ah) Disconnect the gear DOWN line from the transfer cylinder.
- 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (ai) Move the control lever for the landing gear to the OFF position.



KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (aj) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (ak) Move the control lever for the landing gear to the UP position.
- (al) Measure the quantity of fluid that leaks out of the gear DOWN port.
- NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (am) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
- 1) Replace the transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (an) If the internal leakage is less than 30 cc/min, then continue.
- (ao) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (ap) Move the control lever for the landing gear to the DN position.
- (aq) Connect the gear DOWN line to the transfer cylinder.
- (ar) If no problem is found with the components, then continue:

EFFECTIVITY
SIA ALL

32-30 TASK 810

D633A103-SIA

Page 220
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (3) Replace these components one at a time and do a check of nose gear operation after you replace each component:
- (a) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (b) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (c) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (d) Replace the check valves in the gear Up and Down lines for steering Supply and Return pressure.
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (e) Replace the nose gear retract pressure fuse. These are the tasks:
 - Removal of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-000-801
 - Installation of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (f) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (g) Replace the nose gear lock mechanism. These are the tasks:
 - Nose Landing Gear Lock Mechanism Removal, AMM TASK 32-33-51-000-801
 - Nose Gear Lock Mechanism Installation, AMM TASK 32-33-51-400-801

G. Repair Confirmation

- (1) After the replacement of one of more components, test the extension/retraction system for the nose landing gear. Do this task: Nose Landing Gear Test - Component Replacement, AMM TASK 32-33-00-710-802.

EFFECTIVITY
SIA ALL

32-30 TASK 810

D633A103-SIA

Page 221
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (2) If the NOSE GEAR green light goes off and the NOSE GEAR red light is off, then you corrected the fault. Do these steps to complete the task:
 - (a) Move the control lever for the landing gear to DN to extend the landing gear.
 - (b) Install the downlock pin in the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Nose, AMM TASK 07-11-06-580-803.

————— END OF TASK —————

811. Nose Gear Commanded Up, NOSE GEAR Green Light Off, NOSE GEAR Red Light On - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) Nose Landing Gear: NOSE GEAR green light goes off with landing gear lever at UP. NOSE GEAR red light on.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these nose gear conditions:
 - (a) Gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and gear position disagree
 - (c) Throttle position and gear position disagree.
 - (d) The red NOSE GEAR light comes on for these conditions:
 - (e) Disagree: lever down, nose gear not down and locked
 - (f) Disagree: lever not down, nose gear not up and locked
 - (g) Disagree: nose gear not down, throttle retarded and altitude below 800 feet

B. Possible Causes

- (1) Proximity switch electronics unit (PSEU), M2016
- (2) Nose gear doors are not adjusted correctly
- (3) Nose gear lock valve manifold
- (4) Nose gear retract actuator
- (5) Check valves in the gear Up and Down lines for steering Return pressure
- (6) Nose gear transfer cylinder
- (7) Nose gear retract pressure fuses
- (8) Position sensors damaged or not adjusted correctly
- (9) Autothrottle Switchpacks

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)
- (4) (SDS SUBJECT 32-61-00)

EFFECTIVITY
SIA ALL

32-30 TASKS 810-811

D633A103-SIA

Page 222
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

D. Initial Evaluation

- (1) Make sure the control lever for the landing gear is in the DN position.



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) Examine these components on the nose gear and in the nose wheel well for damage:
- (a) Wiring and sensors
 - (b) Sensor brackets
 - (c) Lock links
 - (d) Lock springs
 - (e) Retract actuator
 - (f) Lock actuator
 - (g) Lock manifold
 - (h) Transfer cylinder



WARNING

KEEP ALL PERSONNEL AND EQUIPMENT CLEAR OF THE AREA AROUND THE NOSE GEAR. THE MOVEMENT OF THE NOSE GEAR CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (4) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (5) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (6) Remove the downlock pin for the nose landing gear. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (7) Place the thrust levers in the fully forward position.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (8) Move the control lever for the landing gear to the UP position.
- (a) If the green NOSE GEAR light goes out and the red NOSE GEAR light stays on, then do the Fault Isolation Procedure - Nose Gear Retraction.
 - (b) If the red NOSE GEAR light goes out, and the green NOSE GEAR light is not on, then there was an intermittent fault. Do these steps to complete this task:
 - 1) Move the control lever for the landing gear to the DN position.

EFFECTIVITY
SIA ALL

32-30 TASK 811

D633A103-SIA

Page 223
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 2) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- 3) Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

E. Fault Isolation Procedure - Nose Gear Retraction

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show for a PSEU internal fault or NOSE RED LT FLT, then continue.
- (2) Do this check of the nose gear door adjustment:
 - (a) Move the control lever for the landing gear to the DN position to extend the nose gear.
 - (b) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) Disconnect the nose gear doors from the trunnion clevis on the nose gear. Tie the door linkage so it is out of the way of the nose gear.
 - (d) Remove the downlock pin for the nose landing gear. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (e) Move the control lever for the landing gear to the UP position.
- (f) If the red NOSE GEAR light goes out, and the green NOSE GEAR light is not on, then do these steps:

NOTE: The nose gear doors are not adjusted correctly.

- 1) Move the control lever for the landing gear to the DN position.
 - 2) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) Do the adjustment for the door linkage on the nose wheel well doors. To to this, do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, AMM TASK 32-33-61-820-802.
- (g) If the red NOSE GEAR light is on, then do these steps and continue:
 - 1) Move the control lever for the landing gear to the DN position to extend the nose gear.
 - 2) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) Re-connect the nose gear doors to the trunnion clevis on the nose gear. Do this task: Nose Gear Wheel Well Door Linkage Installation, AMM TASK 32-33-61-400-801.

EFFECTIVITY
SIA ALL

32-30 TASK 811

D633A103-SIA

Page 224
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (3) Replace these components one at a time and do a check of nose gear operation after you replace each component, or, do the Fault Isolation Procedure - Internal Leakage Check to find the bad component:
- (a) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (c) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (d) Replace the check valves in the gear Up and Down lines for steering Supply and Return pressure.
 - 1) Do the Repair Confirmation at the end of this task.
 - (e) Replace the nose gear retract pressure fuse. These are the tasks:
 - Removal of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-000-801
 - Installation of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (f) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (g) Replace the applicable Autothrottle Switchpack. These are the tasks:
 - Autothrottle Switchpack Assembly - Removal, AMM TASK 76-11-07-020-802-F00.
 - Autothrottle Switchpack Assembly - Installation, AMM TASK 76-11-07-400-802-F00.
 - 1) Do the Repair Confirmation at the end of this task.

F. Fault Isolation Procedure - Internal Leakage Check



MAKE SURE YOU CONNECT A HOSE TO HYDRAULIC PORTS THAT ARE OPENED TO THE ATMOSPHERE FOR THIS CHECK AND THAT IT GOES TO A SUITABLE CONTAINER FOR EXCESS FLOW. HYDRAULIC FLUID THAT SPRAYS FREELY INTO THE AIR CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONNEL.

NOTE: One procedure to use to find internal leakage without component removal is to disconnect the hydraulic line from the port on that component that will not have flow. If there is flow, the component is bad.

EFFECTIVITY
SIA ALL

32-30 TASK 811

D633A103-SIA

Page 225
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

(1) Do this check for internal leakage:

- (a) Make sure the control lever for the landing gear is in the DN position.



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801
- (d) Listen for noise as the hydraulic fluid flows through the components.



WARNING

DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (e) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Move the control lever for the landing gear to the UP position.
- (g) Listen for noise as the hydraulic fluid flows through the components.



WARNING

DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (h) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.
- (i) Move the control lever for the landing gear to the DN position.
- (j) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (k) Replace the leaking parts.
- (l) After the replacement of one or more components do the Repair Confirmation at the end of this task.

(2) Examine the quantity of flow per minute:

- (a) Make sure the control lever for the landing gear is in the DN position.

EFFECTIVITY
SIA ALL

32-30 TASK 811

D633A103-SIA

Page 226
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (d) Disconnect the gear DOWN line from the nose gear lock actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (e) Move the control lever for the landing gear to the OFF position.



KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (f) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (g) Move the control lever for the landing gear to the UP position.
- (h) Measure the quantity of fluid that leaks out of the gear DOWN port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (i) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (j) If the internal leakage is less than 30 cc/min, then continue.
- (k) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (l) Move the control lever for the landing gear to the DN position.
- (m) Connect the gear DOWN line to the nose gear lock actuator.
- (n) Disconnect the gear DOWN line from the lock valve manifold.
 - 1) Cap the open tube and install a hose on the open port fitting.

EFFECTIVITY
SIA ALL

32-30 TASK 811

D633A103-SIA

Page 227
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 2) Direct hose into suitable container.
- (o) Move the control lever for the landing gear to the OFF position.



WARNING

KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (p) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (q) Move the control lever for the landing gear to the UP position.
- (r) Measure the quantity of fluid that leaks out of the gear DOWN port.
NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (s) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (t) If the internal leakage is less than 30 cc/min, then continue.
- (u) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (v) Move the control lever for the landing gear to the DN position.
- (w) Connect the gear DOWN line to the lock valve manifold.
- (x) Disconnect the gear DOWN line from the gear retract actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (y) Move the control lever for the landing gear to the OFF position.



WARNING

KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (z) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

EFFECTIVITY
SIA ALL

32-30 TASK 811

D633A103-SIA

Page 228
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (aa) Move the control lever for the landing gear to the UP position.
- (ab) Measure the quantity of fluid that leaks out of the gear DOWN port.
NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (ac) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (ad) If the internal leakage is less than 30 cc/min, then continue.
- (ae) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (af) Move the control lever for the landing gear to the DN position.
- (ag) Connect the gear DOWN line to the gear retract actuator.
- (ah) Disconnect the gear DOWN line from the transfer cylinder.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (ai) Move the control lever for the landing gear to the OFF position.



KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (aj) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (ak) Move the control lever for the landing gear to the UP position.
- (al) Measure the quantity of fluid that leaks out of the gear DOWN port.
NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (am) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:

EFFECTIVITY
SIA ALL

32-30 TASK 811

D633A103-SIA

Page 229
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) Replace the transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (an) If the internal leakage is less than 30 cc/min, then continue.
- (ao) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (ap) Move the control lever for the landing gear to the DN position.
- (aq) Connect the gear DOWN line to the transfer cylinder.
- (ar) If no problem is found with the components, then continue.
- (3) Replace these components one at a time and do a check of nose gear operation after you replace each component:
 - (a) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (c) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (d) Replace the check valves in the gear Up and Down lines for steering Supply and Return pressure.
 - 1) Do the Repair Confirmation at the end of this task.
 - (e) Replace the nose gear retract pressure fuse. These are the tasks:
 - Removal of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-000-801
 - Installation of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (f) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (g) Replace the nose gear lock mechanism. These are the tasks:
 - Nose Landing Gear Lock Mechanism Removal, AMM TASK 32-33-51-000-801
 - Nose Gear Lock Mechanism Installation, AMM TASK 32-33-51-400-801

EFFECTIVITY
SIA ALL

32-30 TASK 811

D633A103-SIA

Page 230
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) Do the Repair Confirmation at the end of this task.
- (h) Replace the applicable Autothrottle Switchpack. These are the tasks:
 - Autothrottle Switchpack Assembly - Removal, AMM TASK 76-11-07-020-802-F00.
 - Autothrottle Switchpack Assembly - Installation, AMM TASK 76-11-07-400-802-F00
- 1) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) After the replacement of one or more components, test the extension/retraction system for the nose landing gear. Do this task: Nose Landing Gear Test - Component Replacement, AMM TASK 32-33-00-710-802.
- (a) If the NOSE GEAR green light goes off and the NOSE GEAR red light is off, then you corrected the fault. Do these steps to complete the task:
 - 1) Move the control lever for the landing gear to DN to extend the landing gear.



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- 2) Install the downlock pin in the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- 3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- 4) Do this task: Lower the Airplane Nose, AMM TASK 07-11-06-580-803.
- (b) If the NOSE GEAR Green lights are off and the NOSE GEAR Red Lights come ON, and stay ON, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

812. Nose Gear Commanded Down, NOSE GEAR Green Light Off, NOSE GEAR Red Light On - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) Nose Landing Gear: NOSE GEAR green light does not go on with landing gear lever at DOWN. NOSE GEAR red light on.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these nose gear conditions:
 - (a) Gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and gear position disagree
 - (c) Throttle position and gear position disagree
 - (d) The red NOSE GEAR light comes on for these conditions:
 - (e) Disagree: lever down, nose gear not down and locked
 - (f) Disagree: lever not down, nose gear not up and locked
- (3) (SDS SUBJECT 32-61-00)

EFFECTIVITY
SIA ALL

D633A103-SIA

32-30 TASKS 811-812

Page 231
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

B. Possible Causes

- (1) Proximity switch electronics unit (PSEU), M2061
- (2) Nose gear lock actuator
- (3) Nose gear lock valve manifold
- (4) Nose gear retract actuator
- (5) Check valves in the gear Up and Down lines for steering return pressure
- (6) Nose gear transfer cylinder
- (7) Nose gear extend fuse
- (8) High internal leakage in the steering system for the nose gear
- (9) A blocked hydraulic line
- (10) Nose gear lock mechanism
- (11) Position sensors damaged or not adjusted correctly

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

D. Initial Evaluation

- (1) Make sure the control lever for the landing gear is in the DN position.



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) Examine these components on the nose gear and in the nose wheel well for damage:
 - (a) Wiring and sensors
 - (b) Sensor brackets
 - (c) Lock links
 - (d) Lock springs
 - (e) Retract actuator
 - (f) Lock actuator
 - (g) Ground lock pin
 - (h) Lock manifold
 - (i) Transfer cylinder

EFFECTIVITY
SIA ALL

32-30 TASK 812

D633A103-SIA

Page 232
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



WARNING

REMOVE PERSONS AND EQUIPMENT FROM THE NOSE GEAR PATH. WHEN THE NOSE GEAR RETRACTS, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (4) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (5) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (6) Remove the downlock pin for the nose landing gear. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (7) Move the control lever for the landing gear to the UP position to retract the nose gear.
 - (a) Move the control lever for the landing gear to the DN position.
 - (b) If the red NOSE GEAR light is on, and the NOSE GEAR green light does not come on, then do the Fault Isolation Procedure - Nose Gear Retraction.
 - (c) If the red NOSE GEAR light goes out, and the green NOSE GEAR light is on, then there was an intermittent fault. Do these steps to complete this task:
 - 1) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 2) Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

E. Fault Isolation Procedure

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault or NOSE RED LT FLT, then continue.
- (2) Do the adjustment for the door linkage on the nose wheel well doors. Do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, AMM TASK 32-33-61-820-802.
 - (a) If the nose gear operated correctly after you did the adjustment for the door linkage, then you corrected the fault.

EFFECTIVITY
SIA ALL

32-30 TASK 812

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 233
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Fault Isolation Procedure - Internal Leakage Check



MAKE SURE YOU CONNECT A HOSE TO HYDRAULIC PORTS THAT ARE OPENED TO THE ATMOSPHERE FOR THIS CHECK AND THAT IT GOES TO A SUITABLE CONTAINER FOR EXCESS FLOW. HYDRAULIC FLUID THAT SPRAYS FREELY INTO THE AIR CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONNEL.

NOTE: One procedure to use to find internal leakage without component removal is to disconnect the hydraulic line from the port on that component that will not have flow. If there is flow, the component is bad. The internal leakage test will not find leakage at the nose gear steering metering valve and system check valves. Steps are included for the nose gear steering metering valve and system check valves.

- (1) Do this check for internal leakage:
- (a) Make sure the control lever for the landing gear is in the DN position.



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (d) Listen for noise as the hydraulic fluid flows through the components.



DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (e) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering metering valve, the nose gear system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Move the control lever for the landing gear to the UP position.
- (g) Listen for noise as the hydraulic fluid flows through the components.

EFFECTIVITY
SIA ALL

32-30 TASK 812

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 234
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



WARNING

DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (h) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering metering valve, the nose gear system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.
 - (i) Move the control lever for the landing gear to the DN position.
 - (j) If noise is heard or heat is felt, for hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (k) Replace the leaking parts.
 - (l) After the replacement of one or more components do the Repair Confirmation at the end of this task.
 - (m) If the nose gear did not operate correctly after you replaced the leaking part, then continue.
- (2) Examine the quantity of flow per minute:
- (a) Make sure the control lever for the landing gear is in the DN position.



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (d) Disconnect the gear UP line from the nose gear lock actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.



WARNING

KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (e) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

EFFECTIVITY
SIA ALL

32-30 TASK 812

D633A103-SIA

Page 235
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Measure the quantity of fluid that leaks out of the gear UP port.
- NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (g) If the amount of fluid that leaks out of the gear UP port is equal to or greater than 30 cc/min, then do these steps:
- 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (h) If the internal leakage is less than 30 cc/min, then continue.
- (i) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (j) Move the control lever for the landing gear to the DN position.
- (k) Connect the gear UP line to the nose gear lock actuator.
- (l) Disconnect the gear UP line from the lock valve manifold.
- 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.



KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (m) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (n) Measure the quantity of fluid that leaks out of the gear UP port.
- NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (o) If the amount of fluid that leaks out of the gear UP port is equal to or greater than 30 cc/min, then do these steps:
- 1) Replace the lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801

EFFECTIVITY
SIA ALL

32-30 TASK 812

D633A103-SIA

Page 236
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 2) Do the Repair Confirmation at the end of this task.
- (p) If the internal leakage is less than 30 cc/min, then continue.
- (q) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (r) Move the control lever for the landing gear to the DN position.
- (s) Connect the gear UP line to the lock valve manifold.
- (t) Disconnect the gear UP line from the gear retract actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.



WARNING

KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (u) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (v) Measure the quantity of fluid that leaks out of the gear UP port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (w) If the amount of fluid that leaks out of the gear UP port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (x) If the internal leakage is less than 30 cc/min, then continue.
- (y) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (z) Move the control lever for the landing gear to the DN position.
- (aa) Connect the gear UP line to the gear retract actuator.
- (ab) Disconnect the gear UP line from the transfer cylinder.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.

EFFECTIVITY
SIA ALL

32-30 TASK 812

D633A103-SIA

Page 237
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



WARNING

KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (ac) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (ad) Measure the quantity of fluid that leaks out of the gear UP port.
- NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (ae) If the amount of fluid that leaks out of the gear UP port is equal to or greater than 30 cc/min, then do these steps:
- 1) Replace the transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (af) If the internal leakage is less than 30 cc/min, then continue.
- (ag) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (ah) Move the control lever for the landing gear to the DN position.
- (ai) Connect the gear UP line to the transfer cylinder.
- (aj) If no problem is found with the components, then do these steps:
- 1) Replace the nose gear steering metering valves. These are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
- (ak) Do the Repair Confirmation at the end of this task.
- (3) Replace these components one at a time and do a check of nose gear operation after you replace each component:
- (a) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (b) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801

EFFECTIVITY
SIA ALL

32-30 TASK 812

D633A103-SIA

Page 238
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (c) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (d) Replace the check valves in the gear Up and Down lines for steering Supply and Return pressure.
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (e) Replace the nose gear extend pressure fuse. These are the tasks:
 - Removal of the Extend Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-000-803
 - Installation of the Extend Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-400-802
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (f) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (g) Replace the nose gear lock mechanism. These are the tasks:
 - Nose Landing Gear Lock Mechanism Removal, AMM TASK 32-33-51-000-801
 - Nose Gear Lock Mechanism Installation, AMM TASK 32-33-51-400-801

G. Repair Confirmation

- (1) After the replacement of one of more components, test the extension/retraction system for the nose landing gear. Do this task: Nose Landing Gear Test - Component Replacement, AMM TASK 32-33-00-710-802.
- (2) If the NOSE GEAR green light comes on and the NOSE GEAR red light is off, then you corrected the fault. Do these steps to complete the task:
 - (a) Move the control lever for the landing gear to DN to extend the landing gear.
 - (b) Install the downlock pin in the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Nose, AMM TASK 07-11-06-580-803.

————— **END OF TASK** —————

EFFECTIVITY
SIA ALL

32-30 TASK 812

D633A103-SIA

Page 239
Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL

813. Landing Gear Control Lever Lock - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The landing gear lever does not move to the UP position in flight. The lever is free to move to the UP position when the lock override is used.
- (2) The control lever for the landing gear has a lever lock mechanism operated by a lever lock solenoid. The lever lock prevents accidental movement of the control lever to the UP position when the airplane is on the ground. When the airplane is in the air or on jacks with the weight off the landing gear and the GSBV (ground spoiler bypass valve) Interlock Valve is in the closed position, the solenoid gets electrical power and releases the lever lock.
- (3) (SDS SUBJECT 32-31-00)

B. Possible Causes

- (1) Circuit breakers
- (2) Lever latch solenoid
- (3) Wiring
- (4) The GSBV Interlock Valve proximity switch/actuation cable
- (5) Proximity switch electronics unit (PSEU), M2061
- (6) Landing gear lever module

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

This is the circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	16	C01356	LANDING GEAR AIR/GND SYS 1

This is the circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2

D. Related Data

- (1) (SSM 31-53-11)
- (2) (SSM 32-09-11)
- (3) (SSM 32-30-00)
- (4) (SSM 32-31-11)
- (5) (SSM 32-61-11)
- (6) (WDM 32-31-11)
- (7) (WDM 32-64-11)

EFFECTIVITY
SIA ALL

32-30 TASK 813



**737-600/700/800/900
FAULT ISOLATION MANUAL**

E. Initial Evaluation

- (1) Make sure the control lever for the landing gear is in the DN position.



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the downlock pins are installed in the nose and main landing gear. To install the pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (4) Prepare to put the airplane in the air mode, do this task: Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801.
- (5) Put the airplane in the air mode, do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.

NOTE: You must use the deactuators to put the airplane in the air mode or put the airplane on jacks. You cannot use the PSEU BITE for this test.

- (6) Do the steps that follow to make sure that the GSBV Interlock Valve is in the closed position:

NOTE: The interlock valve must be in the closed position for the landing gear lever lock solenoid to be energized. The interlock valve proximity switch gives a 'closed' (near) signal when the shock strut is fully extended, or when the interlock valve actuating cable lower end at the right main landing gear strut upper torsion link is disconnected and the cable is manually actuated to the 'closed' position.

- (a) If the airplane is on jacks and the shock strut is fully extended the valve is in the closed position.
- (b) If the airplane is not on jacks, do the following steps to manually actuate the GSBV Interlock actuating cable
- 1) Remove the bolt, washers, and nut to disconnect the cable end from the strut upper torsion link. Do the steps in this task: (AMM TASK 27-62-00-820-803) needed to disconnect the interlock valve actuator cable slider.
 - 2) Move the lower slider until you can easily install rig pin S/B-3 from the kit, F70207-109, through the yoke of the interlock valve.
- (7) Move the control lever for the landing gear to the UP position.
- (a) If you can not move the control lever to the UP position, then do the Fault Isolation Procedure below.
- (b) If you can move the control lever to the UP position, then there was an intermittent fault. Do these steps to complete the task:
- 1) Move the control lever to the DN position
 - 2) Remove the rig pin S/B-3 from the yoke of the interlock valve.
 - 3) Install the bolt, washers, and nut to reconnect the actuator cable end to the strut upper torsion link. Do the steps in this task: (AMM TASK 27-62-00-820-803) needed to reconnect the interlock valve actuator cable slider.
 - 4) Perform PSEU self test to clear any induced maintenance faults, do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

EFFECTIVITY
SIA ALL

32-30 TASK 813

D633A103-SIA

Page 241
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 5) Put the airplane back to the ground mode, do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

F. Fault Isolation Procedure

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or AIR/GND FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault or AIR/GND FLT, then continue.
- (2) Make sure, at the circuit breaker panel, P6-3, the 6b17 LANDING GEAR LATCH & PRESS WARN circuit breaker is in the closed position.
- (3) Do this check for power at the landing gear lever latch solenoid:
 - (a) Disconnect connector D11138 for the lever latch solenoid.

NOTE: The connector D11138 is located on the PSEU in the forward electrical equipment bay.
 - (b) Do a check for 28 VDC at pin 19 of connector D11138 from the lever lock solenoid.
 - 1) If there is not 28 VDC at pin 19 of connector D11138, then do this check of the wiring:
 - a) Remove the landing gear control lever module, M1952. To remove it, do this task: Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801.



CAUTION

MAKE SURE THAT THE POWER AT THE POWER PANEL IS TURNED OFF BEFORE PERFORMING THE CONTINUITY CHECK BELOW. DAMAGE TO EQUIPMENT COULD OCCUR.

- b) Do a check for an open circuit between these pins of connector D11990 in the flight compartment and connector D11138 at the E11 rack:

D11138	D11990
pin 19	pin 8
- c) If there is an open circuit, then do these steps:
- d) Repair the wiring.
- e) Re-install the landing gear control lever module, M1952. To install it, do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
- f) Re-connect the connector D11138 to the PSEU.
- g) Do the Repair Confirmation at the end of this task.
- 2) If there is continuity between pin 19 of connector D11138 and pin 8 of connector D11990, then continue.
- 3) Do a check of the lever lock solenoid functionality by grounding pin 19 of connector D11138. If the solenoid does not energize, then do these steps:
 - a) Replace the lever latch solenoid. These are the tasks:
 - Landing Gear Control Lever Lock Solenoid Removal, AMM TASK 32-31-31-020-801

EFFECTIVITY
SIA ALL

32-30 TASK 813

D633A103-SIA

Page 242
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- Landing Gear Control Lever Lock Solenoid Installation, AMM TASK 32-31-31-400-801
- b) Re-connect the connector D11138 to the PSEU.
- c) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this check of the landing gear lever:
 - (a) Make sure the control lever for the landing gear is in the DN position.



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (d) Put the airplane in the air mode, do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- (e) Move the control lever for the landing gear to the UP position.
- (f) If you can put the control lever to the UP position, then you corrected the fault.
 - 1) Move the control lever for the landing gear to the DN position.
 - 2) Put the airplane back to the ground mode, do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

————— **END OF TASK** —————

814. NOSE GEAR Red Light On (On Ground Only) - Fault Isolation

A. Description



WARNING

THIS CAN BE A VERY DANGEROUS CONDITION. IF THE NOSE LANDING GEAR IS NOT LOCKED IN THE DOWN POSITION IT CAN ACCIDENTALLY RETRACT. IF THE NOSE LANDING GEAR RETRACTS, INJURY OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these landing gear conditions:
 - (a) Landing gear down and locked
 - (b) Disagree
 - (c) Not down warning.
- (2) The red NOSE GEAR light comes on for these conditions:
 - (a) Disagree: lever down, nose gear not down and locked
 - (b) Disagree: lever not down, nose gear down and locked
 - (c) Gear not down warning.
- (3) (SDS SUBJECT 32-61-00)

EFFECTIVITY
SIA ALL

32-30 TASKS 813-814

D633A103-SIA

Page 243
Oct 15/2021

737-600/700/800/900
FAULT ISOLATION MANUAL

B. Possible Causes

- (1) Nose landing gear is not in the locked position
- (2) Proximity sensor or wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

D. Fault Isolation Procedure



DO NOT LET YOURSELF OR ANOTHER PERSON BE UNDER THE AIRPLANE TO CHECK FOR THE DOWNLOCK PIN. IF THE NOSE LANDING GEAR RETRACTS, INJURY OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) If you are not sure if the downlock pin for the nose landing gear is installed, then do these steps:



DO NOT MOVE THE AIRPLANE. THE NOSE LANDING GEAR CAN INADVERTENTLY RETRACT IF IT IS NOT IN THE LOCKED POSITION AND THE DOWNLOCK PIN IS NOT INSTALLED. THIS CAN CAUSE INJURIES OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Stop all maintenance and loading activity that can cause the airplane to bounce, shake or move.
- (b) Make sure the configuration of the hydraulic systems is not changed.
NOTE: If hydraulic power is supplied, leave it on and if it is not supplied, leave it off.
- (c) Make sure the parking brake is set.
- (d) Make sure that chocks are installed against the front and the back of at least one set of MAIN LANDING GEAR tires.



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON THE MAIN LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (e) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

EFFECTIVITY
SIA ALL

32-30 TASK 814

D633A103-SIA

Page 244
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



DO NOT LET YOURSELF OR ANOTHER PERSON UNDER THE AIRPLANE WHEN YOU PUT A CHOCK IN FRONT OF THE NOSE LANDING GEAR TIRE. IF THE NOSE LANDING GEAR RETRACTS, THIS CAN CAUSE INJURY OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Use ropes or a long pole to put a chock in front of the nose landing gear tires, if chocks are not already installed.



DO NOT LET YOURSELF OR ANOTHER PERSON BE UNDER THE AIRPLANE WHEN YOU INSTALL THE JACK PAD. IF THE NOSE LANDING GEAR RETRACTS IT CAN CAUSE INJURIES OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT.

- (g) Do the task to install a jack to lift the nose of the airplane, but do not lift the nose gear tire off the ground. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (h) If hydraulic system A power is supplied, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (i) Install the downlock pin in the nose gear if the downlock pin is not installed. If the downlock pin cannot be installed, push the lock links to the locked position so that the downlock pin can be installed.
- (j) Check the following for damage and missing parts:
- 1) Shock strut
 - 2) Drag brace
 - 3) Lock links
 - 4) Position sensors, targets and wiring
- (k) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- 1) If the PSEU BITE shows a PSEU internal fault or NOSE, L, R RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the PSEU BITE does not show a PSEU internal fault or NOSE, L, R RED LT FLT, then continue.
- (l) Do the operational test for the nose landing gear. Do this task: Operational Test for the Nose Landing Gear, AMM TASK 32-33-00-710-801.
- 1) If the operational test for the nose landing gear was not normal, then do the applicable fault isolation for nose gear extension and retraction.
 - 2) If the operational test for the nose landing gear was normal, then you corrected the fault.
- (m) Do these steps to put the airplane back to its usual condition:
- 1) Make sure the control lever for the landing gear is in the OFF position.

EFFECTIVITY
SIA ALL

32-30 TASK 814

D633A103-SIA

Page 245
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- 2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - 4) Move the control lever for the landing gear to the DN position.
 - 5) Make sure the red NOSE GEAR light does not come on, and the green NOSE GEAR light is on.
 - 6) If the nose of the airplane is still lifted on jacks, then, do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
 - 7) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (n) If the downlock pin is installed in the nose landing gear, then do this task: Landing Gear Position Indicating and Warning System - Test, AMM TASK 32-61-00-710-801.
- (o) If the system test for landing gear position and indication was not normal, then do the applicable fault isolation.
- (p) If the system test for landing gear position and indication was normal, then you corrected the fault. Do these steps to put the airplane back to its usual condition:
- 1) Make sure the control lever for the landing gear is in the OFF position.



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- 2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- 3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- 4) Move the control lever for the landing gear to the DN position.
- 5) Make sure the red NOSE GEAR light does not come on, and the green NOSE GEAR light is on.
- 6) If the nose of the airplane is still lifted on jacks, then do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- 7) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

————— **END OF TASK** —————

EFFECTIVITY
SIA ALL

32-30 TASK 814

D633A103-SIA

Page 246
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

815. Landing Gear Commanded UP, NOSE GEAR, LEFT GEAR and RIGHT GEAR Green and Red Lights are ON - Fault Isolation

A. Description

- (1) This task is for this DISAGREE Condition of the Landing Gear System:
 - (a) The Landing Gear is commanded UP (to retract) and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green and Red Lights come ON.
- (2) This DISAGREE Condition could occur if:
 - (a) The Proximity Switch Electronic Unit (PSEU), M2061 does not receive the Gear Lever DN input from the Control Lever Module, M1952.
 - (b) The Internal Switch is stuck in the DN position.
- (3) The Manual Extension System for the Landing Gear has a Limit Switch in the Manual Extension Access Door (SDS SUBJECT 32-34-00).
 - (a) When the access door is opened for manual extension, the switch sends a signal to the Bypass Valve, which is in the Landing Gear Selector Valve.
 - 1) This moves the Bypass Valve to connect all Landing Gear System Hydraulic Components to the Hydraulic System Return.
- (4) The Landing Gear Control Lever operates four switches in the Landing Gear Lever Module Assembly.

NOTE: Two switches are at the UP position and two switches are at the DN position. There are no switches at the OFF position.

 - (a) At the UP position, Switches S3 and S4 provide input to the Anti-Skid System.
 - (b) At the DN position, Switch S1 provides input to the Landing Gear Lever/Landing Gear Position Disagree Indicating System.
 - (c) At the DN position, Switch S2 provides input to the Passenger Sign Control System.
- (5) Refer to SDS SUBJECT 32-31-00 and SDS SUBJECT 32-34-00 for a detailed description of the Landing Gear Extension and Retraction System.
- (6) Refer to SDS SUBJECT 32-61-00 for a detailed description of the Landing Gear Indicating and Warning System.

B. Possible Causes

- (1) Ground Lock Pins installed
- (2) Manual Extension Limit Switch, S1186, in the DOOR OPEN position.
- (3) Landing Gear Control Cables out of adjustment
- (4) Landing Gear Selector Valve
- (5) Landing Gear Control Lever Module, M1952
- (6) Wiring Problem
- (7) PSEU, M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC

EFFECTIVITY
SIA ALL

32-30 TASK 815

D633A103-SIA

Page 247
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

(Continued)

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) SDS SUBJECT 32-31-00
- (2) SDS SUBJECT 32-34-00
- (3) SDS SUBJECT 32-61-00
- (4) SSM 32-30-00
- (5) SSM 32-35-11
- (6) SSM 32-61-11
- (7) SSM 32-61-12
- (8) WDM 32-35-11
- (9) WDM 32-64-11
- (10) WDM 32-64-12

E. Initial Evaluation

- (1) Do a visual check of these components:
 - (a) Manual Extension Access Door
 - (b) Landing Gear Selector Valve
 - (c) Landing Gear Selector Valve Linkage



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) Electrically ground the airplane. This is the task: Static Grounding, AMM TASK 20-40-11-910-801.
- (4) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (5) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

EFFECTIVITY
SIA ALL

32-30 TASK 815

D633A103-SIA

Page 248
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

- (6) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

- (7) Make sure that the Landing Gear Control Lever is in the DN position.
- (8) Make sure the Manual Extension Access Door is fully closed.
- (a) Open the Manual Extension Access Door and make sure that the door recess and the area around the Manual Extension Access Door Switch are free of debris.
- (b) If necessary, clean the door recess and the area around the Manual Extension Access Door Switch with a dry brush and alcohol.
- NOTE:** The location of the Manual Extension System Access Door can collect dirt and residue found in the cockpit.
- (c) Do the applicable Main Gear Actuator Assembly Bleeding step from this task: Installation of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-400-801.
- (9) Remove the Downlock Pins from the Nose and Main Landing Gear. This is the task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (10) For Hydraulic System A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (11) Move the two Thrust Levers to the full forward position.



MAKE SURE THAT THE AREA AROUND THE DOORS FOR THE NOSE AND MAIN LANDING GEAR IS CLEAR OF PERSONS AND EQUIPMENT. THE DOORS OPEN AND CLOSE QUICKLY AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (12) Put the Gear Control Lever to the UP position to retract the Landing Gear.
- (a) If the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green and Red Lights are not ON, then the system operates correctly. Do these steps to complete the task.
- 1) Put the Gear Control Lever to the DN position.
 - 2) Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) Remove Hydraulic Pressure from System A. This is the task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - 4) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.
- (b) If the Landing Gear does not retract and/or the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights stay ON, and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Red Lights also come ON, and stay ON, then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-30 TASK 815

D633A103-SIA

Page 249
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Fault Isolation Procedure

- (1) Put the Landing Gear Control Lever to the DN position.



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) Do a visual inspection of the Manual Extension Limit Switch.
- (a) If the switch is bent, replace it. These are the tasks:
- Removal of the Manual Extension System Access Door Switch, AMM TASK 32-34-11-820-801
 - Installation of the Manual Extension System Access Door Switch, AMM TASK 32-34-11-820-802
- 1) Do the Repair Confirmation at the end of this task.
- (b) If the switch is not bent, then continue.
- (4) Make sure that the Manual Extension Access Door Limit Switch, works correctly, do one of the following wiring checks:
- NOTE: It is acceptable to do the wiring check at connector, D11734 or connector, D46026P.
- (a) Do a check of the wiring at the Alternate Extension Solenoid Valve connector, D46026P (WDM 32-35-11):
- 1) At the main wheel well, disconnect the connector, D11734.
- 2) Do a check for 28V DC at pin 2 of the connector, D11734.
- (b) Do a check of the wiring at the connector, D46026P (WDM 32-35-11):
- 1) At the main wheel well, disconnect the connector, D46026P.
- 2) Do a check for 28 VDC at pin 8 of connector, D46026P.
- (c) If you find 28V DC, then replace the Manual Extension Access Door Limit Switch. These are the tasks:
- Removal of the Manual Extension System Access Door Switch, AMM TASK 32-34-11-820-801
 - Installation of the Manual Extension System Access Door Switch, AMM TASK 32-34-11-820-802.
- 1) Do the repair confirmation at the end of this task.
- (d) If you do not find 28V DC, then continue.
- (e) Make sure the Manual Extension Access Door Limit Switch is correctly adjusted. Do this task: Manual Extension System Access Door Switch Adjustment, AMM TASK 32-34-00-820-802.
- (f) Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
- (g) Do the Repair Confirmation at the end of this task.
- (5) Do a check of the wiring and Landing Gear Control Lever Module as follows:

EFFECTIVITY
SIA ALL

32-30 TASK 815

D633A103-SIA

Page 250
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) Disconnect connector, D10982 from the PSEU (WDM 32-64-11).
NOTE: The connector, D10982 is located on the PSEU, M2061, in the Forward Electrical Equipment Bay through access door 112A.
- (b) Put the Gear Control Lever to the UP position.
- (c) Do a check for Ground at pin 6 of connector D10982.
- 1) If you find Ground, do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801 to troubleshoot the PSEU.
 - 2) If you do not find Ground, continue.
- (d) Remove the Landing Gear Control Lever Module. This is the task: Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801.
- (e) Do a continuity check between pins 1 and 3 on the Control Lever Module Receptacle.
- 1) If you find Resistance more than 10 Ohms, then there is evidence of switch failure. Replace the Control Lever Module, M1952. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the Resistance is less than 10 Ohms, then continue.
- (f) Examine the wiring between the Control Lever Module and PSEU as follows (WDM 32-64-11):

**CONTROL
LEVER
MODULE**

D11990

pin 3

PSEU

D10982

pin 6

**CONTROL
LEVER
MODULE**

D11990

pin 1 GND

- 1) If you find a problem, repair the wiring as necessary.
 - a) Re-connect the connector, D11990.
 - b) Re-install the Control Lever Module. This is the task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem in the wiring, continue.
- (g) Re-connect the connector, D11990.
- (h) Re-install the Control Lever Module. This is the task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
- (6) Do a check of the Landing Gear Control Cable adjustment. This is the task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
- (a) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-30 TASK 815

D633A103-SIA

Page 251
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (7) Replace the Landing Gear Selector Valve. These are the tasks:
- Landing Gear Selector Valve Removal, AMM TASK 32-31-51-020-801
 - Landing Gear Selector Valve Installation, AMM TASK 32-31-51-400-801
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Electrically ground the airplane. This is the task: Static Grounding, AMM TASK 20-40-11-910-801.
- (3) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
C	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

- (5) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

- (6) Make sure that the Landing Gear Control Lever is in the DN position.
- (7) Make sure the Manual Extension Access Door is fully closed.
- (8) Remove the Downlock Pins from the Nose and Main Landing Gear. This is the task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (9) For Hydraulic System A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (10) Move the two Thrust Levers to the full forward position.



MAKE SURE THAT THE AREA AROUND THE DOORS FOR THE NOSE AND MAIN LANDING GEAR IS CLEAR OF PERSONS AND EQUIPMENT. THE DOORS OPEN AND CLOSE QUICKLY AND CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (11) Put the Gear Control Lever to the UP position to retract the Landing Gear.

EFFECTIVITY
SIA ALL

32-30 TASK 815

D633A103-SIA

Page 252
Jun 15/2023



737-600/700/800/900
FAULT ISOLATION MANUAL

- (a) If the Landing Gear retracts and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights and Red Lights are not ON, you corrected the problem. Do these steps to complete the task.
 - 1) Put the Gear Control Lever to the DN position.
 - 2) Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) Remove Hydraulic Pressure from System A. This is the task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - 4) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.
- (b) If the Landing Gear does not retract and/or the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights are ON, and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Red Lights also come ON, and stay ON, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

816. Landing Gear Commanded DN and NOSE GEAR, LEFT GEAR and RIGHT GEAR Green and Red Lights are ON - Fault Isolation

A. Description

- (1) This task is for this DISAGREE Condition of the Landing Gear System:
 - (a) The Landing Gear is commanded DN (to extend) and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green and Red Lights come ON.
- (2) This DISAGREE Condition could occur if:
 - (a) The PSEU, M2061 does not receive the Gear Lever DN input from the Control Lever Module, M1952.
 - (b) The Landing Gear Control Lever is not fully engaged and causes lack of contact with the Disagree Switch S1.
 - (c) The Internal Switch is stuck in the UP position.
- (3) The Landing Gear Control Lever operates four switches in the Landing Gear Lever Module Assembly.

NOTE: Two switches are at the UP position and two switches are at the DN position. There are no switches at the OFF position.

 - (a) At the UP position, Switches S3 and S4 provide input to the Anti-Skid System.
 - (b) At the DN position, Switch S1 provides input to the Landing Gear Lever/Landing Gear Position Disagree Indicating System.
 - (c) At the DN position, Switch S2 provides input to the Passenger Sign Control System.
- (4) Refer to SDS SUBJECT 32-31-00 and SDS SUBJECT 32-34-00 for a detailed description of the Landing Gear Extension and Retraction System.
- (5) Refer to SDS SUBJECT 32-61-00 for a detailed description of the Landing Gear Indicating and Warning System.

B. Possible Causes

- (1) Landing Gear Lever is not fully engaged in the commanded position
- (2) Aft Control Quadrant hits its stop position before the Landing Gear Lever is fully engaged in the Landing Gear Lever Module Detent Assembly
- (3) Defective Landing Gear Control Lever Module, M1952

EFFECTIVITY
SIA ALL

32-30 TASKS 815-816

D633A103-SIA

Page 253
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (4) Wiring Problem
- (5) Landing Gear Control Cable out of adjustment
- (6) PSEU, M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) SDS SUBJECT 32-31-00
- (2) SDS SUBJECT 32-34-00
- (3) SDS SUBJECT 32-61-00
- (4) SSM 32-30-00
- (5) SSM 32-61-11
- (6) WDM 32-64-11
- (7) WDM 32-64-12

E. Initial Evaluation



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Electrically ground the airplane. This is the task: Static Grounding, AMM TASK 20-40-11-910-801.
- (3) Supply External Power. This is the task: Supply External Power, AMM TASK 24-22-00-860-813.
- (4) Put the Airplane in the AIR Mode. This is the task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.

NOTE: You must use Proximity Switch De-actuators to put the airplane in the AIR Mode or put the airplane on jacks. You cannot use the PSEU BITE for this test.

- (5) Put an actuator on the Ground Spoiler Interlock Valve Close Sensor, S1050.

NOTE: The actuator is part of this Test Set: Set A27092-61. For information on the Ground Spoiler Interlock Valve Close Sensor, refer to this task: Ground Spoiler Interlock Valve Functional Test - Rigging Tool Method, AMM TASK 27-62-61-400-808.

- (6) Put the Landing Gear Control Lever in the DN position.
- (7) Install the force gage equipment, SPL-6190 on the Control Lever.
- (8) Pull the Control Lever out of the DN position detent with the force gage equipment, SPL-6190.
 - (a) Make sure that the force necessary to pull the Control Lever out of the detent is not more than 12 lbf (53 N).

EFFECTIVITY
SIA ALL

32-30 TASK 816

D633A103-SIA

Page 254
Jun 15/2023



737-600/700/800/900
FAULT ISOLATION MANUAL

- (9) Remove the force gage equipment, SPL-6190.
- (10) Pull the Control Lever completely out and release into the DN detent.
 - (a) Make sure that the Control Lever goes freely into the detent and to the bottom of the detent without a push, binding, or stickiness.
- (11) If the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights are ON, and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Red Lights are not ON, then the system operates correctly. This was an intermittent fault and no further testing is necessary.
- (12) If the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights are ON, and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Red Lights also come ON, and stay ON or if there is binding or stickiness between the Outer Lever Shaft and Outer Lever Sleeve, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Use alcohol, B50073 spray or liquid to clean the Landing Gear Control Lever between the Outer Lever Shaft and the Outer Lever Sleeve.
- (2) Put the Landing Gear Control Lever in the DN position.
- (3) Install the force gage equipment, SPL-6190 on the Control Lever.
- (4) Pull the Control Lever out of the DN position detent with the force gage equipment, SPL-6190.
 - (a) Make sure that the force necessary to pull the Control Lever out of the detent is not more than 12 lbf (53 N).
- (5) Remove the force gage equipment, SPL-6190.
- (6) Pull the Control Lever completely out and release into the DN detent.

NOTE: Make sure that the Control Lever goes freely into the detent and to the bottom of the detent without a push, binding, or stickiness.

- (a) If the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights are ON, and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Red Lights are not ON, then you corrected the problem.
 - (b) If the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights are ON, and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Red Lights are still ON, then continue.
- (7) Do a check of the wiring and Landing Gear Control Lever Module as follows:
 - (a) Disconnect connector D10982 from the PSEU (WDM 32-64-11).

NOTE: The connector D10982 is located on the PSEU, M2061, in the Forward Electrical Equipment Bay through access door 112A.
 - (b) Put the Gear Control Lever to the DN position.
 - (c) Do a check for Ground at pin 1 of connector D10982 (WDM 32-64-11).
 - 1) If you find Ground, do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801 to troubleshoot the PSEU.
 - 2) If you do not find Ground, continue.
 - (d) Remove the Landing Gear Control Lever Module. This is the task: Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801.
 - (e) Do a continuity check between pins 1 and 2 on the Control Lever Module Receptacle (WDM 32-64-11).
 - 1) If you find Resistance more than 10 Ohms, then there is evidence of switch failure. Replace the Control Lever Module, M1952. These are the tasks:

EFFECTIVITY
SIA ALL

32-30 TASK 816

D633A103-SIA

Page 255
Jun 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
- Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - a) Do the Repair Confirmation at the end of this task.
- 2) If the Resistance is less than 10 Ohms, then continue.
- (f) Examine the wiring between the Control Lever Module and PSEU as follows (WDM 32-64-11):

**CONTROL
LEVER
MODULE
D11990**

**PSEU
D10982**

pin 2 pin 1

**CONTROL
LEVER
MODULE
D11990**

pin 1 GND

- 1) If you find a problem, repair the wiring as necessary.
 - a) Re-connect the connector D11990.
 - b) Re-install the Control Lever Module. This is the task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
 - c) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem in the wiring, continue.
- (g) Re-connect the connector D11990.
- (h) Re-install the Control Lever Module. This is the task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
- (8) Do a check of the Landing Gear Control Cable adjustment. This is the task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - (a) Do the Repair Confirmation at the end of this task.
- (9) Do a check of the Aft Control Quadrant System clearance. This is the task: Landing Gear Selector Valve Quadrant Clearance Inspection, AMM TASK 32-31-61-200-802.
 - (a) Do the Repair Confirmation at the end of this task.
- (10) Examine the Aft Control Quadrant components for wear or damage. This is the task: Landing Gear Selector Valve Quadrant Inspection, AMM TASK 32-31-61-200-801.
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

EFFECTIVITY
SIA ALL

32-30 TASK 816

D633A103-SIA

Page 256
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (2) Make sure that the Landing Gear Control Lever is in the DN position.
 - (a) If the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights are ON, and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Red Lights are not ON, then you have corrected the problem.
 - (b) If the NOSE GEAR, LEFT GEAR and RIGHT GEAR Green Lights are ON, and the NOSE GEAR, LEFT GEAR and RIGHT GEAR Red Lights are also ON, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

817. Nose Gear Alternate Extension Does Not Unlock Nose Gear When Pulled

A. Description

- (1) The manual extension system for the nose landing gear permits you to lower the nose landing gear from the up and locked position when hydraulic system A pressure fails.
- (2) The manual extension system for the nose landing gear has these components:
 - (a) Manual extension control mechanism.
 - (b) Manual extension release mechanism
 - (c) System cable
- (3) The manual extension system for the nose landing gear operates independently of the normal extension and retraction system.
- (4) To operate the system pull on the nose gear manual extension handle in the manual extension control mechanism. This pulls on the NLG manual extension system cable and turns the release mechanism.
- (5) When the release mechanism turns it moves the nose gear lock link to the unlock position. The nose landing gear extends by airloads and its own weight.
- (6)

B. Possible Causes

- (1) Nose gear manual extension system out of adjustment
- (2) Damage to, or jammed, manual extension cable, pulley, drums, or release mechanism
- (3) Return spring broken
- (4) Stiff, seized or damaged bearing in release mechanism, cable pulley or cable drum

C. Related Data

- (1) (SSM 32-30-00)

D. Fault Isolation Procedure

- (1) Do the nose gear manual extension system test. Do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-35-00-730-801.
 - (a) If the nose gear did not freefall to the down and locked position, then do these steps:
 - 1) Put the control lever for the landing gear in the OFF position.
 - 2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - 3) Put the control lever to the DN position to hydraulically extend the nose gear.
 - 4) If the nose gear did not extend to the down and locked position, then do these steps:

EFFECTIVITY
SIA ALL

32-30 TASKS 816-817

D633A103-SIA

Page 257
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- a) Check for broken return springs in release mechanism.
 - b) Check for stiff, seized or corroded bearings in release mechanism.
 - c) Pull each cable to determine if more than cable drum moves at the same time.
 - d) Make sure the bolt through drum assy is not too tight.
 - e) Check cables per AMM PAGEBLOCK 20-20-31/601.
 - <1> Make sure cables are not kinked or damaged.
 - <2> Ensure cables are in pulleys.
 - <3> Check for stiff, seized or corroded pulleys.
 - <4> Check cable runs for frayed or loose wires.
 - f) Remove the obstruction, if it is necessary.
 - g) If it is damaged, replace the manual extension control mechanism, these are the tasks:
 - Main Gear Manual Extension Control Mechanism Removal, AMM TASK 32-34-11-000-801
 - Main Gear Manual Extension Control Mechanism Installation, AMM TASK 32-34-11-400-801
 - h) If it is damaged, replace the nose gear manual extension release mechanism, these are the tasks:
 - Nose Gear Manual Extension Release Mechanism Removal, AMM TASK 32-35-11-000-801
 - Nose Gear Manual Extension Release Mechanism Installation, AMM TASK 32-35-11-400-801
 - i) If they are damaged, replace the nose gear manual extension system cables, these are the tasks:
 - Nose Gear Manual Extension System Cables Removal, AMM TASK 32-35-21-000-801
 - Nose Gear Manual Extension System Cables Installation, AMM TASK 32-35-21-400-801
 - j) Do the adjustment of the nose gear manual extension, do this task: Nose Landing Gear Manual Extension System Adjustment, AMM TASK 32-35-00-820-801 and the system test of the nose gear manual extension, do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-35-00-730-801 to complete the task.
- 5) If the nose gear did extend to the down and locked position, then do the adjustment of the nose gear manual extension, do this task: Nose Landing Gear Manual Extension System Adjustment, AMM TASK 32-35-00-820-801 and the system test of the nose gear manual extension, do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-35-00-730-801 to complete the task.
- (b) If the nose gear did freefall to the down and locked position, but the force required to release the nose gear was too high, then continue.
- (2) Do these steps to look for damaged or jammed components in the manual extension system for the nose gear:
- (a) Do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801

EFFECTIVITY
SIA ALL

32-30 TASK 817

D633A103-SIA

Page 258
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) Cycle the system several times, then do the nose gear manual extension system test again. To do the test, do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-35-00-730-801.
- (c) If the force required to release the nose gear was still too high, then do these steps to complete the task:
- 1) Check for broken return springs in release mechanism.
 - 2) Check for stiff, seized or corroded bearings in release mechanism
 - 3) Pull each cable to determine if more than cable drum moves at the same time
 - 4) Make sure the bolt through drum assy is not too tight.
 - 5) Check cables per AMM PAGEBLOCK 20-20-31/601.
 - a) Make sure cables are not kinked or damaged.
 - b) Ensure cables are in pulleys.
 - c) Check for stiff, seized or corroded pulleys.
 - d) Check cable runs for frayed or loose wires.
 - 6) Remove any obstruction, if it is necessary.
 - 7) If it is damaged, then replace the manual extension control mechanism, these are the tasks:
 - Main Gear Manual Extension Control Mechanism Removal, AMM TASK 32-34-11-000-801
 - Main Gear Manual Extension Control Mechanism Installation, AMM TASK 32-34-11-400-801
 - 8) If it is damaged, then replace the nose gear manual extension release mechanism, these are the tasks:
 - Nose Gear Manual Extension Release Mechanism Removal, AMM TASK 32-35-11-000-801
 - Nose Gear Manual Extension Release Mechanism Installation, AMM TASK 32-35-11-400-801
 - 9) If they are damaged, then replace the nose gear manual extension system cables, these are the tasks:
 - Nose Gear Manual Extension System Cables Removal, AMM TASK 32-35-21-000-801
 - Nose Gear Manual Extension System Cables Installation, AMM TASK 32-35-21-400-801
 - 10) If it is damaged, then replace the nose gear manual extension release mechanism spring, these are the tasks:
 - Nose Gear Manual Extension Spring Removal, AMM TASK 32-35-20-000-801
 - Nose Gear Manual Extension Spring Installation, AMM TASK 32-35-20-400-801
 - 11) Do the adjustment of the nose gear manual extension system. Do this task: Nose Landing Gear Manual Extension System Adjustment, AMM TASK 32-35-00-820-801.
 - 12) Do the system test of the nose gear manual extension system. Do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-35-00-730-801.

EFFECTIVITY
SIA ALL

32-30 TASK 817

D633A103-SIA

Page 259
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 13) If the system test for manual extension of the nose gear was satisfactory, then you corrected the fault. Do these steps to complete the task:
- a) Make sure the downlock pin is installed on the nose landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - b) Make sure the control lever for the landing gear is in the DN position.
 - c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - d) Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

32-30 TASK 817

Page 260
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

801. Landing Gear Commanded Up, LEFT or RIGHT GEAR Green Light and LEFT or RIGHT GEAR Red Light On and LEFT or RIGHT GEAR green light is off with landing gear lever at UP, LEFT or RIGHT GEAR red light stays on - Fault Isolation

A. Description

- (1) This task is for these observed faults:
 - (a) Main Landing Gear: LEFT or RIGHT GEAR green light does not go off with landing gear lever at UP, LEFT or RIGHT GEAR red light stays on.
 - (b) Main Landing Gear: LEFT or RIGHT GEAR green light is off with landing gear lever at UP, LEFT or RIGHT GEAR red light stays on.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these left and right main gear conditions:
 - (a) Left and right main gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and left and right main gear position disagree
 - (c) Throttle position and gear position disagree.
- (3) The red LEFT or RIGHT GEAR light comes on for these conditions:
 - (a) Disagree: lever down, left or right main gear not down and locked
 - (b) Disagree: lever not down, left or right main gear not up and locked
 - (c) Disagree: left or right main gear not down, throttle retarded and altitude below 800 feet

B. Possible Causes

- (1) Groundlock pin installed
- (2) Damage to lock links, side strut, retract actuator or lock actuator
- (3) Proximity switch electronics unit (PSEU), E11
- (4) Position sensors damaged or not adjusted correctly
- (5) Hydraulic causes:
 - (a) Frangible fitting broken
 - (b) External hydraulic leak downstream of retract fuse
 - (c) Main gear downlock actuator (high internal leakage, plugged, or bent)
 - (d) Main gear retract actuator (high internal leakage or plugged)
 - (e) Main gear retract actuator (external leakage from cracks in the cylinder wall)
 - (f) Main gear transfer cylinder (high internal leakage)
 - (g) Hydraulic fuse (stuck closed, closed prematurely, or an internal leak in the system)
 - (h) Flow regulator plugged
 - (i) Hydraulic line blocked (from loose contamination in the system such as a piece of seal)
- (6) High friction in the lock mechanism
- (7) High friction in the side strut (the affected main gear does not fully unlock)
- (8) Auto-throttle switch packs.

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

EFFECTIVITY
SIA ALL

32-32 TASK 801

D633A103-SIA

Page 201
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

(4) (SDS SUBJECT 32-61-00)

D. Initial Evaluation

- (1) Make sure the control lever for the landing gear is in the DN position.
- (2) Do a check to make sure downlock pins are installed. If they were, then remove them and you corrected the fault. If not, then continue.



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (3) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (4) Examine these components on the applicable main gear and in the main wheel well for damage, foreign objects, or hydraulic leaks:
 - (a) Wiring and sensors
 - (b) Sensor brackets
 - (c) Lock links
 - (d) Lock springs
 - (e) Actuator piston rods, fittings, and head ends
 - (f) Actuator beam and attachments
 - (g) Hydraulic tubing, fittings and hoses
 - (h) Frangible fitting
 - (i) Flow regulator
 - (j) Transfer cylinder.



WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE LANDING GEAR AREA. THE LANDING GEAR WILL RETRACT WHEN THE LANDING GEAR CONTROL LEVER IS PUT IN THE UP POSITION. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

- (5) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (6) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (7) Place the thrust levers in the fully forward position.
- (8) Check hydraulic tubing, hoses, actuators, flow regulator, and transfer cylinder for hydraulic leaks.

EFFECTIVITY
SIA ALL

32-32 TASK 801

D633A103-SIA

Page 202
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (9) Move the control lever for the landing gear to the UP position.
NOTE: Do not use the lever lock override trigger.
- (10) Check hydraulic tubing, hoses, actuators, flow regulator, and transfer cylinder for hydraulic leaks.
- (11) Move the control lever for the landing gear to the DN position.
- (12) Remove the downlock pins for the affected main landing gear. To remove the downlock pins, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (13) Move the control lever for the landing gear to the UP position.
 - (a) If the red LEFT or RIGHT GEAR light and the green LEFT or RIGHT GEAR lights stay on, and you observe that the left, right gear is down and locked then do the Fault Isolation Procedure - Left or (Right) Gear Retraction.
 - (b) If the red LEFT or RIGHT GEAR light stays on, the green LEFT or RIGHT GEAR light is not on, and you observe that the left, right gear is in the up and locked position and stays there when the gear lever is put to OFF, then there is a sensor or PSEU problem. Do these steps to complete this task:
 - 1) Move the control lever for the landing gear to the DN position.
 - 2) Install the downlock pins for the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.
 - (c) If the red LEFT or RIGHT GEAR light stays on, and the green LEFT or RIGHT GEAR light is not on, and you observe that the left, right gear stalls before it gets to the up and locked position, then there is high internal leakage in the retraction system. Do the Check for Internal Leakage.
- (14) Make sure the control lever for the landing gear is in the DN position.
- (15) Install the downlock pins for the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

E. Fault Isolation Procedure - Main Gear Retraction

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If a maintenance message shows for a PSEU internal failure or LEFT (RIGHT) RED LT FLT, then go to the FIM task.
 - (b) If a maintenance message does not show for a PSEU internal failure or LEFT (RIGHT) RED LT FLT, then continue.
- (2) Replace the main gear retract pressure fuse. These are the tasks:

EFFECTIVITY
SIA ALL

32-32 TASK 801

D633A103-SIA

Page 203
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- Removal of the Retract Pressure Fuses for the Main Gear, AMM TASK 32-32-21-000-801.
- Installation of the Retract Pressure Fuses for the Main Gear, AMM TASK 32-32-21-400-801.
- (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the flow regulator for the affected main gear. These are the tasks:
 - Removal of the Hydraulic Flow Regulator for the Main Gear, AMM TASK 32-32-72-000-801.
 - Installation of the Hydraulic Flow Regulator for the Main Gear, AMM TASK 32-32-72-400-801.
- (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the downlock actuator including the restrictor check valve. These are the tasks:
 - Main Gear Downlock Actuator Removal, AMM TASK 32-32-51-000-801.
 - Main Gear Downlock Actuator Installation, AMM TASK 32-32-51-400-801.
- (a) Do the Repair Confirmation at the end of this task.
- (5) Replace the retract actuator. These are the tasks:
 - Removal of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-000-801.
 - Installation of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-400-801.
- (a) Do the Repair Confirmation at the end of this task.
- (6) Replace the Main Gear Transfer Cylinder. These are the tasks:
 - Main Gear Transfer Cylinder Removal, AMM TASK 32-32-71-000-801.
 - Main Gear Transfer Cylinder Installation, AMM TASK 32-32-71-400-801.
- (a) Do the Repair Confirmation at the end of this task.
- (7) Replace the Main Gear Downlock Strut for the affected main gear. These are the tasks:
 - Main Landing Gear Downlock Strut Removal, AMM TASK 32-11-89-000-801.
 - Main Landing Gear Downlock Strut Installation, AMM TASK 32-11-89-420-801.
- (a) Do the Repair Confirmation at the end of this task.
- (8) Replace the Main Gear Side Strut for the affected main gear. These are the tasks:
 - Main Landing Gear Side Strut Removal, AMM TASK 32-11-61-000-803.
 - Main Landing Gear Side Strut Installation, AMM TASK 32-11-61-400-803.
- (a) Do the Repair Confirmation at the end of this task.
- (9) Replace the applicable Autothrottle Switchpack. These are the tasks:
 - Autothrottle Switchpack Assembly - Removal, AMM TASK 76-11-07-020-802-F00.
 - Autothrottle Switchpack Assembly - Installation, AMM TASK 76-11-07-400-802-F00.
- (a) Do the Repair Confirmation at the end of this task.

F. Fault Isolation Procedure - Internal Leakage Check

- (1) Do this check for internal leakage:
 - (a) Make sure the control lever for the landing gear is in the DN position.

EFFECTIVITY
SIA ALL

32-32 TASK 801

D633A103-SIA

Page 204
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (d) Listen for noise as the hydraulic fluid flows through the components.



WARNING

DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (e) Feel for heat in the actuators, tubing, valves, flow limiter and transfer cylinder caused by internal hydraulic fluid leakage.



WARNING

MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Move the control lever for the landing gear to the UP position.
- (g) Listen for noise as the hydraulic fluid flows through the components.



WARNING

DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (h) Feel for heat in the actuators, tubing, valves, flow limiter and transfer cylinder caused by internal hydraulic fluid leakage.
- (i) Move the control lever for the landing gear to the DN position.
- (j) If noise is heard or heat is felt , then remove the hydraulic system power. Do this task:
 - Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805
- (k) Replace the leaking part.
- (l) Do the Repair Confirmation at the end of this task.
- (m) For hydraulic system A and B, including reservoirs, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (n) Disconnect the gear DOWN line from the downlock actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.

EFFECTIVITY
SIA ALL

32-32 TASK 801

D633A103-SIA

Page 205
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (o) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (p) Use the override trigger to move the control lever for the landing gear from the DN position to the OFF position.
- (q) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (r) Put the control lever for the landing gear to the UP position.
- (s) Measure the quantity of fluid that leaks out of the gear DOWN port.
NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (t) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, replace the downlock actuator assembly. Do this task:
 - Main Gear Downlock Actuator Removal, AMM TASK 32-32-51-000-801
 - Main Gear Downlock Actuator Installation, AMM TASK 32-32-51-400-801
- (u) Do the Repair Confirmation at the end of this task.
- (v) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (w) Put the control lever for the landing gear to the DN position.
- (x) Connect the gear DOWN line to the downlock actuator.
- (y) Disconnect the gear DOWN line from the transfer cylinder.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (z) Put the control lever for the landing gear to the OFF position.



KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (aa) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

EFFECTIVITY
SIA ALL

32-32 TASK 801

D633A103-SIA

Page 206
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (ab) Move the control lever for the landing gear to the UP position.
- (ac) Measure the quantity of fluid that leaks out of the gear DOWN port.
NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (ad) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, replace the transfer cylinder. Do this task:
 - Main Gear Transfer Cylinder Removal, AMM TASK 32-32-71-000-801
 - Main Gear Transfer Cylinder Installation, AMM TASK 32-32-71-400-801
- (ae) Do the Repair Confirmation at the end of this task.
- (af) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (ag) Move the control lever for the landing gear to the DN position.
- (ah) Connect the gear DOWN line to the transfer cylinder.
- (ai) Return to Main Gear Retraction Fault Isolation procedure.
- (aj) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) After the replacement of one or more components, do the extension/retraction test for the main landing gear. This is the task: Main Landing Gear Test - Component Replacement, AMM TASK 32-32-00-710-802
 - (a) If the MAIN GEAR green light goes off and the MAIN GEAR red light is off, then you corrected the fault. Do these steps to complete the task.
 - 1) Make sure the control lever for the landing gear is in the OFF position.
 - 2) Make sure the thrust levers are in the fully aft position.



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- 3) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- 4) Move the control lever for the landing gear to the DN position.
- 5) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805
- 6) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

EFFECTIVITY
SIA ALL

32-32 TASK 801

D633A103-SIA

Page 207
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) If the MAIN GEAR Green lights are off and the MAIN GEAR Red Lights come ON, and stay ON, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

802. LEFT GEAR, RIGHT GEAR Red Light On (In Air Only) - Fault Isolation

A. Description

- (1) This task is for these observed faults:
 - (a) Main Landing Gear: LEFT GEAR green light does not come on with landing gear lever at DN. LEFT GEAR red light on, indications normal after alternate gear extension.
 - (b) Main Landing Gear: RIGHT GEAR green light does not come on with landing gear lever at DN. RIGHT GEAR red light on, indications normal after alternate gear extension.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these left and right main gear conditions:
 - (a) Left, right main gear down and locked
 - (b) Disagree
 - (c) Not down warning.
- (3) The red LEFT, RIGHT GEAR light comes on for these conditions:
 - (a) Disagree: lever down, left, right gear not down and locked
 - (b) Disagree: lever not down, left, right gear not up and locked
 - (c) Gear not down warning.
- (4) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Proximity switch electronics unit (PSEU), E11
- (2) Main gear actuator
- (3) Main gear uplock or downlock actuator
- (4) Main gear transfer cylinder
- (5) Wiring or sensor problem
- (6) Uplock Mechanism

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

EFFECTIVITY
SIA ALL

32-32 TASKS 801-802

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 208
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

E. Initial Evaluation

- (1) Examine these components of the applicable main gear and main wheel well for damage and foreign objects:
 - (a) Uplock and Downlock Actuators
 - (b) Sensors
 - (c) Wiring
- (2) Look for any obvious damage to the applicable sensor, target, adjacent structure.
 - (a) If you find any damage, then do this task: Main Landing Gear Air/Ground Sensor Fault - Fault Isolation, 32-09 TASK 803.
 - (b) If there is no obvious damage then continue.
- (3) Make sure the control lever for the landing gear is in the DN position.



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (4) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.



REMOVE PERSONS AND EQUIPMENT FROM THE MAIN GEAR PATH. WHEN THE NOSE GEAR RETRACTS, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (5) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (6) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (7) Remove the downlock pin for the main landing gear you will troubleshoot. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (8) Place the thrust levers in the fully forward position.



MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (9) Move the control lever for the landing gear to the UP position to retract the main gear.
- (10) Move the control lever for the landing gear to the DN position.
 - (a) If the red LEFT, RIGHT GEAR light is on, then do the Fault Isolation Procedure - Main Gear Extension.
 - (b) If the red LEFT, RIGHT GEAR light goes out, and the green LEFT, RIGHT GEAR light is on, then there was an intermittent fault. Do these steps to complete this task:

EFFECTIVITY
SIA ALL

32-32 TASK 802

D633A103-SIA

Page 209
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 1) Install the downlock pin for the main landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- 2) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

F. Fault Isolation Procedure - Main Gear Extension

- (1) If the LEFT, RIGHT GEAR red light was on during flight with the landing gear lever in the UP position, then do these steps:
 - (a) Do this task: Landing Gear Commanded Up, LEFT or RIGHT GEAR Green Light and LEFT or RIGHT GEAR Red Light On and LEFT or RIGHT GEAR green light is off with landing gear lever at UP, LEFT or RIGHT GEAR red light stays on - Fault Isolation, 32-32 TASK 801

If the left, right main gear operated correctly , then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
- (2) If the LEFT, RIGHT GEAR red light was on with the landing gear lever in the OFF position, then do these steps:
 - (a) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If any PSEU maintenance messages show, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - a) If the left, right main gear operated correctly , then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
- (3) If the left, right main gear did not unlock from the up and locked position and the LEFT, RIGHT GEAR red light stayed on, then do these steps:
 - (a) Replace the left, right main gear uplock actuator. These are the tasks:
 - Main Gear Uplock Actuator Removal, AMM TASK 32-32-41-000-801
 - Main Gear Uplock Actuator Installation, AMM TASK 32-32-41-400-801
 - (b) If the left, right main gear operated correctly when you did the installation test for the main gear uplock actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
 - (c) If the left, right main gear did not operate correctly when you did the installation test for the main gear uplock actuator, then do these steps:
 - 1) Replace the left, right main gear transfer cylinder. These are the tasks:
 - Main Gear Transfer Cylinder Removal, AMM TASK 32-32-71-000-801
 - Main Gear Transfer Cylinder Installation, AMM TASK 32-32-71-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If the left, right main gear operated correctly when you did the installation test for the main gear transfer cylinder, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
- (4) If the left, right main gear did not extend completely and the LEFT, RIGHT GEAR green light was not on, then do these steps:
 - (a) Replace the left, right main gear actuator. These are the tasks:
 - Removal of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-000-801
 - Installation of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-400-801

EFFECTIVITY
SIA ALL

32-32 TASK 802

D633A103-SIA

Page 210
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) If the left, right main gear operated correctly when you did the installation test for the main gear actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
- (c) If the left, right main gear extended but the downlock strut did not lock when you did the installation test for the main gear actuator, then replace the left, right main gear downlock actuator or retract actuator. These are the tasks:
 - Main Gear Downlock Actuator Removal, AMM TASK 32-32-51-000-801
 - Main Gear Downlock Actuator Installation, AMM TASK 32-32-51-400-801
- (d) If the left, right main gear operated correctly when you did the installation test for the main gear downlock actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

G. Repair Confirmation

- (1) Make sure the control lever for the landing gear is in the OFF position.
- (2) Make sure the thrust levers are in the fully aft position.
- (3) Install the downlock pin in the main landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (4) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (5) Move the control lever for the landing gear to the DN position.
- (6) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

———— **END OF TASK** ————

803. Both Main Landing Gear Slow to Retract or Extend - Fault Isolation

A. Description

- (1) The extension and retraction sequence is the same for the left and right main landing gear. The main landing gear extension and retraction system has these hydraulic components:
 - (a) Main gear actuator
 - (b) Downlock actuator
 - (c) Uplock actuator
 - (d) Transfer cylinder
- (2) The sequence for main gear retraction is as follows:
 - (a) The landing gear selector valve supplies up pressure when the control lever for the landing gear is moved to the UP position.
 - (b) Up pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the down side. This gives a time delay to let the downlock actuator unlock the downlock strut.
 - (c) Up pressure goes to the downlock actuator. The downlock actuator extends and unlocks the downlock strut.

EFFECTIVITY
SIA ALL

32-32 TASKS 802-803

D633A103-SIA

Page 211
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (d) When the piston in the transfer cylinder gets to the end of the up side, up pressure goes to the up side of the main gear actuator. The main gear actuator moves to retract the gear.
- (e) When the uplock roller on the main gear moves into the hook of the uplock mechanism, the uplock mechanism moves to the locked position.
- (3) The sequence for main gear extension is as follows:
 - (a) The landing gear selector valve supplies down pressure when the control lever for the landing gear is moved to the DN position.
 - (b) Down pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the up side. This momentarily applies a retract force to the main gear to decrease the forces in the uplock mechanism so the uplock actuator can operate it.
 - (c) Down pressure goes to the uplock actuator. The uplock actuator retracts and unlocks the uplock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, down pressure goes to the down side of the main gear actuator. The main gear actuator moves to extend the gear.
 - (e) Down pressure goes to retract the downlock actuator. The downlock actuator moves the downlock strut to the locked position as the main landing gear extends.
- (4) (SDS SUBJECT 32-32-00)

B. Possible Causes

- (1) Rigging of the landing gear selector valve
- (2) Landing gear selector valve
- (3) A restriction in the hydraulic lines from the selector valve
- (4) High internal leakage in hydraulic system

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

E. Initial Evaluation

- (1) Do the operational test for the main landing gear. Do this task: Main Landing Gear Operational Test, AMM TASK 32-32-00-710-801.
- (2) If both main landing gear extend and retract very slowly, then do the Fault Isolation Procedure below.

NOTE: Slow gear operation is normal when only using the electric motor driven pumps for hydraulic power if more than one landing gear are operated together.

EFFECTIVITY
SIA ALL

32-32 TASK 803

D633A103-SIA

Page 212
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (3) If the retraction and extension times for the main landing gear are acceptable, then there was an intermittent fault. Do these steps to complete this task:
 - (a) Make sure the downlock pins are installed on the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure the control lever for the landing gear is in the DN position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

F. Fault Isolation Procedure

- (1) Make sure the landing gear control system is adjusted correctly. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - (a) If the landing gear control system is not adjusted correctly, then do these steps:
 - 1) Do the adjustment of the landing gear control system, do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the landing gear control system is adjusted correctly, then continue.
- (2) Make sure there are no restrictions in the hydraulic lines from the landing gear selector valve.
 - (a) If there is a restriction in the hydraulic lines from the selector valve to the components for main landing gear extension/retraction, then do these steps:
 - 1) Flush or change the hydraulic lines.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If there is not a restriction in the hydraulic lines, then continue.
- (3) Replace the landing gear selector valve. These are the tasks:
 - Landing Gear Selector Valve Removal, AMM TASK 32-31-51-020-801
 - Landing Gear Selector Valve Installation, AMM TASK 32-31-51-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Do the internal leakage test: System A or System B Sub-System Internal Leakage Check, AMM TASK 29-00-00-790-803
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do the operational test for the main landing gear. Do this task: Main Landing Gear Operational Test, AMM TASK 32-32-00-710-801.

————— END OF TASK —————

804. Right (Left) Main Landing Gear Slow to Retract or Extend - Fault Isolation

A. Description

- (1) The extension and retraction sequence is the same for the left and right main landing gear. The main landing gear extension and retraction system has these hydraulic components:
 - (a) Main gear actuator
 - (b) Downlock actuator
 - (c) Uplock actuator

EFFECTIVITY
SIA ALL

32-32 TASKS 803-804

D633A103-SIA

Page 213
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (d) Transfer cylinder
- (e) Landing gear selector valve
- (2) The sequence for main gear retraction is as follows:
 - (a) The landing gear selector valve supplies up pressure when the control lever for the landing gear is moved to the UP position.
 - (b) Up pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the down side. This gives a time delay to let the downlock actuator unlock the downlock strut.
 - (c) Up pressure goes to the downlock actuator. The downlock actuator extends and unlocks the downlock strut.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, up pressure goes to the up side of the main gear actuator. The main gear actuator moves to retract the gear.
 - (e) When the uplock roller on the main gear moves into the hook of the uplock mechanism, the uplock mechanism moves to the locked position.
- (3) The sequence for main gear extension is as follows:
 - (a) The landing gear selector valve supplies down pressure when the control lever for the landing gear is moved to the DN position.
 - (b) Down pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the up side. This momentarily applies a retract force to the main gear to decrease the forces in the uplock mechanism so the uplock actuator can operate it.
 - (c) Down pressure goes to the uplock actuator. The uplock actuator retracts and unlocks the uplock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, down pressure goes to the down side of the main gear actuator. The main gear actuator moves to extend the gear.
 - (e) Down pressure goes to retract the downlock actuator. The downlock actuator moves the downlock strut to the locked position as the main landing gear extends.
- (4) (SDS SUBJECT 32-32-00)

B. Possible Causes

- (1) A restriction in one of these components:
 - (a) Main gear transfer cylinder
 - (b) Main gear downlock actuator
 - (c) Main gear actuator
- (2) High internal leakage
- (3) A restriction in the hydraulic lines from and to the landing gear selector valve
- (4) Main gear trunnion bearings
- (5) Side strut assembly on the main gear.

EFFECTIVITY
SIA ALL

32-32 TASK 804

D633A103-SIA

Page 214
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

E. Initial Evaluation

- (1) Do the operational test for the main landing gear. Do this task: Main Landing Gear Operational Test, AMM TASK 32-32-00-710-801.
- (2) If the right (left) main landing gear extends or retracts very slowly, then do the Fault Isolation Procedure below.

NOTE: Slow gear operation is normal when only using the electric motor driven pumps for hydraulic power if more than one landing gear are operated together.

- (3) If the extension/retraction times for the main landing gear are acceptable, then it was an intermittent fault. Do these steps to complete this task:
 - (a) Make sure the downlock pins are installed on the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure the control lever for the landing gear is in the DN position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

F. Fault Isolation Procedure

- (1) Make sure there are no restrictions in the transfer cylinder, the downlock actuator, the retract actuator, or the hydraulic lines from and to the landing gear selector valve, for the right (left) main landing gear.
 - (a) If there is a restriction in one of the above components then do these steps, as applicable:
 - 1) Replace the main gear transfer cylinder. These are the tasks:
 - Main Gear Transfer Cylinder Removal, AMM TASK 32-32-71-000-801
 - Main Gear Transfer Cylinder Installation, AMM TASK 32-32-71-400-801
 - 2) Replace the main gear downlock actuator. These are the tasks:
 - Main Gear Downlock Actuator Removal, AMM TASK 32-32-51-000-801
 - Main Gear Downlock Actuator Installation, AMM TASK 32-32-51-400-801
 - 3) Replace the main gear actuator. These are the tasks:
 - Removal of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-000-801

EFFECTIVITY
SIA ALL

32-32 TASK 804

D633A103-SIA

Page 215
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- Installation of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-400-801
- 4) Flush or replace the hydraulic lines from or to the landing gear selector valve.
- 5) Do the Repair Confirmation at the end of this task.
- (2) Do the internal leakage test. Refer to Landing Gear Commanded Up, LEFT or RIGHT GEAR Green Light and LEFT or RIGHT GEAR Red Light On and LEFT or RIGHT GEAR green light is off with landing gear lever at UP, LEFT or RIGHT GEAR red light stays on - Fault Isolation, 32-32 TASK 801
- (3) Inspect the pins and bushings at the hinge points for the side strut assembly on the right (left) main landing gear.
 - (a) If the pins or bushings are damaged, then do these steps:
 - 1) Replace the side strut assembly for the main landing gear: These are the tasks:
 - Main Landing Gear Side Strut Removal, AMM TASK 32-11-61-000-803
 - Main Landing Gear Side Strut Installation, AMM TASK 32-11-61-400-803
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the pins or bushings at the hinge points for the side strut are not damaged, then continue.
- (4) Inspect the trunnion bearings on the right (left) main landing gear.
 - (a) If the trunnion bearings are damaged, then do these steps:
 - 1) Replace the damaged bearings These are the tasks:
 - Main Landing Gear Forward Trunnion Bearing Assembly Removal, AMM TASK 32-11-83-000-801
 - Main Landing Gear Forward Trunnion Bearing Assembly Installation, AMM TASK 32-11-83-400-801
 - Landing Gear Support Beam Removal, AMM TASK 57-15-00-000-801
 - Landing Gear Support Beam Installation, AMM TASK 57-15-00-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the trunnion bearings are not damaged, then continue.

G. Repair Confirmation

- (1) Do the operational test for the main landing gear. Do this task: Main Landing Gear Operational Test, AMM TASK 32-32-00-710-801.
 - (a) If the operational test for the main landing gear is satisfactory, then you corrected the fault.

————— END OF TASK —————

805. LEFT (RIGHT) GEAR Green Light Not On With Gear Lever DN, LEFT (RIGHT) GEAR Red Light On, Alternate Gear Extension Attempted - Fault Isolation

A. Description

- (1) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these left and right main gear conditions:
 - (a) Left, right main landing gear down and locked
 - (b) Disagree

EFFECTIVITY
SIA ALL

32-32 TASKS 804-805

D633A103-SIA

Page 216
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (c) Not down warning.
- (2) The red LEFT, RIGHT GEAR light comes on for these conditions:
 - (a) Disagree: lever down, left, right main landing gear not down and locked
 - (b) Disagree: lever not down, left, right main landing gear not up and locked
 - (c) Gear not down warning.
- (3) The manual extension system for the main landing gear permits you to lower the left and right main landing gear from the up and locked position when hydraulic system A pressure fails.
- (4) The manual extension system for the main landing gear has these components:
 - (a) Manual extension control mechanism.
 - (b) Manual extension linkage
 - (c) System cable
- (5) The manual extension system for the main landing gear operates independently of the normal extension and retraction system.
- (6) The manual extension system for the landing gear has a limit switch in the manual extension access door. When the access door is opened for manual extension the switch sends a signal to the bypass valve that is in the landing gear selector valve. This moves the bypass valve to connect all hydraulic components in the landing gear system to the hydraulic system return.
 - (a) (SDS SUBJECT 32-34-00)
- (7) To operate either the left or right system pull on the left or right main gear manual extension handle in the manual extension control mechanism. This pulls on the left or right MLG manual extension system cable which goes to that main gear manual extension linkage.
- (8) The main gear manual extension linkage moves the uplock mechanism for that main landing gear to the unlocked position. The main landing gears extend by airloads and their own weight.
- (9) (SDS SUBJECT 32-34-00)
- (10) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Main gear alternate extension system out of adjustment
- (2) Damage to, or jammed, manual extension cable, pulley, drums, or manual extension linkage.

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-35-11)
- (3) (SSM 32-61-11, 12)
- (4) (WDM 32-35-11)
- (5) (WDM 32-64-11, 12)

D. Fault Isolation Procedure

- (1) Do the main gear manual extension system test for the main gear that is affected. Do this task: Main Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-34-00-730-801.
 - (a) If the affected main gear did not freefall to the down and locked position, then do these steps:
 - 1) Put the control lever for the landing gear in the OFF position.
 - 2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

EFFECTIVITY
SIA ALL

32-32 TASK 805

D633A103-SIA

Page 217
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 3) Put the control lever to the DN position to hydraulically extend the main gear.
 - 4) If the main gear did not extend to the down and locked position, then do these steps:
 - a) Visually examine the cables, pulleys, drums, and manual extension linkage to see if they are jammed or there is damage.
 - b) Remove the obstruction, if it is necessary.
 - c) If it is damaged, replace the manual extension control mechanism, these are the tasks:
 - Main Gear Manual Extension Control Mechanism Removal, AMM TASK 32-34-11-000-801
 - Main Gear Manual Extension Control Mechanism Installation, AMM TASK 32-34-11-400-801
 - d) If it is damaged, replace the manual extension mechanism for the main gear, these are the tasks:
 - Removal of the Manual Extension Mechanism for the Main Gear, AMM TASK 32-34-21-000-801
 - Installation of the Manual Extension Mechanism for the Main Gear, AMM TASK 32-34-21-400-801
 - e) If they are damaged, replace the main gear manual extension system cables, these are the tasks:
 - Main Gear Manual Extension System Cables Removal, AMM TASK 32-34-31-000-801
 - Main Gear Manual Extension System Cables Installation, AMM TASK 32-34-31-400-801
 - f) Do the adjustment of the main gear manual extension, do this task: Main Landing Gear Manual Extension System Adjustment and Test, AMM TASK 32-34-00-820-801 and the system test of the main gear manual extension, do this task: Main Landing Gear Manual Extension System Adjustment and Test, AMM TASK 32-34-00-820-801 to complete the task.
 - 5) If the main gear did extend to the down and locked position, then continue.
 - 6) Do the adjustment of the main gear manual extension, do this task: Main Landing Gear Manual Extension System Adjustment and Test, AMM TASK 32-34-00-820-801 and the system test of the main gear manual extension, do this task: Main Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-34-00-730-801 to complete the task.
- (b) If the affected main gear did freefall to the down and locked position, but the force required to release the main gear was too high, then continue.
- (2) Do these steps to look for damaged or jammed components in the manual extension system for the main gear:
- (a) Do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - (b) Cycle the system several times, then do the main gear manual extension system test again. Do this task: Main Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-34-00-730-801.
 - (c) If the force required to release the affected main gear was still too high, then do these steps to complete the task:

EFFECTIVITY
SIA ALL

32-32 TASK 805

D633A103-SIA

Page 218
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 1) Visually examine the cables, pulleys, drums, and manual extension mechanism to see if they are jammed or there is damage.
 - 2) Remove the obstruction, if it is necessary.
 - 3) If it is damaged, replace the manual extension control mechanism, these are the tasks:
 - Main Gear Manual Extension Control Mechanism Removal, AMM TASK 32-34-11-000-801
 - Main Gear Manual Extension Control Mechanism Installation, AMM TASK 32-34-11-400-801
 - 4) If it is damaged, replace the manual extension mechanism for the main gear, these are the tasks:
 - Removal of the Manual Extension Mechanism for the Main Gear, AMM TASK 32-34-21-000-801
 - Installation of the Manual Extension Mechanism for the Main Gear, AMM TASK 32-34-21-400-801
 - 5) If they are damaged, replace the main gear manual extension system cables, these are the tasks:
 - Main Gear Manual Extension System Cables Removal, AMM TASK 32-34-31-000-801
 - Main Gear Manual Extension System Cables Installation, AMM TASK 32-34-31-400-801
 - 6) Do the adjustment of the main gear manual extension, do this task: Main Landing Gear Manual Extension System Adjustment and Test, AMM TASK 32-34-00-820-801 and the system test of the main gear manual extension, do this task: Main Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-34-00-730-801 to complete the task.
- (3) If the system test for manual extension of the affected main gear was satisfactory, then there was an intermittent fault. Do these steps to complete the task:
- (a) Make sure the downlock pins are installed on the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure the control lever for the landing gear is in the DN position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

————— **END OF TASK** —————

EFFECTIVITY
SIA ALL

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

32-32 TASK 805

Page 219
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

801. Antiskid/Autobrake Control Unit (AACU) BITE Procedure

A. General

- (1) The Antiskid/Autobrake Control Unit (AACU) will keep a record of faults in memory. These faults can be seen on the AACU message display by doing a Memory Recall.
- (2) You do the AACU BITE tests at the front Panel of the AACU. The AACU is on the E1-3 Shelf in the Electronic Equipment (EE) Bay. These are the functions in the AACU Built-In-Test Equipment (BITE) that you will use in this task:
 - Display Test
 - Antiskid/Autobrake Control Test
 - Memory Recall
- (3) The AACU Display Test commands the display segments in the AACU Display to come ON. The ANTISKID INOP Light in the Flight Compartment also comes ON with the display test.
- (4) The Antiskid/Autobrake Control Test does the internal tests and external interfaces test. The faults that are found during this test are active.
- (5) If a maintenance message is displayed on the AACU and there is no Fault Procedure listed to correct it, it is assumed to be a failure of the AACU, do these steps:
 - (a) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - 1) Do this task: Antiskid/Autobrake Control Unit Operational Test, AMM TASK 32-42-00-720-801.
 - 2) If the maintenance message does not show during the antiskid/autobrake functional test, then you corrected the problem.

B. BITE Procedure

- (1) Do the fault MEMORY RECALL for the AACU:
 - (a) Set the PRESS/TEST-BIT Switch to the BIT position.
 - (b) If there are no faults, then the display will show TEST END.
 - (c) If there are faults in the memory, then the display will show the first maintenance message. Do these steps:
 - 1) Write the maintenance message.
 - 2) Set the PRESS/TEST-BIT Switch to the BIT position to look for more faults until the display show TEST END.

NOTE: The display shows TEST END when there are no fault in the memory. If you do not set the PRESS/TEST-BIT Switch to the BIT position in 45 seconds, the test will end and the fault will be removed from the display.
- (2) Do the display test for the AACU:
 - (a) Set the PRESS/TEST-BIT Switch to the PRESS/TEST position.
 - (b) Make sure that all display segments on the AACU display come ON in a checkerboard pattern.
 - (c) Make sure that the ANTI SKID INOP Light in the Flight Compartment also comes ON with the display test.
 - (d) If some of the display segments do not come ON, then do these steps:

EFFECTIVITY
SIA ALL

32-42 TASK 801

D633A103-SIA

Page 201
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - 2) Do the AACU BITE again.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the problem.
- (e) If the ANTISKID INOP Amber Light does not come ON, then do these steps:
- 1) Push and release the ANTISKID INOP Light, L2 (P2-2 Panel) to use the press-to-test switch in the light. If press to test fails, replace the bulbs or troubleshoot wiring to master dim/test.
 - 2) Do a wiring check between pin 8 of the light connector D339 and the following pins: pin 5 of D11402 (relay R626, J24), pin 5 of D11406 (relay R628, J22), and pin 3 of D11404 (relay R627, J22). If there is no continuity to all three pins, repair the wiring.
 - a) Do the AACU BITE again.
 - b) If the ANTI SKID INOP Amber Light comes ON, then you corrected the problem.
- (3) Do the antiskid/autobrake control test for the AACU:
- (a) Pressurize the Hydraulic Systems A and B. This is the task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - (b) Make sure that the AUTO BRAKE Selector Switch is in the OFF position.
 - (c) Make sure that the two Thrust Levers are in the IDLE position.
 - (d) Make sure that the Wheel Chocks are installed.
 - (e) Make sure that the PARKING BRAKE is released.
 - (f) Make sure that the LANDING GEAR Control Lever is in the DN position.
 - (g) Make sure that the SPD BRK Lever is in the DOWN position.
 - (h) Make sure that the airplane is in the ground mode. This is the task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
 - (i) Make sure that the mode select switch for the Air Data Inertial Reference Unit (ADIRU) is in the NAV mode and wait for the alignment to complete.
 - 1) Align the Air Data Inertial Reference System (ADIRS). Do this task: Air Data Inertial Reference System - Alignment from the ISDU, AMM TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, AMM TASK 34-21-00-820-801.
 - (j) Set the rotary switch on the AACU to the NORM position.
 - (k) Push and release the RESET Switch on the AACU.
 - (l) Set the AUTO BRAKE Selector Switch as follows:
 - 1) Set the AUTO BRAKE Switch to OFF position.
 - 2) Set the AUTO BRAKE Switch to position 1.

NOTE: The AUTO BRAKE DISARM Amber Lights will stay ON if the autobrake is disabled or the above arming conditions are not met.
 - (m) Push and hold the ENABLE/VERIFY Switch on the AACU.

EFFECTIVITY
SIA ALL

32-42 TASK 801

D633A103-SIA

Page 202
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (n) While you hold the ENABLE/VERIFY Switch, push and hold the VERIFY Switch on the AACU.
- NOTE: The ANTISKID INOP and AUTO BRAKE DISARM Amber Lights in the Flight Compartment should illuminate briefly during this test.
- (o) Release the ENABLE/VERIFY Switch and VERIFY Switch at the same time.
- 1) Make sure that the Antiskid Control Unit display shows TEST END after 10 - 20 seconds.
 - 2) After 4 seconds, make sure that the ANTISKID INOP Light on the P2-2 Panel flashes ON/OFF twice.
 - 3) After 9 more seconds, make sure that the AUTOBRAKE DISARM Light on the P2-2 Panel is ON for approximately 14 seconds, then OFF for approximately 5 seconds, and then remains ON at the end of the test.
- (p) If the AUTO BRAKE DISARM Amber Light in the Flight Compartment does not come ON during this test, then do these steps:
- 1) Push and release the AUTO BRAKE DISARM Light, L1 (P2-2 Panel) to use the press-to-test switch in the light. If press to test fails, replace the bulb or troubleshoot wiring to master dim/test.
 - 2) With the AUTO BRAKE Selector Switch armed in position 1, do a wiring continuity check between AACU connector D1040B, pin B7 (E1-3, M162), and AACU connector D1040A, pin D7. If there is no continuity to all these pins, repair the wiring or replace switch S4 in P2-2 Panel.
 - a) Do the AACU BITE again.
 - b) If the AUTO BRAKE DISARM Amber Light comes ON, then you corrected the problem.
- (q) If there are no faults, then the display will show TEST END. Do this step to complete the task:
- 1) Remove hydraulic power from Hydraulic Systems A and B. This is the task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - 2) Set the AUTO BRAKE Switch to the OFF position.
- (r) If the display shows BRK #####, then the test was initiated but not properly executed, you must repeat the test and make sure that you meet all of the initial conditions.
- (s) If there are existing faults, then the display on the AACU will show the first maintenance message. Do these steps:
- 1) Write the maintenance message.
 - 2) Push the VERIFY Switch to look for more faults until the display shows TEST END.

NOTE: The display shows TEST END when the test is completed. If you do not push the VERIFY Switch in 45 seconds, the test will end and the fault will be removed from the display.
 - 3) Remove hydraulic power from Hydraulic Systems A and B. This is the task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - 4) Refer to the table at the beginning of this chapter to find the Fault Isolation Task for the applicable maintenance message.
- (t) If there are no existing faults, but there was an indication of a fault, then refer to the list of stored faults from step 1 above and the table at the end of this task to find the Fault Isolation Task for the applicable maintenance message.

EFFECTIVITY
SIA ALL

32-42 TASK 801

D633A103-SIA

Page 203
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	A/B CNTL	32-42 TASK 807
ANTISKID	A/B SEL	32-42 TASK 821
ANTISKID	A/B SOL	32-42 TASK 808
ANTISKID	A/B SYS	32-42 TASK 803
ANTISKID	A/G 1	32-42 TASK 823
ANTISKID	A/G 2	32-42 TASK 823
ANTISKID	A/G SW	32-42 TASK 823
ANTISKID	ADIRU L	32-42 TASK 824
ANTISKID	ADIRU R	32-42 TASK 825
ANTISKID	BOX 1-4	32-42 TASK 803
ANTISKID	BOX 1	32-42 TASK 803
ANTISKID	BOX 2-3	32-42 TASK 803
ANTISKID	BOX 2	32-42 TASK 803
ANTISKID	BOX 3	32-42 TASK 803
ANTISKID	BOX 4	32-42 TASK 803
ANTISKID	BOX A/B (or BOX AB/B)	32-42 TASK 803
ANTISKID	BOX BITE	32-42 TASK 803
ANTISKID	CNTLP SW	32-42 TASK 810
ANTISKID	GEARSW1	32-42 TASK 812
ANTISKID	GEARSW2	32-42 TASK 812
ANTISKID	IB CFG	32-42 TASK 837
ANTISKID	OB CFG	32-42 TASK 835
ANTISKID	PARKBRK	32-42 TASK 811
ANTISKID	PRESL	32-42 TASK 822
ANTISKID	PRESR	32-42 TASK 822
ANTISKID	PRG XCMP	32-42 TASK 836
ANTISKID	PWR 1-4	32-42 TASK 802
ANTISKID	PWR 2-3	32-42 TASK 802
ANTISKID	PWR A/B	32-42 TASK 826
ANTISKID	PWR BITE	32-42 TASK 826
ANTISKID	SOL P SW	32-42 TASK 809
ANTISKID	SP CO LI	32-42 TASK 803
ANTISKID	SP CO RO	32-42 TASK 803
ANTISKID	SP SW LI	32-42 TASK 806
ANTISKID	SP SW LO	32-42 TASK 806

EFFECTIVITY
SIA ALL

32-42 TASK 801

D633A103-SIA

Page 204
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	SP SW RI	32-42 TASK 806
ANTISKID	SP SW RO	32-42 TASK 806
ANTISKID	SPLRHDL	32-42 TASK 827
ANTISKID	THR L 1	32-42 TASK 813
ANTISKID	THR L 2	32-42 TASK 813
ANTISKID	THR R 1	32-42 TASK 813
ANTISKID	THR R 2	32-42 TASK 813
ANTISKID	THR SW	32-42 TASK 813
ANTISKID	VLV 1-2	32-42 TASK 805
ANTISKID	VLV 1	32-42 TASK 804
ANTISKID	VLV 2	32-42 TASK 804
ANTISKID	VLV 3-4	32-42 TASK 805
ANTISKID	VLV 3	32-42 TASK 804
ANTISKID	VLV 4	32-42 TASK 804
ANTISKID	WHLMECH1	32-42 TASK 838
ANTISKID	WHLMECH2	32-42 TASK 838
ANTISKID	WHLMECH3	32-42 TASK 838
ANTISKID	WHLMECH4	32-42 TASK 838
ANTISKID	XDCR 1	32-42 TASK 806
ANTISKID	XDCR 2	32-42 TASK 806
ANTISKID	XDCR 3	32-42 TASK 806
ANTISKID	XDCR 4	32-42 TASK 806

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-42 TASK 801

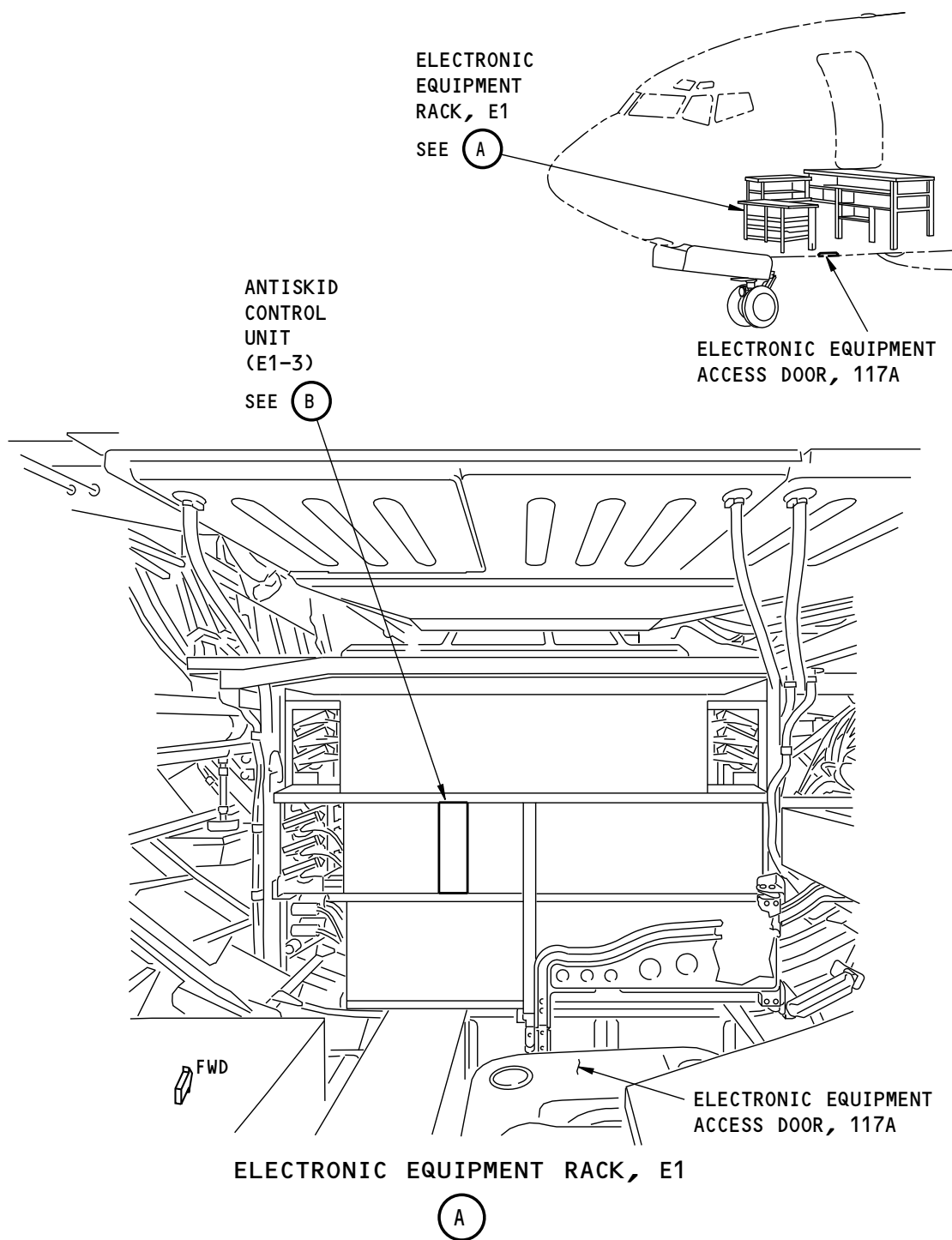
D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 205
Feb 15/2023



737-600/700/800/900
FAULT ISOLATION MANUAL



G54213 S0000147089_V1

Antiskid/Autobrake Control Unit
Figure 201/32-42-00-990-803 (Sheet 1 of 3)

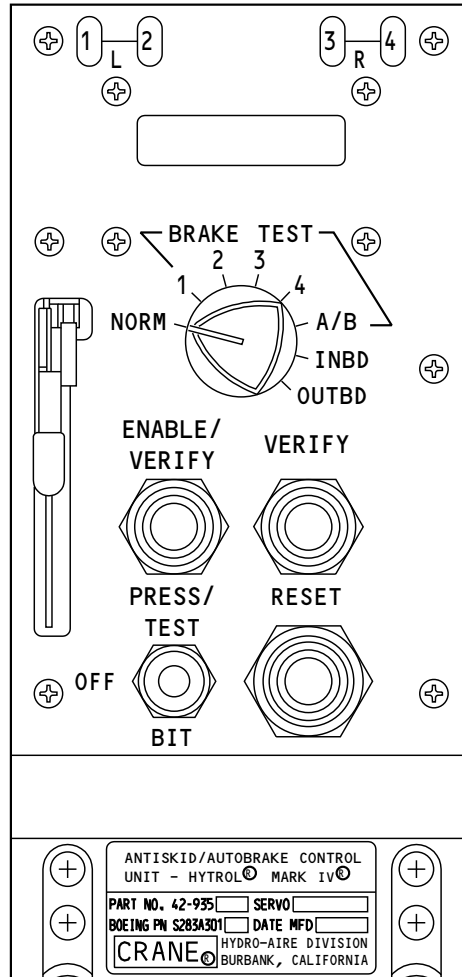
EFFECTIVITY
SIA ALL

32-42 TASK 801

D633A103-SIA

Page 206
Oct 15/2021

737-600/700/800/900
FAULT ISOLATION MANUAL



ANTISKID/AUTOBRAKE CONTROL UNIT

(B)

G54211 S0000147090_V1

Antiskid/Autobrake Control Unit
Figure 201/32-42-00-990-803 (Sheet 2 of 3)

EFFECTIVITY
SIA ALL; AIRPLANES WITH STEEL OR CARBON
BRAKES

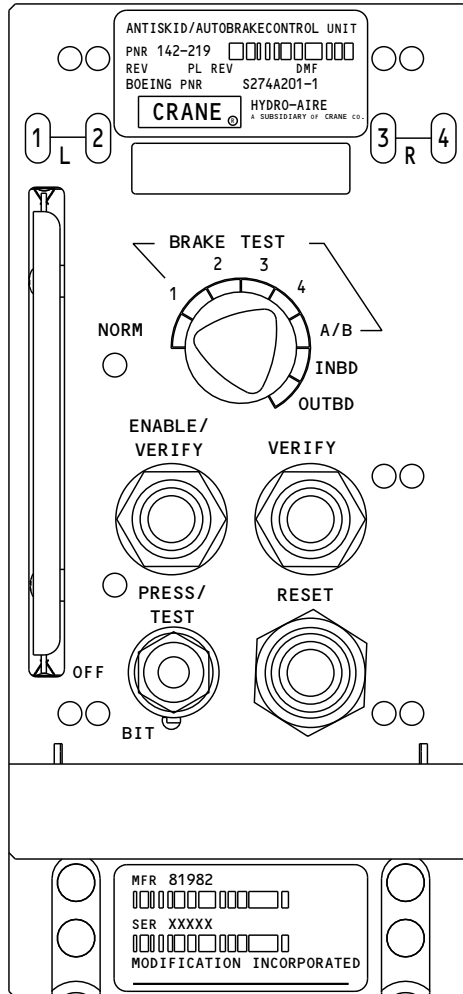
D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

32-42 TASK 801

Page 207
 Oct 15/2021

737-600/700/800/900
FAULT ISOLATION MANUAL



ANTISKID/AUTOBRAKE CONTROL UNIT

B

2555304 S0000609324_V1

Antiskid/Autobrake Control Unit
Figure 201/32-42-00-990-803 (Sheet 3 of 3)

EFFECTIVITY
 SIA ALL; AIRPLANES WITH CARBON BRAKES

D633A103-SIA

32-42 TASK 801

Page 208
 Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

802. Antiskid Autobrake Control Unit Power for Antiskid 1-4, or 2-3 Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) PWR 1-4
 - (b) PWR 2-3
- (2) The antiskid/autobrake control unit (AACU) does not receive power.

B. Possible Causes

- (1) Circuit breaker C195, or C196
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the power wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) In the table below, find the electrical connector and the pair of pins for the applicable circuit breaker:

Table 201

ANTISKID WHEELS 1,2,3, and 4 (WDM 32-41-11)

CIRCUIT BREAKER EQUIPMENT NUMBER	CIRCUIT BREAKER CONNECTOR	AACU CONNECTOR
WHEEL 1&4	D40750P	D1040B
C195	pin 2	pin C1
WHEEL 2&3	D46069P	D1040A

EFFECTIVITY
SIA ALL

32-42 TASK 802

D633A103-SIA

Page 209
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

Table 201 (Continued)

ANTISKID WHEELS 1,2,3, and 4 (WDM 32-41-11)

CIRCUIT BREAKER EQUIPMENT NUMBER

C196

CIRCUIT BREAKER CONNECTOR

pin 8

AACU CONNECTOR

pin C1

- (c) Do a check for 28V DC from pin C1 of the connector D1040B or D1040A to structure ground (WDM 32-41-11).
- (d) If there is not 28V DC at pin C1 of D1040A or D1040B, then do these steps:
 - 1) Open the P6-3 load control center panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C195 or C196.
 - 3) If there is not 28V DC at the load terminal, then do these steps:
 - a) Replace this circuit breaker, C195 or C196 (WDM 32-41-11):
<1> These are the circuit breakers:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

- b) Re-install the antiskid/autobrake control unit, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - c) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - d) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - 4) If there is 28V DC at the load terminal, then do these steps:
 - a) Repair the wiring between these pins of the connector D1040A or D1040B at the E1-3 shelf and the load terminal of circuit breaker C195 or C196 (WDM 32-41-11):
 - b) Re-install the antiskid/autobrake control unit, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - c) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - d) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (e) If there is 28V DC at pins C1 of the connector D1040A or D1040B, then continue.
- (2) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

————— END OF TASK —————

EFFECTIVITY
SIA ALL

32-42 TASK 802

D633A103-SIA

Page 210
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

803. Antiskid/Autobrake System Control Unit Internal Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) BOX 1-4
 - (b) BOX 2-3
 - (c) BOX 1
 - (d) BOX 2
 - (e) BOX 3
 - (f) BOX 4
 - (g) BOX BITE
 - (h) BOX A/B (or BOX AB/B)
 - (i) SP CO LI
 - (j) SP CO RO
 - (k) A/B SYS
- (2) These messages indicate an internal failure of the antiskid/autobrake control unit (AACU), M162, or the Auto Speedbrake Module (ASM), M980, or the alternate antiskid valves. The possible causes of each message is as follows:
 - (a) BOX 1-4 indicates a failure of the outboard antiskid card (5V DC, memory, communication, or code execution failure).
 - 1) BOX 1-4 can also indicate an out of tolerance condition for normal antiskid valve 1 or normal antiskid valve 4.
 - 2) BOX 1-4 can also indicate an out of tolerance condition for the alternate antiskid valve which drives wheel pair 1 and 2.
 - 3) Do this task: Antiskid Valve Functional Test, AMM TASK 32-42-00-720-802.
 - a) A BOX 1-4 fault message would indicate a potential problem with antiskid valve 1 or antiskid valve 4. To determine if either of the antiskid valves and/or associated wiring is out of tolerance do this task: Normal Antiskid Valve 1 (2, 3, 4) Problem - Fault Isolation, 32-42 TASK 804, for the applicable valves.
 - (b) BOX 2-3 indicates a failure of the inboard antiskid card (5V DC, memory, communication, or code execution failure).
 - 1) BOX 2-3 can also indicate an out of tolerance condition for normal antiskid valve 2 or normal antiskid valve 3.
 - 2) BOX 2-3 can also indicate an out of tolerance condition for the alternate antiskid valve which drives wheel pair 3 and 4.
 - 3) Do this task: Antiskid Valve Functional Test, AMM TASK 32-42-00-720-802.
 - a) A BOX 2-3 fault message would indicate a potential problem with antiskid valve 2 or antiskid valve 3. To determine if either of the antiskid valves and/or associated wiring is out of tolerance do this task: Normal Antiskid Valve 1 (2, 3, 4) Problem - Fault Isolation, 32-42 TASK 804.
 - (c) BOX 1 indicates a wheel 1 transducer interface or valve driver failure.
 - (d) BOX 2 indicates a wheel 2 transducer interface or valve driver failure.
 - (e) BOX 3 indicates a wheel 3 transducer interface or valve driver failure.

EFFECTIVITY
SIA ALL

32-42 TASK 803

D633A103-SIA

Page 211
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (f) BOX 4 indicates a wheel 4 transducer interface or valve driver failure.
- (g) BOX BITE indicates a BITE card failure (memory, comm, or code execution).
- (h) BOX A/B (or BOX AB/B) indicates an autobrake card failure (5v DC power, memory, comm, or code execution) when landing or Rejected Takeoff (RTO) autobrake is selected.
 - 1) BOX A/B (or BOX AB/B) can also indicate a problem with a brake pedal pressure switch. Do the procedure in Antiskid Valve Functional Test, AMM TASK 32-42-00-720-802 and Autobrake Shuttle Valve Operational Test, AMM TASK 32-42-00-400-802.
 - a) If the Antiskid Valve Functional Test, AMM TASK 32-42-00-720-802 duplicated the fault code and the Autobrake Shuttle Valve Operational Test, AMM TASK 32-42-00-400-802 reveals a slight pressure rise but does not develop the pressure required for the time period required, then troubleshooting for a hydraulic pressure leak or faulty pressure switch is indicated. An internal autobrake shuttle valve leak can cause the S762 "Left" or S763 "Right" brake pedal pressure switches to activate and cause the test to terminate prematurely. A similar response can happen as a result of a faulty S762 "Left" or S763 "Right" brake pedal pressure switch. This pressure condition is a possibility.
 - b) If there is no pressure bump, the fault is probably internal and the AACU should be replaced.
 - (i) SP CO LI indicates the left inboard wheel speed switch control disagrees with output for more than 3 seconds.
 - (j) SP CO RO indicates the right outboard wheel speed switch control disagrees with output for more than 3 seconds.
 - (k) A/B SYS indicates that the AACU detected a fault during the system test, but is unable to isolate the fault.

B. Possible Causes

- (1) AACU, M162
- (2) Normal antiskid valves
- (3) Alternate antiskid valves
- (4) Auto speedbrake module ASM, M980

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) SSM 32-41-11
- (2) WDM 32-41-11

EFFECTIVITY
SIA ALL

32-42 TASK 803

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 212
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.
- (2) Do this task when you get error messages "i" or "j" above: Auto Speed Brake/Antiskid Interface Test, 27-62 TASK 801.
- (3) Do this task when you get error message "h" above: ANTISKID/AUTOBRAKE SYSTEM - ADJUSTMENT/TEST, AMM 32-42-00/501 test 2 and test 6.

F. Fault Isolation Procedure

- (1) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (c) If the maintenance message still shows, then continue.
- (2) Do this task: Normal Antiskid Valve 1 (2, 3, 4) Problem - Fault Isolation, 32-42 TASK 804.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (b) If the maintenance message still shows, then continue.
- (3) Do this task: Alternate Anti-Skid Valve 1-2 (3-4) Problem - Fault Isolation, 32-42 TASK 805.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (b) If the maintenance message still shows, then continue.
- (4) Replace the auto speed brake module, M980. These are the tasks:
 - Auto Speed Brake Module Removal, AMM TASK 27-62-35-000-801
 - Auto Speed Brake Module Installation, AMM TASK 27-62-35-400-801
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

————— **END OF TASK** —————

804. Normal Antiskid Valve 1 (2, 3, 4) Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) VLV 1
 - (b) VLV 2
 - (c) VLV 3
 - (d) VLV 4

EFFECTIVITY
SIA ALL

32-42 TASKS 803-804

D633A103-SIA

Page 213
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL PRE SB 737-32-1528

Table 202 Message and Valve Correlation

Message	Antiskid Valve	Wheel	Tire Location
VLV 1	V9	No. 1	Left Outboard
VLV 2	V7	No. 2	Left Inboard
VLV 3	V8	No. 3	Right Inboard
VLV 4	V10	No. 4	Right Outboard

SIA ALL POST SB 737-32-1528

Table 203 Message and Valve Correlation

Message	Antiskid Valve	Wheel	Tire Location
VLV 1	V199	No. 1	Left Outboard
VLV 2	V199	No. 2	Left Inboard
VLV 3	V200	No. 3	Right Inboard
VLV 4	V200	No. 4	Right Outboard

SIA ALL

(2) The AACU does not receive a valid signal from a Normal Anti-Skid Valve.

B. Possible Causes

SIA ALL PRE SB 737-32-1528

(1) Wheel 1 (2, 3, 4) Anti-Skid Valve, V9 (V7, V8, V10)

SIA ALL POST SB 737-32-1528

(2) Wheel 1 (2, 3, 4) Anti-Skid Valve, V199 (V199, V200, V200)

SIA ALL

(3) AACU, M162

(4) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

(1) WDM 32-41-11

(2) SSM 32-41-11

E. Initial Evaluation

(1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

(a) If the maintenance message does not show, then there was an intermittent fault.

EFFECTIVITY
SIA ALL

32-42 TASK 804

D633A103-SIA

Page 214
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

SIA ALL PRE SB 737-32-1528

- (1) Do this Resistance check of the Normal Anti-Skid Valves (WDM 32-41-11):
- (a) Disconnect the connector from the applicable Normal Anti-Skid Valve.
 - (b) Set the meter to show the Resistance in the 200 Ω Range.
 - (c) Measure the Resistance at the applicable Anti-Skid Valve as follows:

	VLV RECPTCLE	VLV RECPTCLE	
WHEEL 1 VLV, V9	D926 pin 1	D926 pin 2	180-200 Ω
WHEEL 2 VLV, V7	D924 pin 1	D924 pin 2	180-200 Ω
WHEEL 3 VLV, V8	D930 pin 1	D930 pin 2	180-200 Ω
WHEEL 4 VLV, V10	D932 pin 1	D932 pin 2	180-200 Ω

- (d) Make sure that the Resistance is between 180 and 200 Ω at 70 $\pm$ 5°F (21 $\pm$ 3°C).

NOTE: If the Resistance is measured at a Temperature outside the given range, multiply the Resistance value by the applicable Correction Factor given in the Temperature Correction Factors Table below.

For example, if the reading is 188 Ω at 60°F (15.6°C), the Correction Factor given in the table is 1.022. Thus, the equivalent Resistance at 70°F (21°C) is 188 x 1.022 Ohms = 192 Ω .

Table 204 Temperature Correction Factors

Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor
60 (15.6)	1.022	72 (22.2)	0.996	84 (28.9)	0.970	96 (35.6)	0.947
61 (16.1)	1.020	73 (22.8)	0.994	85 (29.4)	0.968	97 (36.1)	0.945
62 (16.7)	1.018	74 (23.3)	0.991	86 (30.0)	0.966	98 (36.7)	0.943
63 (17.2)	1.015	75 (23.4)	0.989	87 (30.6)	0.964	99 (37.2)	0.941
64 (17.8)	1.013	76 (24.4)	0.987	88 (31.1)	0.962	100 (37.8)	0.939
65 (18.3)	1.011	77 (25.0)	0.985	89 (31.7)	0.960		
66 (18.9)	1.009	78 (25.6)	0.983	90 (32.2)	0.958		
67 (19.4)	1.007	79 (26.1)	0.981	91 (32.8)	0.956		

EFFECTIVITY
SIA ALL

32-42 TASK 804

D633A103-SIA

Page 215
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL PRE SB 737-32-1528 (Continued)

Table 204 Temperature Correction Factors (Continued)

Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor
68 (20.0)	1.004	80 (26.7)	0.979	92 (33.3)	0.954		
69 (20.6)	1.002	81 (27.2)	0.977	93 (33.9)	0.952		
70 (21.1)	1.000	82 (27.8)	0.974	94 (34.4)	0.950		
71 (21.7)	0.998	83 (28.3)	0.973	95 (35.0)	0.948		

- 1) If the Resistance is not as specified above, then replace the applicable Normal Anti-Skid Valve. These are the tasks:
 - Antiskid Valve Removal, AMM TASK 32-42-31-000-801
 - Antiskid Valve Installation, AMM TASK 32-42-31-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the Resistance is as specified above, then continue.
- (2) Do this check of the wiring (WDM 32-41-11):
- (a) Remove the AACU, M162 to get access to the electrical connectors. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Examine the wiring between the applicable Normal Anti-Skid Valve and the AACU at the E1-3 Shelf as follows:

	A/S VLV CONNECTOR	AACU CONNECTOR
WHEEL 1 VLV, V9	D926 pin 1	D1040A pin B1
WHEEL 2 VLV, V7	D924 pin 1	D1040B pin A1
WHEEL 3 VLV, V8	D930 pin 1	D1040B pin A3
WHEEL 4 VLV, V10	D932 pin 1	D1040A pin B3

EFFECTIVITY
SIA ALL

32-42 TASK 804

D633A103-SIA

Page 216
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL PRE SB 737-32-1528 (Continued)

**A/S VLV
CONNECTOR**

**WHEEL 1 VLV,
V9**

D926
pin 2 GD5108-DC

**WHEEL 2 VLV,
V7**

D924
pin 2 GD5108-DC

**WHEEL 3 VLV,
V8**

D930
pin 2 GD662-DC

**WHEEL 4 VLV,
V10**

D932
pin 2 GD5101-DC

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector to the applicable Normal Anti-Skid Valve.
 - c) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, re-connect the connector to the applicable Normal Ant-Skid Valve, and then continue.
- (3) Install a new AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do the Repair Confirmation at the end of this task.

SIA ALL POST SB 737-32-1528

- (4) Do this Resistance check of the Normal Anti-Skid Valves (WDM 32-41-11):
 - (a) Disconnect the connector from the applicable Normal Anti-Skid Valve.
 - (b) Set the meter to show the Resistance in the 200 Ω Range.
 - (c) Measure the Resistance at the applicable Anti-Skid Valve as follows:

EFFECTIVITY
SIA ALL

32-42 TASK 804

D633A103-SIA

Page 217
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL POST SB 737-32-1528 (Continued)

	VLV RECPTCLE	VLV RECPTCLE	
WHEEL 1 VLV, V199	D17142 pin 1	D17142 pin 2	180-200 Ω
WHEEL 2 VLV, V199	D17144 pin 1	D17144 pin 2	180-200 Ω
WHEEL 3 VLV, V200	D17146 pin 1	D17146 pin 2	180-200 Ω
WHEEL 4 VLV, V200	D17148 pin 1	D17148 pin 2	180-200 Ω

- (d) Make sure that the Resistance is between 180 and 200 Ω at 70 $\pm$ 5°F (21 $\pm$ 3°C).

NOTE: If the Resistance is measured at a Temperature outside the given range, multiply the Resistance value by the applicable Correction Factor given in the Temperature Correction Factors Table below.

For example, if the reading is 188 Ω at 60°F (15.6°C), the Correction Factor given in the table is 1.022. Thus, the equivalent Resistance at 70°F (21°C) is 188 x 1.022 Ohms = 192 Ω .

Table 205 Temperature Correction Factors

Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor
60 (15.6)	1.022	72 (22.2)	0.996	84 (28.9)	0.970	96 (35.6)	0.947
61 (16.1)	1.020	73 (22.8)	0.994	85 (29.4)	0.968	97 (36.1)	0.945
62 (16.7)	1.018	74 (23.3)	0.991	86 (30.0)	0.966	98 (36.7)	0.943
63 (17.2)	1.015	75 (23.4)	0.989	87 (30.6)	0.964	99 (37.2)	0.941
64 (17.8)	1.013	76 (24.4)	0.987	88 (31.1)	0.962	100 (37.8)	0.939
65 (18.3)	1.011	77 (25.0)	0.985	89 (31.7)	0.960		
66 (18.9)	1.009	78 (25.6)	0.983	90 (32.2)	0.958		
67 (19.4)	1.007	79 (26.1)	0.981	91 (32.8)	0.956		
68 (20.0)	1.004	80 (26.7)	0.979	92 (33.3)	0.954		
69 (20.6)	1.002	81 (27.2)	0.977	93 (33.9)	0.952		
70 (21.1)	1.000	82 (27.8)	0.974	94 (34.4)	0.950		
71 (21.7)	0.998	83 (28.3)	0.973	95 (35.0)	0.948		

- 1) If the Resistance is not as specified above, then replace the applicable Normal Anti-Skid Valve. These are the tasks:

EFFECTIVITY
SIA ALL

32-42 TASK 804

D633A103-SIA

Page 218
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- Antiskid Valve Removal, AMM TASK 32-42-31-000-802
 - Antiskid Valve Installation, AMM TASK 32-42-31-400-802
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the Resistance is as specified above, then continue.
- (5) Do this check of the wiring (WDM 32-41-11):
- (a) Remove the AACU, M162 to get access to the electrical connectors. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Examine the wiring between the applicable Normal Anti-Skid Valve and the AACU at the E1-3 Shelf as follows:

	A/S VLV CONNECTOR	AACU CONNECTOR
WHEEL 1 VLV, V199	D17142 pin 1	D1040A pin B1
WHEEL 2 VLV, V199	D17144 pin 1	D1040B pin A1
WHEEL 3 VLV, V200	D17146 pin 1	D1040B pin A3
WHEEL 4 VLV, V200	D17148 pin 1	D1040A pin B3
	A/S VLV CONNECTOR	
WHEEL 1 VLV, V199	D17142 pin 2	GD5108-DC
WHEEL 2 VLV, V199	D17144 pin 2	GD5108-DC
WHEEL 3 VLV, V200	D17146 pin 2	GD662-DC
WHEEL 4 VLV, V200	D17148 pin 2	GD5101-DC

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

EFFECTIVITY
SIA ALL

32-42 TASK 804



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL POST SB 737-32-1528 (Continued)

- b) Re-connect the connector to the applicable Normal Ant-Skid Valve.
- c) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, re-connect the connector to the applicable Normal Ant-Skid Valve, and then continue.
- (6) Install a new AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do the Repair Confirmation at the end of this task.

SIA ALL

G. Repair Confirmation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then corrected the problem.
 - (b) If the maintenance message still shows, then continue the Fault Isolation Procedure at the subsequent step.

END OF TASK

805. Alternate Anti-Skid Valve 1-2 (3-4) Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) VLV 1-2
 - (b) VLV 3-4
- (2) The AACU does not receive a valid signal from the Alternate Anti-Skid Valve.

B. Possible Causes

- (1) Left (Right) Alternate Anti-Skid Valve, V125 (V124)
- (2) AACU, M162
- (3) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) WDM 32-41-11
- (2) SSM 32-41-11

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.

EFFECTIVITY
SIA ALL

32-42 TASKS 804-805

D633A103-SIA

Page 220
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this Resistance check of the Alternate Anti-Skid Valve (WDM 32-41-11):
- Disconnect the connector D2874 (D2872) from the applicable Left (Right) Alternate Anti-Skid Valve, V125 (V124).
 - Set the meter to show the Resistance in the 200 Ω Range.
 - Measure the Resistance at the applicable Alternate Anti-Skid Valve as follows:

LEFT ALTN A/S VLV (WHEEL 1&2), V125

VALVE RECEPTACLE	VALVE RECEPTACLE	RESISTANCE
pin 1	pin 2	180-200 Ω

RIGHT ALTN A/S VLV (WHEEL 3&4), V124

VALVE RECEPTACLE	VALVE RECEPTACLE	RESISTANCE
pin 1	pin 2	180-200 Ω

- (d) Make sure that the Resistance is between 180 and 200 Ω at 70 $\pm$ 5°F (21 $\pm$ 3°C).

NOTE: If the Resistance is measured at a Temperature outside the given range, multiply the Resistance value by the applicable Correction Factor given in the Temperature Correction Factors Table below.

For example, if the reading is 188 Ω at 60°F (15.6°C), the Correction Factor given in the table is 1.022. Thus, the equivalent Resistance at 70°F (21°C) is 188 x 1.022 Ohms = 192 Ω .

Table 206 Temperature Correction Factors

Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor	Ambient Temp °F (°C)	Correction Factor
60 (15.6)	1.022	72 (22.2)	0.996	84 (28.9)	0.970	96 (35.6)	0.947
61 (16.1)	1.020	73 (22.8)	0.994	85 (29.4)	0.968	97 (36.1)	0.945
62 (16.7)	1.018	74 (23.3)	0.991	86 (30.0)	0.966	98 (36.7)	0.943
63 (17.2)	1.015	75 (23.4)	0.989	87 (30.6)	0.964	99 (37.2)	0.941
64 (17.8)	1.013	76 (24.4)	0.987	88 (31.1)	0.962	100 (37.8)	0.939
65 (18.3)	1.011	77 (25.0)	0.985	89 (31.7)	0.960		
66 (18.9)	1.009	78 (25.6)	0.983	90 (32.2)	0.958		
67 (19.4)	1.007	79 (26.1)	0.981	91 (32.8)	0.956		
68 (20.0)	1.004	80 (26.7)	0.979	92 (33.3)	0.954		
69 (20.6)	1.002	81 (27.2)	0.977	93 (33.9)	0.952		
70 (21.1)	1.000	82 (27.8)	0.974	94 (34.4)	0.950		
71 (21.7)	0.998	83 (28.3)	0.973	95 (35.0)	0.948		

EFFECTIVITY
SIA ALL

32-42 TASK 805

D633A103-SIA

Page 221
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) If the Resistance is not as specified above, then replace the applicable Left (Right) Alternate Anti-Skid Valve, V125 (V124). These are the tasks:
 - Antiskid Valve Removal, AMM TASK 32-42-31-000-801
 - Antiskid Valve Installation, AMM TASK 32-42-31-400-801
 - a) Do Repair Confirmation at the end of this task.
 - 2) If the Resistance is as specified above, then continue.
- (2) Do this check of the wiring (WDM 32-41-11):
- (a) Remove the AACU, M162 to get access to the electrical connectors. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Examine the wiring between the applicable Alternate Anti-Skid Valve and the AACU at the E1-3 Shelf as follows:

LEFT ALTN A/S VALVE, V125

A/S VLV CONNECTOR D2874	AACU CONNECTOR D1040A
pin 1	pin A15

LEFT ALTN A/S VALVE, V125

A/S VLV CONNECTOR D2874	
pin 2	GD5108-DC

RIGHT ALTN A/S VALVE, V124

A/S VLV CONNECTOR D2872	AACU CONNECTOR D1040B
pin 1	pin B15

RIGHT ALTN A/S VALVE, V124

A/S VLV CONNECTOR D2872	
pin 2	GD-5101-DC

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector to the applicable Alternate Anti-Skid Valve.
 - c) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, re-connect the connector to the applicable Alternate Anti-Skid Valve, and then continue.
- (3) Install a new AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.

EFFECTIVITY
SIA ALL

32-42 TASK 805

D633A103-SIA

Page 222
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) Do Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (a) If the maintenance message does not show, then corrected the problem.
- (b) If the maintenance message still shows, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

806. Antiskid Transducer Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
- (a) XDCR 1
- (b) XDCR 2
- (c) XDCR 3
- (d) XDCR 4
- (e) SP SW LI
- (f) SP SW LO
- (g) SP SW RI
- (h) SP SW RO
- (2) The antiskid/autobrake control unit (AACU) does not receive a valid signal from an antiskid transducer.

B. Possible Causes

- (1) Antiskid transducer, T392, T393, T394, or T395
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring
- (4) Auto speedbrake module (ASM), M980

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

EFFECTIVITY
SIA ALL

32-42 TASKS 805-806

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 223
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message show during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.
- (2) Do this task if you get message “e”, “f”, “g”, or “h” above: Auto Speed Brake/Antiskid Interface Test, 27-62 TASK 801.

F. Fault Isolation Procedure

- (1) Do this check of antiskid transducer:
 - (a) Disconnect connector from the applicable antiskid transducer.
 - (b) Measure the resistance between pin 1 and pin 3 of the connector at the applicable antiskid transducer.
 - (c) If the resistance is not 545 to 575 Ohms at 65°F (18°C) to 75°F (24°C), do these steps:
 - 1) Replace the applicable antiskid transducer. These are the tasks:
 - Transducer Removal, AMM TASK 32-42-11-000-801
 - Transducer Installation, AMM TASK 32-42-11-400-801
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (d) If the resistance is 545 to 575 Ohms at 65°F (18°C) to 75°F (24°C), then continue.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) In the table below, find the electrical connector and the pair of pins for the applicable antiskid transducer:

Table 207

TRANSDUCER EQUIPMENT NUMBER	AACU CONNECTOR		TRANSDUCER CONNECTOR NUMBER
WHEEL #1	D1040B		D11120
T392	pin A6	-----	pin 3
	pin A5	-----	pin 1
WHEEL #2	D1040B		D11122
T394	pin A13	-----	pin 3
	pin A12	-----	pin 1
WHEEL #3	D1040A		D11124
T393	pin B13	-----	pin 3
	pin B12	-----	pin 1

EFFECTIVITY
SIA ALL

32-42 TASK 806

D633A103-SIA

Page 224
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Table 207 (Continued)

TRANSDUCER EQUIPMENT NUMBER	AACU CONNECTOR		TRANSDUCER CONNECTOR NUMBER
WHEEL #4	D1040A		D11126
T395	pin B6	-----	pin 3
	pin B5	-----	pin 1

- (c) Do a wiring check between the pairs of pins of connector D1040B or D1040A at the E1-3 shelf and the pins of the connector at the antiskid transducer.
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the antiskid transducer.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector to the antiskid transducer.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

————— **END OF TASK** —————

807. Autobrake Control Valve Module - Servo Valve Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) A/B CNTL
- (2) The possible cause of message A/B CNTL is the control pressure switch indicates low pressure, the solenoid pressure switch indicates high pressure, and the control valve is energized.
- (3) The antiskid/autobrake control unit (AACU) does not receive a valid signal from the servo valve of the autobrake control valve module.

B. Possible Causes

- (1) The servo valve of the autobrake control valve module.
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

EFFECTIVITY
SIA ALL

32-42 TASKS 806-807

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 225
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
(2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
- (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the autobrake control valve module:

NOTE: Steps (a) through (b) may be skipped if you do not wish to replace individual Line Replaceable Units.

- (a) Disconnect the electrical connector D2574 from the servo valve.
- (b) Measure the resistance between the pin 1 and pin 2 of the connector at the servo valve.
- (c) If the resistance is not 400 - 600 ohms, then do these steps:
- 1) Replace the servo valve. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (d) If the resistance is 400 - 600 ohms, do these steps:
- 1) Inspect and clean the connector D2574.
 - 2) Reconnect connector D2574.
 - 3) Replace the servo valve pressure switch. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802

NOTE: The servo valve pressure switch is associated with connector D2576.

EFFECTIVITY
SIA ALL

32-42 TASK 807

D633A103-SIA

Page 226
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- 5) If the maintenance message does not show during during the antiskid/autobrake control/ test, then you corrected the fault.
- (e) If the maintenance message still shows, then do these steps:
 - 1) Replace the autobrake control valve module. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during during the antiskid/autobrake control/ test, then you corrected the fault.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) In the table below, find the electrical connector and the pair of pins for the servo valve and pressure switch:

**AACU
CONNECTOR
D1040A**

pin D9	.....	pin 2
pin C9	.....	pin1

**SERVO VALVE
CONNECTOR
D2574**

**AACU
CONNECTOR
D1040A**

pin C7		pin 3

**PRESSURE SW
CONNECTOR
D2576**

D1040B

pin A10		pin 2

D2576

- (c) Do a wiring check between the pins of connector D1040A and D1040B at the E1-3 shelf and the pins of connector D2574 at the servo valve and connector D2576 at the pressure switch.
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the servo valve.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

EFFECTIVITY
SIA ALL

32-42 TASK 807



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector to the servo valve and pressure switch.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

———— **END OF TASK** ————

808. Autobrake Control Valve Module - Solenoid Valve Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) A/B SOL
- (2) The possible cause of message A/B SOL is the Solenoid Pressure Switch indicates high pressure when the Solenoid Valve is commanded closed or the Solenoid Pressure Switch indicates low pressure when the Solenoid Valve is commanded open.
- (3) The AACU, M162 does not receive a valid signal from the Solenoid Valve of the Autobrake Control Valve Module, V122.

B. Possible Causes

- (1) Solenoid Pressure Switch of the Autobrake Control Valve Module, V122
- (2) Solenoid Valve of the Autobrake Control Valve Module, V122
- (3) AACU, M162
- (4) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) SSM 32-42-11
- (2) WDM 32-42-11

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If a maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-42 TASKS 807-808

D633A103-SIA

Page 228
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Fault Isolation Procedure

- (1) Do this check of the Solenoid Pressure Switch (WDM 32-42-11):
 - (a) Prepare to supply pressure through the Autobrake Control Module:
 - 1) Make sure that the two Thrust Levers are in the IDLE position.
 - 2) Make sure that the Landing Gear Control Lever is in the DOWN position.
 - 3) Make sure that the spoilers are stowed.
 - 4) Make sure that the Right and Left ADIRSs are in the NAV mode.
 - a) Align the ADIRS. This is the task: Air Data Inertial Reference System - Alignment from the ISDU, AMM TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, AMM TASK 34-21-00-820-801.
 - 5) Make sure that the tires have chocks installed around them.
 - 6) Release the parking brake.



KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- 7) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- 8) Set the TEST SELECTOR Switch on the Antiskid Control Unit to A/B.
- (b) Disconnect the Solenoid Pressure Switch connector D2572 from the Autobrake Control Valve Module, V122.
- (c) Prepare to check the continuity between pin 1 and pin 2 of the Solenoid Pressure Switch receptacle within 10 seconds of enabling the Control Module in the steps that follow.
- (d) Do the steps that follow for Autobrake Selector position "MAX" to supply pressure through the Autobrake Control Module.
 - 1) Set the Autobrake Selector Switch on the P2-2 Panel to "MAX".
 - 2) Push and hold the ENABLE/VERIFY Button on the AACU.
 - 3) While you hold the ENABLE/VERIFY Button, push and hold the VERIFY Button on the AACU.
 - 4) Release the ENABLE/VERIFY Button and the VERIFY Button at the same time.

NOTE: The AACU Display will show BRK A/B4 during the test. The AUTOBRAKE DISARM Light on the P2-2 Panel will come on at the end of this test.
- (e) Make sure that there is continuity between pin 1 and pin 2 of the Solenoid Pressure Switch receptacle.

NOTE: The Control Module will supply 3000 psi (20,684 kPa) to the brake for approximately 10 seconds.
- (f) Set the Autobrake Selector Switch on the P2-2 Panel to "OFF".
- (g) Set the TEST SELECTOR Switch on the AACU to NORM.
- (h) Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

EFFECTIVITY
SIA ALL

32-42 TASK 808

D633A103-SIA

Page 229
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (i) If there was no continuity between pin 1 and pin 2 of the Solenoid Pressure Switch receptacle, then do these steps:
 - 1) Replace the Solenoid Pressure Switch. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - 2) Do the Repair Confirmation at the end of this task.
 - (j) If there was continuity between pin 1 and pin 2 of the Solenoid Pressure Switch receptacle, then continue.
- (2) Do this check of the wiring (WDM 32-42-11):
- (a) Remove the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Do a wiring check between these pins:

E1-3 SHELF	SOLENOID
AACU	PRESSURE
CONNECTOR	SWITCH
D1040B	CONNECTOR
	D2572
pin D4	pin 1

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the Solenoid Pressure Switch connector D2572 to the Autobrake Control Valve Module, V122.
 - c) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then continue:
 - a) Re-connect the Solenoid Pressure Switch connector D2572 to the Autobrake Control Valve Module, V122.
 - b) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (3) Do this check of the Solenoid Valve (WDM 32-42-11):
- (a) Disconnect the Solenoid Valve connector D2570 from the Autobrake Control Valve Module, V122.
 - (b) Make sure that there is continuity between the pin 1 and pin 2 of the Solenoid Valve receptacle.

NOTE: Pin 1 and pin 2 are internally connected to pin D and A of the Solenoid Valve.

- 1) If there is no continuity between pin 1 and pin 2 of the Solenoid Valve receptacle, then do these steps:
 - a) Replace the Solenoid Valve. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802

EFFECTIVITY
SIA ALL

32-42 TASK 808

D633A103-SIA

Page 230
Feb 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
- b) Do the Repair Confirmation at the end of this task.
- 2) If there is continuity between pin 1 and pin 2 of the Solenoid Valve receptacle, then continue.
- (4) Do this check of the wiring (WDM 32-42-11):
 - (a) Remove the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Do a wiring check between these pins:

E1-3 SHELF	SOLENOID
AACU	VALVE
CONNECTOR	CONNECTOR
D1040A	D2570
pin B8	pin 2
- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the Solenoid Valve connector D2570 to the Autobrake Control Valve Module, V122.
 - c) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do this step and continue:
 - a) Re-connect the Solenoid Valve connector D2570 to the Autobrake Control Valve Module, V122.
- (5) Install a new AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the problem.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then continue the Fault Isolation Procedure at the subsequent step.

——— END OF TASK ———

809. Autobrake Control Valve Module - Solenoid Pressure Switch Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) SOL P SW
- (2) The possible cause of message SOL P SW is the solenoid pressure switch indicates low pressure (<1000 psi).

EFFECTIVITY
SIA ALL

32-42 TASKS 808-809

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 231
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (3) The antiskid/autobrake control unit (AACU) does not receive a valid signal from the solenoid pressure switch of the autobrake control valve module.

B. Possible Causes

- (1) The solenoid pressure switch on the autobrake control valve module.
(2) Antiskid/autobrake control unit (AACU), M162
(3) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
(2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
(a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
(b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the solenoid pressure switch:
(a) Prepare to supply pressure through the autobrake control module:
1) Make sure the two thrust levers are in the IDLE position.
2) Make sure the landing gear control lever is in the DOWN position.
3) Make sure the spoilers are stowed.
4) Make sure the Right and Left ADIRSs are in the NAV mode.
a) Align the ADIRS. Do this task: Air Data Inertial Reference System - Alignment from the ISDU, AMM TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, AMM TASK 34-21-00-820-801.
5) Make sure the tires have chocks installed around them.
6) Release the parking brake.

EFFECTIVITY
SIA ALL

32-42 TASK 809

D633A103-SIA

Page 232
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- 7) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- 8) Set the TEST SELECTOR switch on the antiskid control unit to A/B.
- (b) Disconnect the connector D2572 from the solenoid pressure switch.
- (c) Prepare to check the continuity between pin 1 and pin 2 of the solenoid pressure switch within 10 seconds of enabling the control module in the steps that follow.
- (d) Do the steps that follow for autobrake selector position "MAX" to supply pressure through the autobrake control module.
 - 1) Set the autobrake selector switch on the P2-2 panel to "MAX".
 - 2) Push and hold the ENABLE/VERIFY button on the antiskid control unit.
 - 3) While you hold the ENABLE/VERIFY button, push and hold the VERIFY button on the antiskid control unit.
 - 4) Release the ENABLE/VERIFY button and the VERIFY button at the same time.

NOTE: The antiskid control unit display will show BRK A/B4 during the test. The AUTOBRAKE DISARM light on the P2-2 panel will come on at the end of this test.
- (e) Make sure there is continuity between pin 1 and pin 2 of the solenoid pressure switch.

NOTE: The control module will supply 3000 psi to the brake for approximately 10 seconds.
- (f) Set the autobrake selector switch on the P2-2 panel to "OFF".
- (g) Set the autobrake selector switch on the antiskid control unit to NORM
- (h) Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (i) If there is not continuity between pin 1 and pin 2 of the solenoid pressure switch, then do these steps:
 - 1) Replace the solenoid pressure switch. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (j) If there is continuity between pin 1 and pin 2 of the solenoid pressure switch, then continue.
- (2) Do this check of the wiring:
 - (a) Disconnect electrical connector D2572 from the solenoid pressure switch.

EFFECTIVITY
SIA ALL

32-42 TASK 809

D633A103-SIA

Page 233
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (c) In the table below, find the electrical connector and the pin for the solenoid pressure switch:

AACU CONNECTOR D1040B	SERVO VALVE PRESSURE SWITCH CONNECTOR D2572
pin D4	pin 1

- (d) Do a wiring check between pin D4 of connector D1040B at the E1-3 shelf and pin 1 of the connector for the solenoid pressure switch.
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the solenoid pressure switch.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector to the solenoid pressure switch.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

———— **END OF TASK** ————

810. Autobrake Control Valve Module - Servo Valve Pressure Switch Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) CNTLP SW
- (2) The possible cause of message CNTLP SW is the servo valve pressure switch indicates low pressure (<1000 psi).
- (3) The antiskid/autobrake control unit (AACU) does not receive a valid signal from the servo valve of the autobrake control valve module.

B. Possible Causes

- (1) The servo valve of the autobrake control valve module.
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

EFFECTIVITY
SIA ALL

32-42 TASKS 809-810



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
(2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
- (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Replace the servo valve pressure switch. These are the tasks:
- Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
- (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (2) Do this check of the wiring:
- (a) Disconnect electrical connector D2576 from the servo valve pressure switch.
- (b) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (c) In the table below, find the electrical connector and the pins for the servo valve pressure switch:

Table 208

AACU CONNECTOR	AACU CONNECOR PIN NUMBER	SERVO VALVE PRESSURE SWITCH CONNECTOR PIN NUMBER	SERVO VALVE PRESSURE SWITCH CONNECTOR
D1040A	pin C7	pin 3	D2576
D1040B	pin A10	pin 2	

- (d) Do a wiring check between the pins of connector D1040B or D1040A at the E1-3 shelf and the pins of the connector for the servo valve pressure switch.

EFFECTIVITY
SIA ALL

32-42 TASK 810

D633A103-SIA

Page 235
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the servo valve pressure switch.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector D2576 to the servo valve pressure switch.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

END OF TASK

811. Parking Brake Shutoff Valve Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) PARKBRK
- (2) The possible cause of message PARKBRK is the antiskid/autobrake control unit (AACU) does not receive a valid signal for more than two seconds.

B. Possible Causes

- (1) Parking brake valve, V11
- (2) Wiring problem
- (3) Park brake close sense relay, R613
- (4) Antiskid/autobrake control unit (AACU), M162

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-44-11)
- (2) (WDM 32-44-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then do the steps that follow:

EFFECTIVITY
SIA ALL

32-42 TASKS 810-811



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) Fully push the brake pedals and set the parking brake.
 - 2) Do a check for the maintenance message PARKBRK on the AACU.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - 4) Release the parking brake.
- (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the ground wire for the parking brake valve:
 - (a) Disconnect connector D928 from the parking brake valve, V11.
 - (b) Do a continuity check from pin 9 of connector D928 to structure ground.
 - (c) If there is no continuity at pin 9 of connector D928, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector D928.
 - 3) Do the Repair Confirmation at the end of this task.
 - (d) If there is continuity at pin 9 of connector D928, then continue.
- (2) Do these checks of the parking brake valve, V11:
 - (a) Do a continuity check between pin 8 and pin 9 on the parking brake valve, V11.
 - (b) If there is no continuity between pin 8 and pin 9 on the parking brake valve, V11, then do these steps:
 - 1) Replace the parking brake valve, V11. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If there is continuity between pin 8 and pin 9 on the parking brake valve, V11, then continue.
 - 1) Re-connect the connector D928.
 - 2) Fully push the brake pedals and set the parking brake.
 - (d) Disconnect connector D928 from the parking brake valve, V11.
 - (e) Do a continuity check between pin 9 and pin 10 on the parking brake valve, V11.
 - (f) If there is no continuity between pin 9 and pin 10 on the parking brake valve, V11, then do these steps:
 - 1) Replace the parking brake valve, V11. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (g) If there is continuity between pin 9 and pin 10 on the parking brake valve, V11, then continue.
- (3) Do this wiring check:
 - (a) Disconnect connector D928 from the parking brake valve, V11 and connector D11154 from the park brake close sense relay, R613.

EFFECTIVITY
SIA ALL

32-42 TASK 811

D633A103-SIA

Page 237
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) Do a wiring check between these pins of connector D928 at the parking brake valve, V11 and the pins of connector D11154 at the park brake close sense relay, R613:

D928	D11154
pin 10	pin 4
pin 8	pin 3
pin 4	pin 12

- (c) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector D928 and connector D11154.
 - 3) Do the Repair Confirmation at the end of this task.
- (d) If you do not find a problem with the wiring, then continue.
- 1) Re-connect connector D928.
- (e) Do a continuity check from pin 6 of connector D11154 to structure ground.
- (f) If there is no continuity at pin 6 of connector D11154, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector D11154.
 - 3) Do the Repair Confirmation at the end of this task.
- (g) If there is continuity at pin 6 of connector D11154, then continue.
- (h) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (i) Do the following wiring check:

Park Brake Close Sense Relay R613 D11154	AACU M162 D1040A
pin 5	D15

- (j) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 3) Re-connect connector D11154.
 - 4) Do the Repair Confirmation at the end of this task.
- (k) If you do not find a problem with the wiring, then continue.
- 1) Re-connect connector D11154.
- (l) Fully push the brake pedals and set the parking brake.
- (m) Do a continuity check from pin D15 of connector D1040A to structure ground.
- (n) If there is no continuity at pin D15 of connector D1040A, then do these steps:
- 1) Release the parking brake.

EFFECTIVITY
SIA ALL

D633A103-SIA

32-42 TASK 811

Page 238
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 2) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- 3) Re-connect connector D1040A.
- 4) Replace the park brake close sense relay, R613.
- 5) Do the Repair Confirmation at the end of this task.
- (o) If there is continuity at pin D15 of connector D1040A, then continue.
 - 1) Release the parking brake.
- (4) Replace the antiskid/autobrake control unit (AACU), M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then do these steps:
 - 1) Fully push the brake pedals and set the parking brake.
 - 2) Check for the maintenance message PARKBRK on the AACU.
 - 3) If a maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - 4) Release the parking brake.

————— END OF TASK —————

812. Landing Gear Lever Switch Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) GEARSW1
 - (b) GEARSW2
- (2) The possible cause of messages GEARSW1 and GEARSW2 is the antiskid/autobrake control unit (AACU) finds the gear lever not down during system test.

B. Possible Causes

- (1) Landing gear lever switch, S3
- (2) Landing gear lever switch, S4
- (3) Wiring problem
- (4) Antiskid/autobrake control unit (AACU), M162

C. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

D. Initial Evaluation

- (1) Make sure the landing gear control lever is in the DOWN position.
- (2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

EFFECTIVITY
SIA ALL

32-42 TASKS 811-812

D633A103-SIA

Page 239
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
- (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

- (1) Do this check of the landing gear lever switch module, M1952:
 - (a) Disconnect connector D11990 from the landing gear lever switch module, M1952.
 - (b) Make sure the landing gear control lever is in the DOWN position.
 - (c) For the landing gear lever switch, S3, do these steps:
 - 1) Do a continuity check between pin 14 and pin 16 of the landing gear lever switch module.
 - 2) Move the landing gear control lever to the UP position.
 - 3) Do a check for an open circuit between pin 14 and pin 16 of the landing gear lever switch module.
 - (d) For the landing gear lever switch, S4, do these steps:
 - 1) Do a continuity check between pin 11 and pin 13 of the landing gear lever switch module.
 - 2) Move the landing gear control lever to the UP position.
 - 3) Do a check for an open circuit between pin 11 and pin 13 of the landing gear lever switch module.
 - (e) If you find a problem with the landing gear lever switch module, then do these steps:
 - 1) Replace the landing gear lever switch module, M1952. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - 2) Re-connect connector D11990.
 - 3) Make sure the landing gear control lever is in the DOWN position.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (f) If you do not find a problem with the landing gear switch module, then continue.
- (2) Do these checks of the wiring:
 - (a) Do a continuity check between pin 14 of connector D11990 at the center aisle panel, P2-3, and structure ground.
 - (b) Do a continuity check between pin 11 of connector D11990 at the center aisle panel, P2-3, and structure ground.
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D11990.
 - 3) Make sure the landing gear control lever is in the DOWN position.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

EFFECTIVITY
SIA ALL

32-42 TASK 812

D633A103-SIA

Page 240
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (f) Do a continuity check between these pins of connector D1040A at the antiskid/autobrake control unit and connector D11990 at the landing gear lever switch module, M1952:

D11990	D1040A
pin 13	pin D1

D11990	D1040B
pin 16	pin D1

- (g) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 3) Re-connect connector D11990.
 - 4) Make sure the landing gear control lever is in the DOWN position.
 - 5) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 6) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (h) If you do not find problem with the wiring, then continue.
- 1) Re-connect connector D11990.
- (3) Replace the antiskid/autobrake control unit (AACU), M162. These are the tasks:
- Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

————— **END OF TASK** —————

813. Thrust Lever Switch Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
- (a) PWR A/B
NOTE: This message will appear when the autobrake system is deactivated. This is considered normal operation.
 - (b) THR L 1
 - (c) THR R 1
 - (d) THR L 2

EFFECTIVITY
SIA ALL

32-42 TASKS 812-813

D633A103-SIA

Page 241
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (e) THR R 2
- (f) THR SW
- (2) The possible cause of the messages is the antiskid/autobrake control unit (AACU) finds the thrust lever not retarded during system test.

B. Possible Causes

- (1) Right thrust lever switch, S2
- (2) Right thrust lever switch, S3
- (3) Left thrust lever switch, S2
- (4) Left thrust lever switch, S3
- (5) Wiring problem
- (6) Antiskid/autobrake control unit (AACU), M162

C. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

D. Initial Evaluation

- (1) Make sure the thrust levers are in the IDLE position.
- (2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If a maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

- (1) Do this check of the autothrottle switch packs, M1766 and M1767:
 - (a) Disconnect connector D11130 from the autothrottle switch pack, M1766.
 - (b) Disconnect connector D11134 from the autothrottle switch pack, M1767.
 - (c) Make sure the thrust levers are in the IDLE position.
 - (d) Do a continuity check between these pins of the autothrottle switch packs.

AUTOTHROTTLE SWITCH PACK #1

L ENG,	M1766
-	-
pin 2	pin 3
pin 5	pin 6

AUTOTHROTTLE SWITCH PACK #2

R ENG,	M1767
-	-
pin 2	pin 3
pin 5	pin 6

- (e) Move the thrust levers to greater than 44 degrees advanced.
- (f) Do a continuity check between these pins of the autothrottle switch packs.

EFFECTIVITY
SIA ALL

32-42 TASK 813



**737-600/700/800/900
FAULT ISOLATION MANUAL**

AUTOTHROTTLE SWITCH PACK #1

L ENG,	M1766
-	-
pin 1	pin 2
pin 4	pin 5

AUTOTHROTTLE SWITCH PACK #2

R ENG,	M1767
-	-
pin 1	pin 2
pin 4	pin 5

- (g) Move the thrust levers to the IDLE position.
- (h) If you find a problem with a autothrottle switch pack, then do these steps:
 - 1) Replace the thrust lever switch, S2 or S3, from the switch pack, M1767, or thrust lever switch, S2 or S3, from the switch pack, M1766.
 - 2) Re-connect connector D11130 to the autothrottle switch pack, M1766.
 - 3) Re-connect connector D11134 to the autothrottle switch pack, M1767.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (i) If you do not find a problem with a autothrottle switch pack, then continue.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Do a continuity check between the pins of connector D1040A and D1040B at the AACU, and the pins of connector D11130 at switch pack, M1766 and connector D11134 at switch pack, M1767.

D11134	D1040A
pin 2	pin A7

D11130	D1040A
pin 2	pin A7

D11134	D1040B
pin 3	pin D6
pin 5	pin B9
pin 6	pin A2

EFFECTIVITY
SIA ALL

32-42 TASK 813

D633A103-SIA

Page 243
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

D11130

pin 3 pin A4
pin 5 pin B9
pin 6 pin A7

D1040B

- (c) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (d) Re-connect connector D11130 to the autothrottle switch pack, M1766.
- (e) Re-connect connector D11134 to the autothrottle switch pack, M1767.
- (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (g) If you do not find a problem with the wiring, then continue.
- (3) Replace the antiskid/autobrake control unit (AACU), M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

————— **END OF TASK** —————

816. Brakes Grab, Drag, or Lock - Fault Isolation

A. Description

- (1) SDS 32-41-00

B. Possible Causes

- (1) Brake quick disconnect not fully seated
- (2) Binding or friction in brake pedal linkage
- (3) Binding or friction in the brake metering valve linkage or aft brake cable quadrant
- (4) Brake Fuse damaged
- (5) Antiskid valve damaged
- (6) Binding or friction in the brake metering valve control quadrant
- (7) Brake adjustment
- (8) Brake metering valve
- (9) Binding of the brake.

C. Related Data

- (1) SSM 32-40-00

EFFECTIVITY
SIA ALL

32-42 TASKS 813-816

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 244
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

D. Initial Evaluation

- (1) Monitor the brake pistons while you apply and release the brakes.
 - (a) Fully push and hold the captain's brake pedals.
 - (b) Release the captain's brake pedals.
 - (c) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - (d) If all of the brakes operated correctly, there was an intermittent fault.
 - (e) If one of the brakes does not operate correctly, it is usually the result of a low hydraulic flow.
 - (f) If two brakes on the same landing gear do not operate correctly, it is usually an out of rig brake system, a defective brake metering valve, or binding in the brake system.
- NOTE: It is possible that if two brakes on the same landing gear do not operate correctly, each did not operate independently.

E. Fault Isolation Procedure

- (1) If one of the brakes does not operate correctly, make sure that the brake quick-disconnect is fully installed.
 - (a) Do the "Brake Disconnect Installation Test" (AMM PAGEBLOCK 32-41-11/401).
 - (b) If there is a leak, then replace the brake disconnect. These are the tasks:
 - Brake Disconnect Removal, AMM TASK 32-41-11-000-801
 - Brake Disconnect Installation, AMM TASK 32-41-11-400-801
 - (c) Monitor the brake pistons while you apply and release the brakes.
 - 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - 4) If the brakes operate correctly, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - 5) If the brakes do not operate correctly, then continue.
- (2) If one of the brakes does not operate correctly, then replace the brake fuse. These are the tasks:
 - Brake Hydraulic Fuse (Normal Brake System) - Removal, AMM TASK 32-41-72-000-801
 - Brake Hydraulic Fuse (Normal Brake System) - Installation, AMM TASK 32-41-72-400-801
 - (a) Monitor the brake pistons while you apply and release the brakes.
 - 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - 4) If the brakes operate correctly, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - 5) If the brakes do not operate correctly, then continue.

EFFECTIVITY
SIA ALL

32-42 TASK 816

D633A103-SIA

Page 245
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (3) If one of the brakes does not operate correctly, then replace the antiskid valve. These are the tasks:
- Antiskid Valve Removal, AMM TASK 32-42-31-000-801
 - Antiskid Valve Installation, AMM TASK 32-42-31-400-801
- (a) Monitor the brake pistons while you apply and release the brakes.
- 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - 4) If the brakes operate correctly, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - 5) If the brakes do not operate correctly, then continue.
- (4) If two brakes on the same landing gear do not operate correctly, then inspect the brake metering valve control quadrant as follows:
- (a) These are the tasks to get access to the brake metering valve control quadrant:
- Brake Metering Valve Control Quadrant Removal, AMM TASK 32-41-21-000-801
 - Brake Metering Valve Control Quadrant Installation, AMM TASK 32-41-21-400-801
- (b) Make sure that there is no corrosion, damage or unwanted materials.
- (c) Make sure that there is sufficient lubricant.
- (d) Monitor the brake pistons while you apply and release the brakes.
- 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - 4) If the brakes operate correctly, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - 5) If the brakes do not operate correctly, then continue.
- (5) If two brakes on the same landing gear do not operate correctly, then adjust the hydraulic brake system. Do this task: Hydraulic Brake System - Adjustment, AMM TASK 32-41-00-820-801.
- (a) Make sure that these have no binding:
- 1) Brake pedal linkage.
 - 2) The aft cable quadrant.
 - 3) The brake metering valve linkage.
- (b) Monitor the brake pistons while you apply and release the brakes.
- 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.

EFFECTIVITY
SIA ALL

32-42 TASK 816

D633A103-SIA

Page 246
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 4) If the brakes operate correctly, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
- 5) If the brakes do not operate correctly, then continue.
- (6) If two brakes on the same landing gear do not operate correctly, then replace the brake metering valve. These are the tasks:
 - Brake Metering Valve Removal, AMM TASK 32-41-31-000-801
 - Brake Metering Valve Installation, AMM TASK 32-41-31-400-801
 - (a) Monitor the brake pistons while you apply and release the brakes.
 - 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
- (7) If the brakes are binding, do the following steps:
 - (a) Inspect the Main Landing Gear Brakes:
 - Do this task: Main Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-11-000-801.
 - Do this task: Main Landing Gear Brake Inspection (Wheel Removed from the Airplane), AMM TASK 32-41-41-700-803.
 - (b) If the brake inspection is not satisfactory, then replace the Main Landing Gear Brake. These are the tasks:
 - Main Landing Gear Brake Removal, AMM TASK 32-41-41-000-801.
 - Main Landing Gear Brake Installation, AMM TASK 32-41-41-400-801.

————— **END OF TASK** —————

817. Brakes Pull to the Left or Right - Fault Isolation

A. Fault Isolation Procedure

- (1) Do this task: Brakes Grab, Drag, or Lock - Fault Isolation, 32-42 TASK 816.
 - (a) If the brakes do not operate correctly, then continue.
- (2) Do a check of the landing gear tires pressure:
 - (a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - (b) If the landing gear tires pressure are not satisfactory, then do these steps:
 - 1) Do this task: Add Nitrogen or Air to the Tire, AMM TASK 12-15-51-610-802.
 - 2) If the brakes operate correctly on subsequent flights, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
- (3) Inspect all transducer drive components on each wheel and hubcap if there is a pulling condition during braking.

————— **END OF TASK** —————

EFFECTIVITY
SIA ALL

32-42 TASKS 816-817

D633A103-SIA

Page 247
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

820. Tire Damage or Worn - Fault Isolation

A. Fault Isolation Procedure

- (1) If the tire burst or is flat spotted, do this task:
 - Tire Tread Loss or Tire Burst Conditional Inspection, AMM TASK 05-51-54-210-801.
 - Flat Spotted Tires Conditional Inspection, AMM TASK 05-51-16-210-801
 - Antiskid/Autobrake Control Unit Operational Test, AMM TASK 32-42-00-720-801.
 - Antiskid Valve Operational Test, AMM TASK 32-42-00-720-803.
 - Transducer Functional Test, AMM TASK 32-42-00-710-801.
- (2) Do this task: Tires - Inspection, AMM TASK 32-45-00-700-803.

———— **END OF TASK** ————

821. Autobrake Selector Switch Problem - Fault Isolation

A. Description

- (1) This task is for this Maintenance Message:
 - (a) A/B SEL
- (2) The Autobrake Selector Switch indicates more than one position selected.

B. Possible Causes

- (1) Autobrake Selector Switch, S4
- (2) Wiring
- (3) AACU, M162

C. Related Data

- (1) SSM 32-42-11
- (2) WDM 32-42-11

D. Initial Evaluation

- (1) For each position of the Autobrake Selector Switch, except OFF, do this task:
Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
NOTE: The BITE test can be performed with the Selector Switch in any position except OFF. If you do the test in each possible position, you can detect a problem in the switch itself.
 - (a) If the Maintenance Message does not show, then there was an intermittent problem.
 - (b) If the Maintenance Message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

- (1) If the Maintenance Message does not show in a selector position, but does show in other selector positions, then do these steps:
 - (a) Replace the Autobrake Selector Switch, S4.
 - (b) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 1) If the Maintenance Message does not show, then you corrected the problem.
 - 2) If the Maintenance Message shows, then continue.
- (2) Do this check of the Wiring (WDM 32-42-11):
 - (a) Remove the AACU. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.

EFFECTIVITY
SIA ALL

32-42 TASKS 820-821

D633A103-SIA

Page 248
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) Disconnect connector D333 from the P2-2 panel.
- (c) Do a Wiring Check between these pins of Connector D1040B at E1-3 shelf and Connector D333 at the Autobrake Selector Switch, S4.

D1040B	D333
pin D7	pin 32
pin D8	pin 33
pin D12	pin 36
pin D9	pin 34
pin D10	pin 35
pin C10	pin 37

D333
pin 38 GD201B-DC

- (d) If you find a problem with the Wiring, then do these steps:
 - 1) Repair the Wiring.
 - 2) Re-connect Connector D333.
 - 3) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - a) If the Maintenance Message does not show, then you corrected the problem.
- (e) If you do not find a problem with the Wiring, then continue.
 - 1) Re-connect Connector D333.
- (3) Install a new AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do the Antiskid/Autobrake Control Unit Operational Test, AMM TASK 32-42-00-720-801.
 - 1) If the Maintenance Message does not show during the Antiskid/Autobrake Operational Test, then you corrected the problem.

————— **END OF TASK** —————

822. Brake Pressure Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) PRESL
 - (b) PRESR
- (2) The antiskid/autobrake control unit (AACU) receives high brake pressure.

B. Possible Causes

- (1) Brake pedal switch, S762 or S763
- (2) Wiring
- (3) Antiskid/autobrake control unit (AACU), M162

EFFECTIVITY
SIA ALL

32-42 TASKS 821-822

D633A103-SIA

Page 249
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
(2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
(a) If the maintenance message does not show, then there was an intermittent fault.
(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Replace the applicable brake pedal switch.
(a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
(b) If the maintenance message does not show, then you corrected the fault.
(c) If the maintenance message shows, then continue.
(2) Do this check of the wiring:
(a) Remove the antiskid/autobrake control unit, M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
(b) Find the connector and the pair of pins for the applicable brake pedal switch:

LEFT SWITCH EQUIPMENT NUMBER S762

SWITCH	AACU
CONNECTOR	CONNECTOR
D2564	D1040B
pin 2	pin B8
pin 3	pin A9

RIGHT SWITCH EQUIPMENT NUMBER S763

SWITCH	AACU
CONNECTOR	CONNECTOR
D2566	D1040A
pin 2	pin A10
pin 3	pin B10

- (c) Disconnect the connector from the applicable brake pedal switch.
(d) Do a wiring check between the pins of the connector at the E1-3 shelf and the connector at the applicable brake pedal switch.
(e) If you find a problem with the wiring, then do these steps:
1) Repair the wiring.
2) Re-connect the connector to the applicable brake pressure switch.

EFFECTIVITY
SIA ALL

32-42 TASK 822

D633A103-SIA

Page 250
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- 5) If the maintenance message does not show, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect the connector to the applicable brake pressure switch.
- (3) Install a new AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.

———— **END OF TASK** ————

823. Air/Ground System Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) A/G 1
 - (b) A/G 2
 - (c) A/G SW
- (2) The antiskid/autobrake control unit (AACU) receives air mode signal from the air/ground system.

B. Possible Causes

- (1) Wiring
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance messages A/G 1 and A/G 2 do not show, then there was an intermittent fault.
 - (b) If the maintenance message A/G 1 or A/G 2 shows, then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-42 TASKS 822-823

D633A103-SIA

Page 251
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Fault Isolation Procedure

- (1) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit (AACU), M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Find the applicable air/ground system connector and pair of pins for the proximity switch electronics unit (PSEU), M2061:

AIR/GROUND SYSTEM 1

PSEU CONNECTOR D11142	AACU CONNECTOR D1040B
pin 48	pin C8
pin 49	pin A8

AIR/GROUND SYSTEM 2

PSEU CONNECTOR D11140	AACU CONNECTOR D1040A
pin 48	pin C8
pin 49	pin A8

- (c) Disconnect the applicable connector from the PSEU, M2061.
 - (d) Do a wiring check between the pins of the connector at the E1-3 shelf and the applicable connector at the PSEU, M2061.
 - (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the applicable connector.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show, then you corrected the fault.
 - (f) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect the applicable connector.
 - (2) Install a new AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
 - (3) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

EFFECTIVITY
SIA ALL

32-42 TASK 823

D633A103-SIA

Page 252
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

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

————— **END OF TASK** —————

824. Left ADIRU Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
- (a) ADIRU L
- (2) The antiskid/autobrake control unit (AACU) does not receive valid signal from the left air data inertial reference unit (ADIRU).

B. Possible Causes

- (1) Wiring
- (2) Air data inertial reference unit (ADIRU), M1749
- (3) Antiskid/autobrake control unit, M162

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (a) If the maintenance message does not show, then there was an intermittent fault.
- (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the wiring:
- (a) Remove the antiskid/autobrake control unit, M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (b) Remove the left air data inertial reference unit (ADIRU), M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.
- (c) Do a wiring check between these pins of connector D1040A at E1-3 shelf and connector D3687B at the E5-2 shelf:

D1040A		D3687B
pin D11	.....	pin C10
pin D12	.....	pin C11

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

EFFECTIVITY
SIA ALL

32-42 TASKS 823-824

D633A103-SIA

Page 253
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 2) Re-install the left ADIRU, M1749. To install it, do this task: Air Data Inertial Reference Unit - Installation, AMM TASK 34-21-01-400-801.
- 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- 5) If the maintenance message does not show, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
 - 1) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (2) Install a new left ADIRU, M1749. To install it, do this task: Air Data Inertial Reference Unit - Installation, AMM TASK 34-21-01-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
- (3) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.

————— **END OF TASK** —————

825. Right ADIRU Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) ADIRU R
- (2) The antiskid/autobrake control unit (AACU) does not receive valid signal from the right air data inertial reference unit (ADIRU).

B. Possible Causes

- (1) Wiring
- (2) Air data inertial reference unit (ADIRU), M1752
- (3) Antiskid/autobrake control unit, M162

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

EFFECTIVITY
SIA ALL

32-42 TASKS 824-825

D633A103-SIA

Page 254
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Remove the right air data inertial reference unit (ADIRU), M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.
 - (c) Do a wiring check between these pins of connector D1040B at E1-3 shelf and connector D3693B at the E5-2 shelf:

D1040B		D3693B
pin D13	.....	pin C10
pin D14	.....	pin C11

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the right ADIRU, M1752. To install it, do this task: Air Data Inertial Reference Unit - Installation, AMM TASK 34-21-01-400-801.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show, then you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - 1) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (2) Install a new right ADIRU, M1752. To install it, do this task: Air Data Inertial Reference Unit - Installation, AMM TASK 34-21-01-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
 - (3) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-42 TASK 825

D633A103-SIA

Page 255
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

826. Power for Autobrake or AACU BITE Problem - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) PWR A/B

NOTE: This message will appear when the autobrake system is deactivated, this is considered normal operation.

(b) PWR BITE

(2) The Antiskid/Autobrake Control Unit (AACU) does not receive power for autobrake and BITE functions.

B. Possible Causes

(1) Antiskid/Autobrake Control Unit (AACU), M162

(2) Circuit breakers C583 and C1345

(3) Right thrust lever switch, S2

(4) Right thrust lever switch, S3

(5) Left thrust lever switch, S2

(6) Left thrust lever switch, S3

(7) Autobrake selector switch, S4.

(8) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

(1) (SSM 32-42-11)

(2) (WDM 32-42-11)

E. Initial Evaluation

(1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

(a) If the maintenance message does not show, then there was an intermittent fault.

(b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

(1) Do this check of the power wiring:

(a) Remove the Antiskid/Autobrake Control Unit (AACU), M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.

EFFECTIVITY
SIA ALL

32-42 TASK 826

D633A103-SIA

Page 256
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- (c) Do a check for 22-30V DC from pin A11 and C9 of the connector D1040B at E1-3 shelf to structure ground (WDM 32-42-11).
- (d) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- (e) If there is not 22-30V DC at pin A11 and C9, then do these steps:

- 1) Open the P6-3 load control center panel.
- 2) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- 3) Do a check for 22-30V DC from the load terminals of circuit breakers C583 and C1345 to structure ground.
- 4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- 5) If there is not 22-30V DC at the load terminals, then do these steps:
 - a) Replace one or both of the following circuit breakers (WDM 32-42-11):
<1> These are the circuit breakers:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- b) Re-install the antiskid/autobrake control unit, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - c) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - d) If the maintenance message does not show, then you corrected the fault.
- 6) If there is 22-30V DC at the load terminals, then do these steps:

EFFECTIVITY
SIA ALL

32-42 TASK 826

D633A103-SIA

Page 257
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- a) Repair the wiring between pin A11 of connector D1040B at the E1-3 shelf and the load terminal C583 at the panel P6.
- b) Repair the wiring between pin C9 of connector D1040B at the E1-3 shelf and the load terminal C1345 at the panel P6.
- c) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- d) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- e) If the maintenance message does not show, then you corrected the fault.
- (f) If there is 22-30V DC at the pin A11 or C9 of connector D1040B, then continue.
- (2) Check the thrust lever switches. Do this task: Thrust Lever Switch Problem - Fault Isolation, 32-42 TASK 813.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
- (4) Check the autobrake selector switch S4. Do this task: Autobrake Selector Switch Problem - Fault Isolation, 32-42 TASK 821.
 - (a) If the maintenance message does not show, then you corrected the fault.

————— **END OF TASK** —————

827. Speed Brake Lever Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) SPLRHDL
- (2) The antiskid/autobrake control unit (AACU) receives signal that the speed brake lever is not stowed.

B. Possible Causes

- (1) Wiring
- (2) Speed brake arming switch, S276
- (3) Antiskid/autobrake control unit (AACU), M162

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

EFFECTIVITY
SIA ALL

32-42 TASKS 826-827

D633A103-SIA

Page 258
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit (AACU), M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Disconnect connector D10199 from the speed brake arming switch, S276.
 - (c) Do a wiring check between these pins of connector D1040A and D1040B at E1-3 shelf and connector D10199 at the speed brake arming switch, S276:

D1040A	D10199
pin B7	pin 8

D1040B	D10199
pin C11	pin 2

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D10199.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show, then you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect connector D10199.
 - 2) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (2) Do the check of the speed brake arming switch:
 - (a) Using the Ohmmeter, monitor between D1040A pin B7 and D1040B pin C11.
 - (b) If the impedance is not greater than 20 Mohms when the speedbrake handle is in the stowed position, or not less than 10 ohms when the speedbrake handle is in ARMED position, then replace the speedbrake arming switch, S276. These are the tasks:
 - Speed Brake Armed Switch and Speed Brake Handle Position Switch Removal, AMM TASK 27-62-34-000-801
 - Speed Brake Armed Switch and Speed Brake Handle Position Switch Installation, AMM TASK 27-62-34-400-801

EFFECTIVITY
SIA ALL

32-42 TASK 827

D633A103-SIA

Page 259
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (c) If the maintenance message does not show, then you corrected the fault.
- (d) If the maintenance message shows, then continue.
- (3) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (b) If the maintenance message does not show, then you corrected the fault.

———— **END OF TASK** ————

828. AUTOBRAKE DISARM Light is ON - Fault Isolation

A. Description

- (1) The AUTOBRAKE DISARM light comes ON when these conditions occur:
 - (a) When the Autobrake Selector Switch is in the OFF position:
 - 1) When the Solenoid Pressure Switch on the autobrake valve module indicates autobrake valve module pressure is greater than 1000 psi.
 - (b) When the Autobrake Selector Switch is in position 1,2,3, or MAX:
 - 1) During autobrake arming, the AUTOBRAKE DISARM light will come ON momentarily when an autobrake position is selected.
 - 2) During autobrake arming, if any of these conditions exist, the AUTOBRAKE DISARM light will remain ON:
 - a) Both air/ground signals do not indicate air -AND- all four Thrust Lever Switches are not retarded -AND- more than 3 seconds elapsed since both air ground signals indicated air.
 - b) Either Left or Right Brake Metered Pressure Switches does not indicate low pressure.
 - c) An autobrake system fault is detected.
 - d) An antiskid fault that illuminates the ANTISKID INOP light is detected.
 - e) ADIRU input not valid.
 - 3) During autobrake disarming, if any of these conditions exist, the AUTOBRAKE DISARM light will remain ON:
 - a) Any of the previous "arming" conditions exist.
 - b) The speedbrakes are stowed after they have been deployed when either air/ground signal indicates ground.
 - c) Any of the four Thrust Lever Switches indicate advanced.
 - (c) When the Autobrake Selector Switch is in the RTO position:
 - 1) During RTO autobrake arming, the AUTOBRAKE DISARM light will come ON momentarily when the RTO position is selected.
 - 2) During RTO autobrake arming, if any of these conditions exist, the AUTOBRAKE DISARM light will remain ON:

EFFECTIVITY
SIA ALL

32-42 TASKS 827-828

D633A103-SIA

Page 260
Oct 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- a) Less than 2 seconds elapsed since the previous selection of RTO.
NOTE: More than 2 seconds is needed to complete the initialization check.
 - b) Any of the four Thrust Lever Switches is not retarded when RTO is selected.
 - c) The Antiskid/Autobrake Control Unit (AACU) indicates the average wheel speed is greater than 60 knots.
 - d) Both air/ground signals do not indicate ground.
 - e) An autobrake system fault is detected.
 - f) An antiskid fault that illuminates the ANTISKID INOP light is detected.
- 3) During RTO autobrake disarming, if any of these conditions exist, the AUTOBRAKE DISARM light will remain ON:
- a) If the Autobrake Selector Switch is not moved to OFF after lift off, then either air/ground signal indicates ground on the subsequent landing.
- 4) At the initiation of RTO above 88 knots, if any of these conditions exist, the AUTOBRAKE DISARM light will remain ON:
- a) Either Left or Right Brake Metered Pressure Switches indicate high pressure.
 - b) The speedbrakes are stowed after they have been deployed when either air/ground signal indicates ground.
 - c) Any of the four Thrust Lever Switches indicate advanced.
 - d) An autobrake system fault is detected.
 - e) An antiskid fault that illuminates the ANTISKID INOP light is detected.
- (2) If the AUTOBRAKE DISARM light is ON when the Autobrake Selector Switch is not in the OFF position, you can turn the light off by moving the Autobrake Selector Switch to the OFF position.

B. Possible Causes

- (1) AUTOBRAKE DISARM light, L1
- (2) L (R) Autothrottle Switchpack, M1766 (M1767)
- (3) Solenoid Pressure Switch on the Autobrake Pressure Control Module, V122
- (4) Speedbrake Arming Switch, S276
- (5) L (R) Brake Pedal Switch, S762 (S763)
NOTE: The Brake Pressure Switch is also called the Brake Pedal Switch
- (6) Autobrake Disarm Relay, R1
- (7) Wiring
- (8) Antiskid/Autobrake Control Unit (AACU), M162

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

EFFECTIVITY
SIA ALL

32-42 TASK 828

D633A103-SIA

Page 261
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

(Continued)

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C00317	INDICATOR MASTER DIM SECT 5

D. Related Data

- (1) SSM 32-42-11
- (2) WDM 32-42-11

E. Initial Evaluation

- (1) Do this check of the AUTOBRAKE DISARM light:
 - (a) Make sure the Autobrake Selector Switch is in the OFF position.
 - 1) If the AUTOBRAKE DISARM light turns OFF when the Autobrake Selector Switch is moved to the OFF position, then the fault was intermittent or the Antiskid/Autobrake system detected a system fault.
 - a) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - b) If maintenance messages do not show, then there was an intermittent fault.
 - c) If maintenance messages show, then refer to the table at the end of the BITE Task to find the applicable Fault Isolation Tasks for the maintenance messages that show.
 - 2) If the AUTOBRAKE DISARM light stays ON when the Autobrake Selector Switch is moved to the OFF position, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the AUTOBRAKE DISARM light, L1:
 - (a) Push and release the AUTOBRAKE DISARM light, L1 to use the Press-to-Test Switch in the light.
 - (b) If the AUTOBRAKE DISARM light goes OFF, then do these steps:
 - 1) Replace the AUTOBRAKE DISARM light assembly, L1. This is the task: Indicator Light - Light Assembly Replacement, AMM TASK 33-18-00-960-802.
 - 2) Push and release the AUTOBRAKE DISARM light to use the Press-to-Test Switch in the light.
 - 3) Do the Repair Confirmation at the end of this task.
 - (c) If the AUTOBRAKE DISARM light remains ON, then continue.
- (2) Make sure that the Autothrottle Switchpack Thrust Lever Switches operate correctly.
 - (a) Compare all maintenance messages found in the autobrake non-volatile memory to the list in the Thrust Lever Switch Problem - Fault Isolation, 32-42 TASK 813.
 - (b) If necessary, do the Thrust Lever Switch Problem - Fault Isolation, 32-42 TASK 813.
 - (c) If operation of Autothrottle Switchpack Thrust Lever Switches S2 or S3 is intermittent, then replace the Autothrottle Switchpack Assembly, M1766 (M1767). These are the tasks:
 - Autothrottle Switchpack Assembly - Removal, AMM TASK 76-11-07-020-802-F00
 - Autothrottle Switchpack Assembly - Installation, AMM TASK 76-11-07-400-802-F00
 - (d) If operation of the Autothrottle Switchpack Thrust Lever Switches is satisfactory, then continue.

EFFECTIVITY
SIA ALL

32-42 TASK 828

D633A103-SIA

Page 262
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (3) Do this check of the Solenoid Pressure Switch on the Autobrake Pressure Control Module, V122:
- (a) Disconnect the electrical connector D2572 from the Solenoid Pressure Switch.
 - (b) If the AUTOBRAKE DISARM light goes OFF, then do these steps:
 - 1) Replace the Solenoid Pressure Switch on the Autobrake Pressure Control Module, V122. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - 2) Re-connect the connector D2572 to the Solenoid Pressure Switch.
 - 3) Do the Repair Confirmation at the end of this task.
 - (c) If the AUTOBRAKE DISARM light stays ON, then continue.
- (4) Do a check of the following switches (WDM 32-42-11):
- (a) Disconnect these connectors:
 - Connector D2564 at the L Brake Pedal Switch, S762
 - Connector D2566 at the R Brake Pedal Switch, S763
 - Connector D10199 at the Speedbrake Arming Switch, S276
 - (b) Do a wiring check between the switches and the Antiskid/Autobrake Control Unit, M162.

Speedbrake Arming Switch

M162	S276
D1040A	D10199
pin B7	pin 8
D1040B	D10199
pin C11	pin 2

L Brake Pedal Switch

M162	S762
D1040B	D2564
pin A9	pin 3
pin B8	pin 2

R Brake Pedal Switch

M162	S763
D1040A	D2566
pin B10	pin 3
pin A10	pin 2

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connectors.
 - c) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

EFFECTIVITY
SIA ALL

32-42 TASK 828

D633A103-SIA

Page 263
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then continue.
- (c) Replace the following switches (WDM 32-42-11):
 - Speedbrake Arming Switch, S276
 - L Brake Pedal Switch, S762
 - R Brake Pedal Switch, S763
 - 1) Re-connect the connectors.
 - 2) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) Do the Repair Confirmation at the end of this task.
- (5) Do a check of the wiring at the Center Instrument Panel, P2-2 (WDM 32-42-11):
 - (a) Remove the Center Instrument Panel, P2-2.
 - (b) Disconnect connector D331 from the Center Instrument Panel, P2-2.
 - (c) Make sure you do not have continuity at these pins:

P2-2 Panel	P2-2 Panel
D331	D331
pin 29	pin 24

 - 1) If there is continuity between pin 29 and pin 24 of connector D331, then do these steps:
 - a) Replace the Autobrake Disarm Relay, R1.
 - b) Re-connect connector D331.
 - c) Re-install the Center Instrument Panel, P2-2.
 - d) Do the Repair Confirmation at the end of this task.
 - 2) If there is no continuity between pin 29 and pin 24 of connector D331, then continue.
 - (d) Make sure these pins go to ground:

P2-2 Panel	P2-2 Panel
D331	D331
29	Ground
31	Ground

 - 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector D331.
 - c) Re-install the Center Instrument Panel, P2-2.
 - d) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then continue.
 - (e) Remove the Antiskid/Autobrake Control Unit (AACU), M162. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (f) Do a wiring check between these pins of connector D1040A on the AACU and connector D331 on the P2-2 panel.

EFFECTIVITY
SIA ALL

32-42 TASK 828

D633A103-SIA

Page 264
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

D1040A

pin D7 pin 24

D331

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector D331 to the Center Instrument Panel, P2-2.
 - c) Re-install the Center Instrument Panel, P2-2.
 - d) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - e) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then do these steps and continue:
 - a) Re-connect connector D331 to the Center Instrument Panel, P2-2.
 - b) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - c) Re-install the Center Instrument Panel, P2-2.
- (6) Do this check of the wiring between the AUTOBRAKE DISARM light and terminal block TB1303:
- (a) Remove the Center Instrument Panel, P2-2.
 - (b) Disconnect connector D339 from the Center Instrument Panel, P2-2.
 - (c) Do a wiring check between these pins on connector D339 at the P2-2 panel and terminal block TB1303 at STA E001-3 on the E1-3 shelf:

P2-2

D339

pin 9 term YB3

E1-3 Shelf

TB1303

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector D339.
 - c) Re-install the Center Instrument Panel, P2-2.
 - d) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then do these steps and continue:
 - a) Re-connect connector D339 to the Center Instrument Panel, P2-2.
 - b) Re-install the Center Instrument Panel, P2-2.
- (d) Disconnect the connector D2572 from the Solenoid Pressure Switch on the Autobrake Pressure Control Module, V122.
- (e) Do a wiring check between these pins on connector D2572 at the Solenoid Pressure Switch and terminal block TB1303 at STA E001-3 on the E1-3 shelf:

D2572

pin 1 term YB3

TB1303

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

EFFECTIVITY
SIA ALL

32-42 TASK 828

D633A103-SIA

Page 265
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- b) Re-connect the connector D2572 to the Solenoid Pressure Switch.
- c) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do this step and continue:
 - a) Re-connect the connector D2572 to the Solenoid Pressure Switch.
- (7) Replace the Antiskid/Autobrake Control Unit, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) If the AUTOBRAKE DISARM light goes OFF, then you corrected the problem.
- (2) If the AUTOBRAKE DISARM light stays ON, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

829. ANTISKID INOP Light is ON - Fault Isolation

A. Description

- (1) The ANTISKID INOP Light comes ON when these conditions occur:
 - (a) The Antiskid/Autobrake Control Unit (AACU) is not powered or not installed.
 - (b) Detection of an Antiskid System problem by the AACU
 - (c) The Alternate Brake Hydraulic System is pressurized (as determined by the Pressure Switch on the Alternate Brake Selector Valve) and a Antiskid System problem is detected (except for a normal valve or Parking Brake Disagree problem).

B. Possible Causes

- (1) ANTISKID INOP Light, L2
- (2) Wiring
- (3) Outboard Antiskid Sense Relay, R626
- (4) Inboard Antiskid Sense Relay, R628
- (5) Alternate Antiskid Sense Relay, R627
- (6) Antiskid/Autobrake Control Unit (AACU), M162
- (7) Parking Brake Shutoff Valve

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

EFFECTIVITY
SIA ALL

32-42 TASKS 828-829

D633A103-SIA

Page 266
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

D. Related Data

- (1) SSM 32-41-11
- (2) WDM 32-41-11

E. Initial Evaluation

- (1) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If maintenance messages show, refer to the table at the end of the BITE Task to find the applicable Fault Isolation Manual (FIM) Tasks for the maintenance messages that show.
 - (b) If maintenance messages do not show, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the ANTISKID INOP Light, L2:
 - (a) Push and release the ANTISKID INOP Light to use the Press-to-Test Switch in the light.
 - (b) If the ANTISKID INOP Light goes OFF, then do the steps that follow:
 - 1) Replace the ANTISKID INOP Light Assembly, L2. This is the task: Indicator Light - Light Assembly Replacement, AMM TASK 33-18-00-960-802.
 - 2) Push and release the ANTISKID INOP Light to use the Press-to-Test Switch in the light.
 - a) If the ANTISKID INOP Light comes ON and then goes OFF, then you corrected the problem.
 - b) If the ANTISKID INOP Light is still ON, continue.
 - (c) If the ANTISKID INOP Light is still ON, then continue.
- (2) Do this check of the wiring between the ANTISKID INOP Light and the Antiskid Sense Relays (WDM 32-41-11):
 - (a) Remove the Center Instrument Panel, P2-2.
 - (b) Disconnect connector D339 from the Center Instrument Panel, P2-2.
 - (c) Disconnect connector D11402 from the Outboard Antiskid Sense Relay, R626, in the J24 junction box at STA 259.
 - (d) Disconnect connector D11406 from the Inboard Antiskid Sense Relay, R628, in the J22 junction box at STA 259.
 - (e) Disconnect connector D11404 from the Alternate Antiskid Sense Relay, R627, in the J22 junction box at STA 259.
 - (f) Do a wiring check as follows:

**ANTISKID INOP
LT
D339**
pin 8

**OUTB A/S
SENSE RLY
D11402**
pin 5

**TERM BLOCK
TB32**
pin YA1

**INBD A/S
SENSE RLY
D11406**
pin 5

EFFECTIVITY
SIA ALL

32-42 TASK 829



**737-600/700/800/900
FAULT ISOLATION MANUAL**

TERM BLOCK	ALT A/S SENSE
TB32	RLY
D11404	D11404
pin YA1	pin 3

- (g) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect connector D339 to the P2-2 Panel.
 - 3) Re-connect connector D11402 to Relay, R626.
 - 4) Re-connect connector D11406 to Relay, R628.
 - 5) Re-connect connector D11404 to Relay, R627.
 - 6) Install the Center Instrument Panel, P2-2.
 - a) If the ANTISKID INOP Light goes OFF, then you corrected the problem.
 - b) If the ANTISKID INOP Light is still ON, continue.
- (h) If you do not find a problem with the wiring, then continue.
- (3) Replace the Antiskid/Autobrake Control Unit, M162. These are the tasks:
- Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- (a) If the ANTISKID INOP Light goes OFF, then you corrected the problem.
- (b) If the ANTISKID INOP Light is still ON, continue.
- (4) Do a visual inspection of the Parking Brake Shutoff Valve.
- (a) If you find signs of corrosion and/or contamination on the valve body, connector or output shaft, replace the valve. These are the tasks:
- Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
- (b) If the ANTISKID INOP Light goes OFF, then you corrected the problem.

———— **END OF TASK** ————

830. PARKING BRAKE Warning Light (External Power Receptacle Panel) Does Not Operate - Fault Isolation

A. Description

- (1) The PARKING BRAKE light, on the external power receptacle panel, comes on whenever the parking brake lever is set.

B. Possible Causes

- (1) PARKING BRAKE light, L1002
- (2) Parking brake switch, S100
- (3) Parking brake valve, V11
- (4) Wiring problem

EFFECTIVITY
SIA ALL

32-42 TASKS 829-830

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 268
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-44-11)
(2) (WDM 32-44-11)

E. Initial Evaluation

- (1) Fully push the brake pedals and set the parking brake.
(2) If the PARKING BRAKE light comes on, then there was an intermittent fault.
(3) If the PARKING BRAKE light does not come on, then do the Fault Isolation Procedure below.
(4) Release the parking brake.

F. Fault Isolation Procedure

- (1) Replace the PARKING BRAKE light, L1002.
(a) Fully push the brake pedals and set the parking brake.
(b) If the PARKING BRAKE light comes on, then you corrected the fault.
(c) Release the parking brake.
(d) If the PARKING BRAKE light does not come on, then continue.
(2) Do this voltage check at the parking brake valve, V11:
(a) Disconnect the connector D928 from the parking brake valve, V11.
(b) Do a check for 28v DC from pin 3 of connector D928 to structure ground.
(c) Fully push the brake pedals and set the parking brake.
(d) Do a check for 28v DC from pin 2 of connector D928 to structure ground.
(e) Release the parking brake.
(f) If there is 28v DC at pin 3 of connector D928, but there is not 28v DC at pin 2 of connector D928 after you set the parking brake, then do these steps:

- 1) Do a wiring check between these pins on switch, S100, in the P8 stand and connector D928 at the parking brake valve V11:

S100	D928
1N0	pin 2

- 2) If you find a problem with the wiring, then do these steps:
a) Re-connect connector D928.
b) Repair the wiring.
c) Fully push the brake pedals and set the parking brake.
d) If the PARKING BRAKE light comes on, then you corrected the fault.
e) Release the parking brake.
3) If you do not find a problem with the wiring, then do these steps:
a) Re-connect connector D928.

EFFECTIVITY
SIA ALL

32-42 TASK 830

D633A103-SIA

Page 269
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- b) Adjust the parking brake switch, S100, do this task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801.
 - c) Fully push the brake pedals and set the parking brake.
 - d) If the PARKING BRAKE light comes on, then you corrected the fault.
 - e) Release the parking brake.
 - f) If the PARKING BRAKE light does not come on, then continue.
 - g) Replace the parking brake switch, S100. These are the tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
 - h) Fully push the brake pedals and set the parking brake.
 - i) If the PARKING BRAKE light comes on, then you corrected the fault.
 - j) Release the parking brake.
- (g) If there is not 28v DC at either pin of connector D928 that you checked, then do these steps:
- 1) Do a check for 28v DC from the load terminal of this circuit breaker, C1346, to structure ground:
 - a) This is the circuit breaker:
F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE
 - b) If there is not 28v DC at the load terminal of the circuit breaker, C1346, then do these steps:
 - c) Replace the circuit breaker, C1346.
 - d) Fully push the brake pedals and set the parking brake.
 - e) If the PARKING BRAKE light comes on, then you corrected the fault.
 - f) Release the parking brake.
 - g) If there is 28v DC at the load terminal of the circuit breaker, C1346, then continue.
- 2) Do a check for 28v DC from connection 1C of the parking brake switch, S100, to structure ground.
- 3) If there is 28v DC at connection 1C of the parking brake switch, S100, then do these steps:
 - a) Replace the parking brake switch, S100. These are the tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
 - b) Fully push the brake pedals and set the parking brake.
 - c) If the PARKING BRAKE light comes on, then you corrected the fault.
 - d) Release the parking brake.
- 4) If there is not 28v DC at connection 1C of the parking brake switch, S100, then do these steps:

EFFECTIVITY
SIA ALL

32-42 TASK 830

D633A103-SIA

Page 270
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- a) Repair the wiring between pin 1C of the parking brake switch, S100 to the load terminal of circuit breaker C1346.
 - b) Fully push the brake pedals and set the parking brake.
 - c) If the PARKING BRAKE light comes on, then you corrected the fault.
 - d) Release the parking brake.
- (h) If there is 28v DC at pin 3 of connector D928, and there is also 28v DC at pin 2 of connector D928 after you set the parking brake, then continue.
- (3) Do a ground check of the parking brake valve, V11:
 - (a) Disconnect connector D928 from the parking brake valve, V11.
 - (b) Do a continuity check from pin 1 of connector D928 to structure ground.
 - (c) Do a continuity check from pin 9 of connector D928 to structure ground.
 - (d) If there is no continuity at pin 1 or pin 9 of connector D928, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D928.
 - 3) Fully push the brake pedals and set the parking brake.
 - 4) If the PARKING BRAKE light comes on, then you corrected the fault.
 - a) Release the parking brake.
 - (e) If there is continuity at pin 1 and pin 9 of connector D928, then continue.
- (4) Replace the parking brake valve, V11. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - (a) Fully push the brake pedals and set the parking brake.
 - (b) If the PARKING BRAKE light comes on, then you corrected the fault.
 - (c) Release the parking brake.

————— **END OF TASK** —————

831. ANTISKID INOP Light is OFF - Fault Isolation

A. Description

- (1) The ANTISKID INOP light comes on when these conditions occur:
 - (a) When the antiskid/autobrake control unit is not powered or not installed.
 - (b) Detection of an antiskid system fault by the antiskid/autobrake control unit.
 - (c) When the alternate brake hydraulic system is pressurized (as determined by the pressure switch on the alternate brake selector valve) and any antiskid system fault is detected (except a normal valve or parking brake disagree fault).

B. Possible Causes

- (1) Wiring problem
- (2) ANTISKID INOP light, L2
- (3) Outboard antiskid sense relay, R626
- (4) Inboard antiskid sense relay, R628
- (5) Alternate antiskid sense relay, R627

EFFECTIVITY
SIA ALL

32-42 TASKS 830-831

D633A103-SIA

Page 271
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- (6) Pressure switch on the alternate brake selector valve, S811.
- (7) Antiskid/autobrake control unit (AACU), M162

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- (1) Do this check of the ANTISKID INOP light:
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If a maintenance message shows, then go to the fault isolation task for that maintenance message.
 - (c) If a maintenance message does not show, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the ANTISKID INOP light, L2:
 - (a) Push and release the ANTISKID INOP light to use the press-to-test switch in the light.
 - (b) If the ANTISKID INOP light goes off, then do the steps that follow:
 - 1) Replace the ANTISKID INOP light assembly, L2, do this task: Indicator Light - Light Assembly Replacement, AMM TASK 33-18-00-960-802.
 - 2) Push and release the ANTISKID INOP light to use the press-to-test switch in the light.
 - 3) If the ANTISKID INOP light comes on and then goes off, then you corrected the fault.
 - (c) If the ANTISKID INOP light remains on, then continue.
- (2) Do this check of the pressure switch on the alternate brake selector valve, S811.
 - (a) Disconnect the electrical connector D2870 from the pressure switch.
 - (b) If the ANTISKID INOP light goes off, then do the steps that follow:
 - 1) Replace the pressure switch on the alternate brake selector valve, S811. These are the tasks:
 - Alternate Brake Selector Valve Removal, AMM TASK 32-41-93-000-801
 - Alternate Brake Selector Valve Installation, AMM TASK 32-41-93-420-801
 - 2) Reconnect the connector D2870 to the pressure switch.
 - 3) If the ANTISKID INOP light remains off, then you corrected the fault.
 - (c) If the AUTOBRAKE DISARM light remains on, then continue.

EFFECTIVITY
SIA ALL

32-42 TASK 831

D633A103-SIA

Page 272
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (3) Do this check of the wiring between the ANTISKID INOP light and the antiskid sense relays:
- (a) Remove the center instrument panel, P2-2.
 - (b) Disconnect connector D339 from the center instrument panel, P2-2.
 - (c) Disconnect connector D11402 from the outboard antiskid sense relay, R626, in the J24 junction box at STA 259.
 - (d) Do a wiring check between this pin on connector D339 at the P2-2 panel and the pin on connector D11402 for the outboard sense relay, R626:

D339	D11402
pin 8	pin 5

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D339 to the P2-2 panel.
 - 3) Re-connect connector D11402 to the relay.
 - 4) If the ANTISKID INOP light goes off, then you corrected the fault.
 - 5) Install the center instrument panel, P2-2.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector D11402 to the relay.
- (h) Disconnect connector D11406 from the inboard antiskid sense relay, R628, in the J22 junction box at STA 259.
- (i) Do a wiring check between this pin on connector D339 at the P2-2 panel and the pin on connector D11406 for the inboard sense relay, R628:

D339	D11406
pin 8	pin 5

- (j) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D339 to the P2-2 panel.
 - 3) Re-connect connector D11406 to the relay.
 - 4) If the ANTISKID INOP light goes off, then you corrected the fault.
 - 5) Install the center instrument panel, P2-2.
- (k) If you do not find a problem with the wiring, then continue.
- (l) Re-connect connector D11406 to the relay.
- (m) Disconnect connector D11404 from the alternate antiskid sense relay, R627, in the J22 junction box at STA 259.
- (n) Do a wiring check between this pin on connector D339 at the P2-2 panel and the pin on connector D11404 for the alternate sense relay, R627:

D339	D11402
pin 8	pin 3

- (o) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

EFFECTIVITY
SIA ALL

32-42 TASK 831

D633A103-SIA

Page 273
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 2) Re-connect connector D339 to the P2-2 panel.
- 3) Re-connect connector D11404 to the relay.
- 4) If the ANTISKID INOP light goes off, then you corrected the fault.
- 5) Install the center instrument panel, P2-2.
- (p) If you do not find a problem with the wiring, then continue.
- (q) Re-connect connector D11404 to the relay.
- (r) Re-connect connector D339 to the center instrument panel, P2-2.
- (s) Install the center instrument panel, P2-2.
- (4) Replace the Antiskid/Autobrake control unit, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (b) If the ANTISKID INOP light goes off, then you corrected the fault.

————— **END OF TASK** —————

832. AUTOBRAKES GRAB UPON LANDING - FAULT ISOLATION

A. Description

- (1) SDS 32-42-00

B. Possible Causes

- (1) Autobrake pressure control module

C. Related Data

- (1) (SSM 32-42-00)

D. Fault Isolation Procedure

- (1) Replace the autobrake pressure control module valve V122. These are the tasks:
 - Autobrake Pressure Control Module Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801
- (a) If the autobrakes operate correctly on subsequent flights, then you corrected the fault.
 - 1) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.

————— **END OF TASK** —————

833. AUTOBRAKE Disarms During Landing - Fault Isolation

A. Description

- (1) The Autobrake Disarm and the AUTO BRAKE DISARM light will come ON when one or more of these conditions occur:
 - (a) The Selector Switch is in position OFF or to an invalid switch position
 - (b) The Speedbrake is ARMED and the SPD BRK lever is in the DOWN position
 - (c) One of the two Brake Pedal Pressure Switches (S762 or S763) shows pressure more than 750 psi (5171 kPa).

EFFECTIVITY
SIA ALL

32-42 TASKS 831-833

D633A103-SIA

Page 274
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (d) One or more Thrust Lever Switches show an advanced condition.

NOTE: This disarm condition is prevented for the first three seconds after one of the two air/ground systems first show ground.

- (e) A fault in the Antiskid System
(f) A fault in the Autobrake System
(g) ADIRU input not valid

B. Possible Causes

- (1) Autothrottle Switch Pack, M1766 (LEFT) or M1767 (RIGHT)
- (2) Brake Pedal Pressure Switch, S762 or S763
- (3) Speed Brake Arming Switch, S276
- (4) Autobrake Valve Module, V122
- (5) AACU, M162
- (6) Wiring
- (7) Autobrake Shuttle Valve

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD
F	11	C00317	INDICATOR MASTER DIM SECT 5

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this check of the AUTO BRAKE DISARM light:
 - (a) Make sure that the Autobrake Selector Switch is in the OFF position.
 - 1) If the AUTO BRAKE DISARM light is ON and stays ON when the Autobrake Selector Switch is in the OFF position, then do the troubleshooting task for the AUTO BRAKE DISARM light.
 - a) Do this task: AUTOBRAKE DISARM Light is ON - Fault Isolation, 32-42 TASK 828.
 - (b) If the AUTO BRAKE DISARM light is ON and goes OFF when the Autobrake Selector Switch is moved to the OFF position, then do the troubleshooting task for the Antiskid/Autobrake Control Unit (AACU) BITE.
 - 1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 2) If a Maintenance Message shows, then go to the fault isolation task for that Maintenance Message.

EFFECTIVITY
SIA ALL

32-42 TASK 833

D633A103-SIA

Page 275
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 3) If there are no Maintenance Messages, then continue with this task.

F. Fault Isolation Procedure

- (1) Make sure that each of the Thrust Levers operate correctly. For each of the Autothrottle Switch Packs M1766 (LEFT) and M1767 (RIGHT), do these steps:

- (a) Disconnect the Connectors D11130 (LEFT) and D11134 (RIGHT) for the Autothrottle Switch Packs M1766 (LEFT) and M1767 (RIGHT).

NOTE: Autothrottle switchpacks can have intermittent operation.

- (b) Put identical digital/analog multimeter, COM-1793 on each of the Thrust Lever Switches, S2 and S3 simultaneously.

NOTE: Analog multimeters are suggested.



WARNING

MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

- (c) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

- (d) Make sure that the two Thrust Lever Switches, S2 and S3 operate correctly:

- Advance the Throttle Lever.
- Keep the Lever advanced for 10-30 minutes.
- Pull the Throttle Lever back and monitor the two multimeters at the same time.
- Make sure that the two Switches move to the retarded position at the same time.

- 1) Repeat the steps above three or more total times to make sure that the two Thrust Lever Switches, S2 and S3 operate the same each time.
- 2) If the two Thrust Lever Switches, S2 and S3 do not operate the same each time that the Throttle Lever position is changed, then replace the related Switchpack. These are the tasks
 - Autothrottle Switchpack Assembly - Removal, AMM TASK 76-11-07-020-802-F00
 - Autothrottle Switchpack Assembly - Installation, AMM TASK 76-11-07-400-802-F00

- (e) Do these steps again for the opposite thrust lever.

- (f) Close this circuit breaker:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

- (g) Do the Repair Confirmation at the end of this task.

- (2) Replace Brake Pedal Pressure Switches, S762 and S763.

- (a) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-42 TASK 833

D633A103-SIA

Page 276
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (3) Make sure that the Speed Brake Arming Switch, S276 operates correctly. Do this task: Speed Brake Lever Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation, 32-42 TASK 827.
- (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the Autobrake Module, V122. These are the tasks:
- Autobrake Pressure Control Module Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (5) Replace Antiskid/autobrake Control Unit (AACU), M162. These are the tasks:
- Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (6) Do this Check of the wiring.
- (a) Remove the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (b) Check the Wiring between the AACU, M162 and the Speed Brake Arming Switch, S276. Do these steps:
- 1) Disconnect the Connector D10199 from the Speed Brake Arming Switch, S276.
 - 2) Do a Wiring Check between these pins of Connector D1040A and D1040B at E1-3 shelf and Connector D10199 at the Speed Brake Arming Switch, S276:

SWITCH EQUIPMENT NUMBER S276

SWITCH CONNECTOR	AACU CONNECTOR
D10199	D1040A
pin 8	pin B7
D10199	D1040B
pin 2	pin C11

- 3) If you find a problem with the Wiring, then do these steps:
- a) Repair the Wiring.
 - b) Re-connect the Connector D10199.
 - c) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 4) If you do not find a problem with the Wiring, then continue.
- a) Re-connect the Connector D10199.
- (c) Check the Wiring between the AACU, M162 and each of the Brake Pedal Pressure Switches, S762 or S763. For the applicable Brake Pedal Pressure Switch, do these steps:
- 1) Find the Connector and the pair of pins for the applicable Brake Pedal Switch:

EFFECTIVITY
SIA ALL

32-42 TASK 833



**737-600/700/800/900
FAULT ISOLATION MANUAL**

LEFT SWITCH EQUIPMENT NUMBER S762

SWITCH CONNECTOR	AACU CONNECTOR
D2564	D1040B
pin 2	pin B8
pin 3	pin A9

RIGHT SWITCH EQUIPMENT NUMBER S763

SWITCH CONNECTOR	AACU CONNECTOR
D2566	D1040A
pin 2	pin A10
pin 3	pin B10

- 2) Disconnect the Connector from the applicable Brake Pedal Pressure Switch.
 - 3) Do a Wiring Check between the pins of the Connector at the E1-3 shelf and the Connector at the applicable Brake Pedal Pressure Switch.
 - 4) If you find a problem with the Wiring, then do these steps:
 - a) Repair the Wiring.
 - b) Re-connect the Connector to the applicable Brake Pedal Pressure Switch.
 - c) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
 - 5) If you do not find a problem with the Wiring, then continue.
 - a) Re-connect the Connector to the applicable Brake Pedal Pressure Switch.
- (d) Check the Wiring between the AACU, M162 and each of the Autothrottle Switch Packs, M1766 (LEFT) or M1767 (RIGHT). For the applicable Autothrottle Switch Pack, do these steps:
- 1) Find the Connector and the four pins for the applicable Switch Pack:

**RIGHT SWITCH PACK EQUIPMENT NUMBER
M1767**

SWITCH PACK CONNECTOR	AACU CONNECTOR
D11134	D1040A
pin 2	pin A7
D11134	D1040B
pin 3	pin D6
pin 5	pin B9
pin 6	pin A2

EFFECTIVITY
SIA ALL

32-42 TASK 833

D633A103-SIA

Page 278
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

LEFT SWITCH PACK EQUIPMENT NUMBER M1766

SWITCH PACK CONNECTOR	AACU CONNECTOR
D11130	D1040A
pin 2	pin A7
D11130	D1040B
pin 3	pin A4
pin 5	pin B9
pin 6	pin A7

- 2) Disconnect the Connector from the applicable Switch Pack.
 - 3) Do a Wiring Check between the pins of the Connector at the E1–3 shelf and the Connector at the applicable Switch Pack.
 - 4) If you find a problem with the Wiring, then do these steps:
 - a) Repair the Wiring.
 - b) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - c) Do the Repair Confirmation at the end of this task.
 - 5) If you do not find a problem with the Wiring, then continue.
 - a) Re-connect the Connector to the applicable Switch Pack.
- (e) Check the Wiring between the AACU, M162 and the Autobrake Selector Switch, S4. Do these steps:
- 1) Disconnect the Connector D333 from the P2-2 panel.
 - 2) Do a Wiring Check between these pins of Connector D1040B at E1-3 shelf and the Connector D333 at the Autobrake Selector Switch, S4.

LEVER SWITCH EQUIPMENT NUMBER S4

SWITCH CONNECTOR	AACU CONNECTOR
D333	D1040B
pin 32	pin D7
pin 33	pin D8
pin 34	pin D9
pin 35	pin D10
pin 36	pin D12
pin 37	pin C10

- 3) If you find a problem with the Wiring, then do these steps:
 - a) Repair the Wiring.
 - b) Re-connect the Connector D333.
 - c) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-42 TASK 833

D633A103-SIA

Page 279
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 4) If you do not find a problem with the Wiring, then continue.
 - a) Re-connect the Connector D333.
- (f) Check the Wiring between the AACU, M162 and the Autobrake Valve Module, V122. Do these steps:
 - 1) Do a Continuity Check between the pins of Connector D1040A and D1040B at the AACU, and the pins of Connectors D2570, D2574 and D2576 at the Autobrake Valve Module, V122.

VALVE MODULE EQUIPMENT NUMBER V122

VALVE MODULE CONNECTOR	AACU CONNECTOR
D2570	D1040A
pin 2	pin B8
D2574	D1040A
pin 1	pin C9
pin 2	pin D9
D2576	D1040B
pin 2	pin A10
D2576	D1040A
pin 3	pin C7

- 2) If you find a problem with the Wiring, then do these steps:
 - a) Repair the Wiring.
 - b) Re-connect the Connectors.
 - c) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 3) If you do not find a problem with the Wiring, then continue.
 - a) Re-connect the Connectors.
 - b) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (7) Replace the Autobrake Shuttle Valves. These are the tasks:
 - Autobrake Shuttle Valve Removal, AMM TASK 32-42-71-000-801
 - Autobrake Shuttle Valve Installation, AMM TASK 32-42-71-400-801

G. Repair Confirmation

- (1) Do this check of the AUTO BRAKE DISARM light.
 - (a) Make sure that the Autobrake Selector Switch is in the OFF position.
 - (b) If the AUTO BRAKE DISARM light is OFF when the Autobrake Selector Switch is in the OFF position, then you corrected the problem.
 - (c) If the AUTO BRAKE DISARM light is ON when the Autobrake Selector Switch is in the OFF position, then continue with the troubleshooting.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-42 TASK 833

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 280
Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL

834. Wheels Continue to Spin in Main Gear Wheel Well After Gear Retraction - Fault Isolation

A. Description

- (1) This task is for this Observed Fault:
 - (a) Damage to systems and structures in the Wheel Well area, caused by wheels that continue to spin after Gear Retraction.
 - Damage to the Rubber Blade Seals
 - Debris in the Wheel Well
- (2) A defective Gear Retract Braking System, could cause the wheels to spin after Gear Retraction.
- (3) A tire damaged during takeoff, could cause the indicated problems above.

B. Possible Causes

- (1) Hydraulic Quick Disconnect
- (2) Left (Right) Alternate Anti-Skid Valve, V125 (V124)
- (3) SYS 1 (SYS 2) Landing Gear Lever Switch, S3 (S4)
- (4) Alternate Brake System Hydraulic Fuse
- (5) Brake Metering Valve, M1279
- (6) Flow Limiter
- (7) Brake Shuttle Valve
- (8) Alternate Source Select Valve

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) WDM 32-41-11
- (2) SSM 32-41-11

E. Initial Evaluation



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) With the Landing Gear Ground Lock Pins installed in the Main and Nose Landing Gear, put the LANDING GEAR Lever in the UP position.
- (2) Make sure that the Brake Pistons apply when the Gear Lever is in the UP position.
 - (a) If the pistons do not operate only on one brake, then do the "Fault Isolation Procedure - Defective Pistons on One Brake" below.

EFFECTIVITY
SIA ALL

32-42 TASK 834

D633A103-SIA

Page 281
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) If the pistons do not operate on two brakes of the same gear, then do the "Fault Isolation Procedure - Defective Pistons on Two Brakes" below.
- (c) If the pistons do not operate on ALL four brakes, then do the "Fault Isolation Procedure - Defective Pistons on ALL Four Brakes" below.

F. Fault Isolation Procedure - Defective Pistons on One Brake

- (1) Replace both portions of the Brake Hydraulic Quick Disconnect on the affected brake.
 - (a) Do the Repair Confirmation at the end of this task.
- (2) Replace the Brake Flow Limiter for the affected brake. These are the tasks:
 - Brake Flow Limiter Removal, AMM TASK 32-41-96-000-801
 - Brake Flow Limiter Installation, AMM TASK 32-41-96-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the Brake Shuttle Valve for the affected brake. These are the tasks:
 - Brake Shuttle Valve Removal, AMM TASK 32-41-95-000-801
 - Brake Shuttle Valve Installation, AMM TASK 32-41-95-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Fault Isolation Procedure - Defective Pistons on Two Brakes

- (1) Replace the Alternate Antiskid Valve for the affected side of the airplane. These are the tasks:
 - Antiskid Valve Removal, AMM TASK 32-42-31-000-801
 - Antiskid Valve Installation, AMM TASK 32-42-31-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (2) Replace the Alternate Brake Hydraulic Fuse for the affected side of the airplane. These are the tasks:
 - Brake Hydraulic Fuse (Alternate Brake System) - Removal, AMM TASK 32-41-72-020-801
 - Brake Hydraulic Fuse (Alternate Brake System) - Installation, AMM TASK 32-41-72-420-801
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the Brake Metering Valve for the affected side of the airplane. These are the tasks:
 - Brake Metering Valve Removal, AMM TASK 32-41-31-000-801
 - Brake Metering Valve Installation, AMM TASK 32-41-31-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the Shuttle Valve for the affected side of the airplane. These are the tasks:
 - Brake Shuttle Valve Removal, AMM TASK 32-41-95-000-801
 - Brake Shuttle Valve Installation, AMM TASK 32-41-95-400-801
 - (a) Do the Repair Confirmation at the end of this task.

H. Fault Isolation Procedure - Defective Pistons on All Brakes

- (1) Do a continuity check of the SYS 1 (SYS 2) Landing Gear Lever UP Switch as follows:
 - (a) Put the LANDING GEAR Lever to the UP position.

EFFECTIVITY
SIA ALL

32-42 TASK 834

D633A103-SIA

Page 282
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

- (c) Disconnect connector D11990 from the Landing Gear Control Lever Module, M2938 (WDM 32-41-11).
- (d) Do a continuity check on the Landing Gear Control Lever Module Receptacle as follows:

	MOD RECEPTACLE	MOD RECEPTACLE	
SYS 1	M1952	M1952	
	pin 14	pin 16	NO CONTINUITY
SYS 2	M1952	M1952	
	pin 11	pin 13	NO CONTINUITY

- (e) If you find a problem with the Landing Gear Lever UP Switch S3 (S4) continuity check, then replace the applicable SYS 1 (SYS 2) Landing Gear Lever UP Switch, S4 (S5). These are the tasks:

- Antiskid Landing Gear Lever Up Switch Removal, AMM TASK 32-42-51-000-801
 - Antiskid Landing Gear Lever Up Switch Installation, AMM TASK 32-42-51-420-801
- 1) Do the Repair Confirmation at the end of this task.

- (2) Replace the Alternate Source Select Valve. These are the tasks:

- Alternate Brake Selector Valve Removal, AMM TASK 32-41-93-000-801
- Alternate Brake Selector Valve Installation, AMM TASK 32-41-93-420-801

- (a) Do the Repair Confirmation at the end of this task.

I. Repair Confirmation



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) With the Landing Gear Ground Lock Pins installed in the Main and Nose Landing Gear, put the LANDING GEAR Lever in the UP position.
- (2) Make sure that the Brake Pistons apply correctly when the Gear Lever is in the UP position.
- (a) If the pistons apply correctly when the Gear Lever is in the UP position, then you corrected the problem.
- (b) If the pistons do not operate correctly when the Gear Lever is in the UP position, then continue the applicable Fault Isolation Procedure at the subsequent step.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-42 TASK 834

D633A103-SIA

Page 283
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

835. OB CFG - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) OB CFG
- (2) The outboard unigain/multigain valve configuration pins are in an invalid state.

B. Possible Causes

- (1) Program Pins
- (2) AACU, M162

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) WDM 32-41-11
- (2) SSM 32-41-11

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the program pins of the AACU, M162.
 - (a) Remove the AACU, M162 to get access to the electrical connectors. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Make sure that the program pins A3, B9, and C5 of connector D1040A, and program pins B1, B5, and B13 of connector D1040B are connected as specified in WDM 32-41-11.
 - 1) If the program pins are not connected correctly, then do these steps:
 - a) Connect the program pins as specified in the WDM.
 - b) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If the program pins are connected correctly, then continue.
- (2) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-42 TASK 835

D633A103-SIA

Page 284
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

G. Repair Confirmation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then you corrected the problem.
 - (b) If the maintenance message still shows, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

836. PRG XCMP - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) PRG XCMP
- (2) The inboard/outboard antiskid configurations disagree.

B. Possible Causes

- (1) Program Pins
- (2) AACU, M162

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) WDM 32-41-11
- (2) SSM 32-41-11

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the program pins of the AACU, M162.
 - (a) Remove the AACU, M162 to get access to the electrical connectors. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Make sure that the program pins A3, B9, and C5 of connector D1040A, and program pins B1, B5, and B13 of connector D1040B are connected as specified in WDM 32-41-11.
 - 1) If the program pins are not connected correctly, then do these steps:
 - a) Connect the program pins as specified in the WDM.
 - b) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If the program pins are connected correctly, then continue.

EFFECTIVITY
SIA ALL

32-42 TASKS 835-836

D633A103-SIA

Page 285
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (2) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then you corrected the problem.
 - (b) If the maintenance message still shows, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

837. IB CFG - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) IB CFG
- (2) The inboard unigain/multigain valve configuration pins are in an invalid state.

B. Possible Causes

- (1) Program Pins
- (2) AACU, M162

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) WDM 32-41-11
- (2) SSM 32-41-11

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the program pins of the AACU, M162.
 - (a) Remove the AACU, M162 to get access to the electrical connectors. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Make sure that the program pins A3, B9, and C5 of connector D1040A, and program pins B1, B5, and B13 of connector D1040B are connected as specified in WDM 32-41-11.
 - 1) If the program pins are not connected correctly, then do these steps:
 - a) Connect the program pins as specified in the WDM.

EFFECTIVITY
SIA ALL

32-42 TASKS 836-837

D633A103-SIA

Page 286
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- b) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- c) Do the Repair Confirmation at the end of this task.
- 2) If the program pins are connected correctly, then continue.
- (2) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then you corrected the problem.
 - (b) If the maintenance message still shows, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

SIA ALL; AIRPLANES WITH CARBON BRAKES

838. Antiskid Transducer Mechanical Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - WHLMECH1
 - WHLMECH2
 - WHLMECH3
 - WHLMECH4
- (a) The Antiskid Transducer has become mechanically disconnected from the hubcap.
- (b) The AACU does not receive a valid signal from an Antiskid Transducer.

NOTE: Refer to the tire numeration on the AACU Front Panel to identify the problem Antiskid Transducer.

B. Possible Causes

- (1) Left Outboard (Left Inboard, Right Inboard, Right Outboard) Antiskid Transducer, T392 (T394, T393, T395)
- (2) Wiring

C. Related Data

- (1) SSM 32-41-11
- (2) WDM 32-41-11

D. Fault Isolation Procedure

- (1) Make sure that the hubcap is mechanically coupled with the applicable Antiskid Transducer (AMM PAGEBLOCK 32-42-11/401).
 - (a) Do the Repair Confirmation at the end of this task.
- (2) Do this task: Transducer Functional Test, AMM TASK 32-42-00-710-801.
 - (a) If you find a problem during the test, then replace the applicable Antiskid Transducer. These are the tasks:

EFFECTIVITY
SIA ALL

32-42 TASKS 837-838

D633A103-SIA

Page 287
Feb 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- Transducer Removal, AMM TASK 32-42-11-000-801
- Transducer Installation, AMM TASK 32-42-11-400-801
- 1) Do the Repair Confirmation at the end of this task.
- (b) If you do not find a problem during the test, then continue.
- (3) Do this check of the wiring (WDM 32-41-11):
 - (a) Remove the AACU, M162 from the E1-3 EE Shelf. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Disconnect applicable connector D11120 (D11122, D11124, D11126) from the Left Outboard (Left Inboard, Right Inboard, Right Outboard) Antiskid Transducer, T392 (T394, T393, T395).
 - (c) Do a wiring check as follows:

MAINTENANCE MESSAGE: WHLMECH1

	L OUTBD
	ANTISKID
AACU, M162	XDCR, T392
D1040B	D11120
pin A5	pin 1
pin A6	pin 3

MAINTENANCE MESSAGE: WHLMECH2

	L INB ANTISKID
	XDCR, T394
AACU, M162	D11122
D1040B	
pin A12	pin 1
pin A13	pin 3

MAINTENANCE MESSAGE: WHLMECH3

	R INBD
	ANTISKID
AACU, M162	XDCR, T393
D1040A	D11124
pin B12	pin 1
pin B13	pin 3

MAINTENANCE MESSAGE: WHLMECH4

	R OUTBD
	ANTISKID
AACU, M162	XDCR, T395
D1040A	D11126
pin B5	pin 1
pin B6	pin 3

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector D11120 (D11122, D11124, D11126).

EFFECTIVITY
SIA ALL

32-42 TASK 838

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 288
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL; AIRPLANES WITH CARBON BRAKES (Continued)

- c) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 2) If you do not find a problem with the wiring, then do this step and continue:
 - a) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (4) Replace the applicable Antiskid Transducer. These are the tasks:
 - Transducer Removal, AMM TASK 32-42-11-000-801
 - Transducer Installation, AMM TASK 32-42-11-400-801
- (a) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

- (1) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then you corrected the problem.
 - (b) If the maintenance message shows, then continue the Fault Isolation Procedure at the subsequent step.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-42 TASK 838

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 289
Feb 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

801. Parking Brake Pressure Decreases Faster Than Permitted with the Parking Brake Set - Fault Isolation

A. Description

- (1) This procedure systematically isolates components within the hydraulic brake system that can lead to brake pressure decreasing faster than permitted with the parking brake set.
- (2) In particular, this procedure limits the root cause of the elevated bleed down rate to components downstream of and including the brake metering valves.
- (3) If the parking brake is set with both hydraulic systems A and B pressurized, do not shut the two systems off simultaneously. The Hydraulic system pressure B decreases at a higher rate than hydraulic system A, causing the Alternate Source Select Valve to shuttle to the alternate position. This allows some accumulator fluid to release the accumulator circuit while the brakes momentarily release and reapply. To prevent this condition, turn off hydraulic system A at least 10 seconds before turning off hydraulic system B.

B. Possible Causes

- (1) Brake Cable Tension/Rigging
- (2) Brake Accumulator Pneumatic Plumbing
- (3) Parking Brake Shutoff Valve
- (4) Parking Brake Pawl Rigging
- (5) Brake Shuttle Valves(s)
- (6) Auto Brake Shuttle Valve(s)
- (7) Brake Metering Valve(s)
- (8) Auto Brake Pressure Control Module

C. Initial Evaluation

- (1) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Set.
 - (a) If the Parking Brake Accumulator pressure decreases faster than permitted, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

- (1) Did you wait for a minimum of 10 minutes after you turned on the pumps to start the Parking Brake Hold check?
 - (a) If you waited less than 10 minutes, then allow 10 minutes for the accumulator temperature to stabilize.
 - (b) If you waited for more than 10 minutes, then continue.
- (2) Do this task to make sure that the brake cable system is adjusted correctly. This is the task: Hydraulic Brake System - Adjustment, AMM TASK 32-41-00-820-801 (32-44 TASK SUPPORT Figure 305 and 32-44 TASK SUPPORT Figure 306).

NOTE: Some aircraft may require the use of rigging pin kit, SPL-9118 to install rig pin LGB3 (left side) or rig pin LGB4 (right side), F70207-88, from rigging pin kit, SPL-1585 through the rig pin hole for the brake metering valve assembly (Brake Metering Valve Installation, AMM TASK 32-41-31-400-801).

- (a) Install the forward and aft brake system rig pins and check for freeplay.
 - 1) If the freeplay is not satisfactory, then adjust the cables as necessary.
 - a) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-44 TASK 801

D633A103-SIA

Page 201
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 2) If freeplay is satisfactory, then continue.
- (3) Do this task: Check of the Brake Accumulator Pre-charge Pressure, AMM TASK 12-15-11-610-801.
NOTE: Check all gas-side tubing connections, which includes the accumulator, the two sides of the bulkhead fitting, charging valve, and all the accumulator gauge surface in the wheel well.
 - (a) If the brake accumulator precharge pressure is low, then do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - (b) Check for nitrogen gas leakage on the pressure tube connections to the brake accumulator. This is the task: Brake Pressure Indication Low/Zero - Fault Isolation, 32-44 TASK 805.
 - (c) Do the Repair Confirmation at the end of this task.
- (4) Make sure that there is correct operation of the parking brake shutoff valve (32-44 TASK SUPPORT Figure 301).
 - (a) Make sure that the parking brake light in the flight compartment is on while the parking brake is set.
 - 1) If the parking brake light is off, then do a check on the parking brake switch actuator. This is the task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801.
 - a) If you do not find a problem with the adjustment of the parking brake switch actuator, then do these tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
 - 2) If the parking brake light is on, then continue.
 - (b) Make sure that the parking brake shutoff valve is closed (position 2) while the parking brake is set.
 - 1) If the parking brake shutoff valve is not closed, then replace the parking brake shutoff valve. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - (c) If the parking brake shutoff valve is closed and the parking brake light is on, then continue.
- (5) Do a brake accumulator bleed down test. This is the task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released.
 - (a) If the brake accumulator bleed down test fails with Parking Brake Released, do this task: Parking Brake Pressure Decreases Faster Than Permitted with the Parking Brake Released- Fault Isolation, 32-44 TASK 802.
 - (b) If the brake accumulator bleed down test passes with Parking Brake Released, then continue.

EFFECTIVITY
SIA ALL

32-44 TASK 801

D633A103-SIA

Page 202
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (6) With the brakes set, these steps can be used to find if components downstream of the brake metering valves have internal leaks through the use of audible methods. If this method is not desired or if bypass/leakage is not detectable, continue to the subsequent step.

NOTE: As a recommended procedure use an ultrasonic leak tester (ultrasonic leak probe, SPL-1473 or equivalent) to listen to components that can have internal leaks.

NOTE: A component can have an internal leak if it is warmer than others or makes an audible sound.

NOTE: It can be necessary to occasionally re-pressurize the system to do all of the leak check. If necessary, do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the parking brake set.

- (a) Listen for internal hydraulic fluid leakage through the parking brake shutoff valve. Specially look at the output port (32-44 TASK SUPPORT Figure 301).
- 1) If internal leakage is suspected, replace the parking brake shutoff valve. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If internal leakage is not suspected, then continue.
- (b) Listen for internal hydraulic fluid leakage through the brake shuttle valves (4 each). Specially look at the hydraulic system A (alternate brakes) input port (32-44 TASK SUPPORT Figure 302).

NOTE: Brake shuttle valve leakage usually cause hydraulic fluid transfer from system B to system A. If hydraulic fluid transfer is not noted, then the brake shuttle valves are not the cause of fast accumulator bleed down.

- 1) If internal leakage is suspected, replace the suspect brake shuttle valve. These are the tasks:
 - Brake Shuttle Valve Removal, AMM TASK 32-41-95-000-801
 - Brake Shuttle Valve Installation, AMM TASK 32-41-95-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If internal leakage is not suspected, then continue.
- (c) Listen for internal hydraulic fluid leakage through the auto brake shuttle valves (2 each) (32-44 TASK SUPPORT Figure 303).
- 1) If internal leakage is suspected, replace all suspect auto brake shuttle valves. These are the tasks:
 - Autobrake Shuttle Valve Removal, AMM TASK 32-42-71-000-801
 - Autobrake Shuttle Valve Installation, AMM TASK 32-42-71-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If internal leakage is not suspected, then continue.
- (d) Listen for internal hydraulic fluid bypass at the left and right brake metering valves. Specially look at the system B return ports (32-44 TASK SUPPORT Figure 304).

NOTE: Each port on the metering valve may have a marking of the designated hydraulic system, and it may not correspond to the hydraulic system used on the aircraft. Refer to 32-44 TASK SUPPORT Figure 304 for the correct connection.

EFFECTIVITY
SIA ALL

32-44 TASK 801

D633A103-SIA

Page 203
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 1) If internal leakage is suspected through one (or the two) of the brake metering valves. Do these tasks:
 - Hydraulic Brake System - Adjustment, AMM TASK 32-41-00-820-801
 - Parking Brake Hold Check, AMM TASK 32-44-00-790-801
 - a) If the accumulator pressure decreases faster than permitted, then replace the suspect brake metering valve(s). These are the tasks:
 - Brake Metering Valve Removal, AMM TASK 32-41-31-000-801
 - Brake Metering Valve Installation, AMM TASK 32-41-31-400-801

<1> Do the Repair Confirmation at the end of this task.
 - b) If the accumulator pressure decreases within limits, then do the Repair Confirmation at the end of this task.
 - 2) If internal leakage is not suspected, then continue.
- (e) Listen for internal hydraulic fluid leakage within the auto brake pressure control module. Specially look on the return port (32-44 TASK SUPPORT Figure 310).
- 1) If internal leakage is suspected, replace the auto brake pressure control module. These are the tasks:
 - Autobrake Pressure Control Module Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801

a) Do the Repair Confirmation at the end of this task.
 - 2) If internal leakage is not suspected, then continue.
- (7) Do the check of the clearance between the Parking Brake pawl and the bushing (32-44 TASK SUPPORT Figure 307).
- (a) Do a check of the clearance between the pawl lip and the bushing with the pedals against the stop position.
 - 1) If the clearance between the pawl lip and the bushing is more than 0.1 in. (2.5 mm), then adjust the pawls of the Parking Brake. This is the task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801.
 - (b) Do a check of the clearance between the aft edge of the pawls and the bushing with the bellcrank turned slightly.
 - 1) If the clearance between the aft edge of the pawls and bushing is more than 0.2 in. (5.1 mm), then adjust the pawl stop. This is the task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801.
 - (c) Do the Repair Confirmation at the end of this task.
- (8) Do a check for internal leakage of the parking brake shutoff valve as follows (32-44 TASK SUPPORT Figure 301):
- (a) For hydraulic system B, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (b) Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
 - (c) Disconnect and cap the output port of the parking brake valve.
 - (d) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Set.
 - 1) If the brake accumulator pressure fall within limits, then do these tasks:

EFFECTIVITY
SIA ALL

32-44 TASK 801

D633A103-SIA

Page 204
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the brake accumulator pressure falls too quickly, connect again the hydraulic line to the output port of the parking brake shutoff valve and continue.
- (9) Do a check for internal leakage through the auto brake pressure control module (32-44 TASK SUPPORT Figure 310).
- (a) For hydraulic systems A and B, do these tasks:
 - Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805
 - Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802
 - (b) Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
 - (c) Disconnect the check valve from the auto brake pressure control module return port and keep the check valve connected to the hydraulic tube.

NOTE: Keep the auto brake pressure control module return port open to the environment.
 - (d) Pressurize the hydraulic system B. These are the tasks:
 - Hydraulic Reservoirs Pressurization, AMM TASK 29-09-00-860-801
 - Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801
 - (e) If there is hydraulic fluid leakage from the open return port of the auto brake pressure control module, replace the module. These are the tasks:
 - Autobrake Pressure Control Module Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - (f) If there is no hydraulic fluid leak at the open return port of the auto brake pressure control module, connect again the check valve to the return port and continue.
- (10) Do a check to isolate possible internal hydraulic fluid leakage paths to left brake system components.
- NOTE: Brake shuttle valve leakage generally results in hydraulic fluid transfer from system B to system A. If hydraulic fluid transfer is not noted, then the brake shuttle valves are not the cause of fast accumulator bleed down.
- (a) Disconnect the control (input) rod for the right brake metering valve.
 - (b) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with Parking Brake Set.
 - 1) If the accumulator pressure decreases within the limit, then connect again the control (input) rod of the right brake metering valve and continue to the subsequent step.
 - 2) If the accumulator pressure decreases faster than permitted, do as follows:
 - a) Do a check for internal leakage through the left brake shuttle valves (32-44 TASK SUPPORT Figure 302).
 - <1> For hydraulic system B, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

EFFECTIVITY
SIA ALL

32-44 TASK 801

D633A103-SIA

Page 205
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- <2> Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
 - <3> Plug the alternate brake system pressure input to the two left brake shuttle valves.
 - <4> Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Set.
 - <a> If the brake accumulator brake pressure decreases within the limit, then replace the left brake shuttle valves. These are the tasks:
 - Brake Shuttle Valve Removal, AMM TASK 32-41-95-000-801
 - Brake Shuttle Valve Installation, AMM TASK 32-41-95-400-801
 - I. Do the Repair Confirmation at the end of this task.
 - If the accumulator pressure decreases faster than permitted, then connect again the alternate brake system pressure inputs to the two left brake shuttle valves and continue.
- b) Do a check for internal leakage through the left auto brake shuttle valve as follows (32-44 TASK SUPPORT Figure 303):
- <1> For hydraulic system B, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - <2> Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
 - <3> Plug the pressure input from the auto brake pressure control module of the left auto brake shuttle valve.
 - <4> Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Set.
 - <a> If the brake accumulator brake pressure decreases within the limit, then replace the left auto brake shuttle valve. These are the tasks:
 - Autobrake Shuttle Valve Removal, AMM TASK 32-42-71-000-801
 - Autobrake Shuttle Valve Installation, AMM TASK 32-42-71-400-801
 - I. Do the Repair Confirmation at the end of this task.
 - If the accumulator pressure decreases faster than permitted, then connect again the auto brake pressure control module input to the left auto brake shuttle valve and continue.
- c) Replace the left brake metering valve (32-44 TASK SUPPORT Figure 304). These are tasks:
- Brake Metering Valve Removal, AMM TASK 32-41-31-000-801
 - Brake Metering Valve Installation, AMM TASK 32-41-31-400-801
 - <1> Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-44 TASK 801

D633A103-SIA

Page 206
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (11) Do a check to isolate possible internal hydraulic fluid leakage paths to right brake system components.

NOTE: Brake shuttle valve leakage usually causes hydraulic fluid transfer from system B to system A. If you do not find hydraulic fluid transfer, then the brake shuttle valves are not the cause of fast accumulator bleed down.

- (a) If necessary, connect again the control (input) rod to the right brake metering valve.
- (b) Disconnect the control (input) rod for the left brake metering valve.
- (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Set.
 - 1) If the accumulator pressure decreases within limits, then connect again the control (input) rod of the left brake metering valve.
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the accumulator pressure decreases faster than permitted, do as follows:
 - a) Do a check for internal leakage through the right brake shuttle valves (32-44 TASK SUPPORT Figure 302).
 - <1> For hydraulic system B, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - <2> Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
 - <3> Plug the alternate brake system pressure input to the two right brake shuttle valves.
 - <4> Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Set.
 - <a> If the brake accumulator brake pressure decreases within the limit, then replace the right brake shuttle valves. These are the tasks:
 - Brake Shuttle Valve Removal, AMM TASK 32-41-95-000-801
 - Brake Shuttle Valve Installation, AMM TASK 32-41-95-400-801
 - I. Do the Repair Confirmation at the end of this task.
 - If the accumulator pressure decreases faster than permitted, then connect again the alternate brake system pressure inputs to the two right brake shuttle valves.
 - b) Do a check for internal leakage through the right auto brake shuttle valve, do as follows (32-44 TASK SUPPORT Figure 303):
 - <1> For hydraulic system B, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - <2> Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
 - <3> Plug the pressure input from the auto brake pressure control module of the right auto brake shuttle valve.
 - <4> Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Set.

EFFECTIVITY
SIA ALL

32-44 TASK 801

D633A103-SIA

Page 207
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- <a> If the brake accumulator brake pressure decreases within the limit, then replace the left auto brake shuttle valve. These are the tasks:
- Autobrake Shuttle Valve Removal, AMM TASK 32-42-71-000-801
 - Autobrake Shuttle Valve Installation, AMM TASK 32-42-71-400-801
- I. Do the Repair Confirmation at the end of this task.
- If the accumulator pressure decreases faster than permitted, then connect again the auto brake pressure control module input to the right auto brake shuttle valve.
- c) Replace the right brake metering valve (32-44 TASK SUPPORT Figure 304). These are the tasks:
- Brake Metering Valve Removal, AMM TASK 32-41-31-000-801
 - Brake Metering Valve Installation, AMM TASK 32-41-31-400-801
- <1> Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

- (1) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Set.
 - (a) If the accumulator pressure decreases within the limit, then you corrected the problem. No further action is necessary.
 - (b) If the accumulator pressure decreases faster than permitted, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

802. Parking Brake Pressure Decreases Faster Than Permitted with the Parking Brake Released- Fault Isolation

A. Description

- (1) This procedure systematically isolates components within the hydraulic brake system that can lead to brake pressure decreases faster than permitted with the parking brake released.
- (2) In particular, this procedure limits the root cause of the elevated bleed down rate to components upstream of and including the brake metering valves.
 - (a) When the brakes are in a released condition, the brake metering valves block hydraulic pressure from entering the downstream hydraulic plumbing. This effectively removes downstream components from being the cause of the high bleed down rate.
- (3) If the parking brake is set with both hydraulic systems A and B pressurized, do not shut the two systems off simultaneously. Hydraulic system pressure B decreases at a higher rate than hydraulic system A, causing the Alternate Source Select Valve to shuttle to the alternate position. This allows some accumulator fluid to release the accumulator circuit as the brakes momentarily release and reapply. To prevent this condition, turn off hydraulic system A at least 10 seconds before turning off hydraulic system B.

B. Possible Causes

- (1) Brake Accumulator Pneumatic Plumbing
- (2) Brake Accumulator Check Valve(s)

EFFECTIVITY
SIA ALL

32-44 TASKS 801-802

D633A103-SIA

Page 208
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (3) Brake Accumulator Pressure Relief Valve
- (4) Auto Brake Pressure Control Module
- (5) Brake Metering Valve(s)

C. Initial Evaluation

- (1) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released.
 - (a) If the Parking Brake Accumulator pressure decreases faster than permitted, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

- (1) Did you wait for a minimum of 10 minutes after you turned on the pumps to start the Parking Brake Hold check?
 - (a) If you waited less than 10 minutes, then let 10 minutes for the accumulator temperature to stabilize.
 - (b) If you waited for more than 10 minutes, then continue.

- (2) Do this task: Check of the Brake Accumulator Pre-charge Pressure, AMM TASK 12-15-11-610-801.

NOTE: Check all gas-side tubing connections that includes the accumulator, the two sides of the bulkhead fitting, the charging valve, and all around the accumulator gauge in the wheel well.

- (a) If the brake accumulator precharge pressure is low, then do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - (b) Check for nitrogen gas leakage on the gas pressure tube connections to the brake accumulator. This is the task: Brake Pressure Indication Low/Zero - Fault Isolation, 32-44 TASK 805.
 - (c) Do the Repair Confirmation at the end of this task.
- (3) With the brakes released, these steps can be use to find if components upstream of the brake metering valves have an internal leak through the use of audible methods. If this method is not desired or if bypass/leakage is not detectable, continue to the subsequent step.

NOTE: As a recommended procedure use an ultrasonic leak tester (ultrasonic leak probe, SPL-1473 or equivalent) to listen to components that can have internal leaks.

NOTE: A component can have an internal leak if it is warmer than others or makes an audible sound.

NOTE: It can be necessary to occasionally re-pressurize the system to do all of the leak checks. If necessary, do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the parking brake set.

- (a) Listen for internal hydraulic fluid leakage through one of the two accumulator check valves (32-44 TASK SUPPORT Figure 308).
 - 1) If internal leakage is suspected, replace the accumulator check valves as follows:
 - a) For hydraulic system B, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - b) Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
 - c) Replace the accumulator check valve(s) that has a leak.

EFFECTIVITY
SIA ALL

32-44 TASK 802

D633A103-SIA

Page 209
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- d) Do the Repair Confirmation at the end of this task.
- 2) If internal leakage is not suspected, then continue.
- (b) Listen for internal hydraulic fluid leakage within the brake accumulator pressure relief valve. Specially look on the return port (32-44 TASK SUPPORT Figure 309).
 - 1) If internal leakage is suspected, replace the brake accumulator pressure relief valve. These are the tasks:
 - Brake Accumulator Pressure Relief Valve Removal, AMM TASK 32-41-71-000-801
 - Brake Accumulator Pressure Relief Valve Installation, AMM TASK 32-41-71-420-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If internal leakage is not suspected, then continue.
- (c) Listen for internal hydraulic fluid leakage within the auto brake pressure control module. Specially look on the return port (32-44 TASK SUPPORT Figure 310).
 - 1) If internal leakage is suspected, replace the auto brake pressure control module. These are the tasks:
 - Autobrake Pressure Control Module Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If internal leakage is not suspected, then continue.
- (d) Listen for internal hydraulic fluid bypass at the left and right brake metering valves. Specially look on the system B brake pressure and return ports (32-44 TASK SUPPORT Figure 304).

NOTE: Make sure that the brake metering valve(s) fully return to the stops (off position) when the brake pedals are released. If they do not return to the stops, friction can exist in the valve or system and must be addressed.

NOTE: Each port on the metering valve may have a marking of the designated hydraulic system, and it may not correspond to the hydraulic system used on the aircraft. Refer to 32-44 TASK SUPPORT Figure 304 for the correct connection.

 - 1) If internal leakage is suspected, do these tasks:
 - Brake Metering Valve Removal, AMM TASK 32-41-31-000-801
 - Brake Metering Valve Installation, AMM TASK 32-41-31-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If internal leakage is not suspected, then continue.
- (4) Replace the accumulator check valves as follows (32-44 TASK SUPPORT Figure 308):

NOTE: The most common cause of fast accumulator bleed down is a leaking accumulator check valve. It is recommended to replace both accumulator check valves at the same time.

 - (a) For hydraulic system B, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (b) Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
 - (c) Replace the accumulator check valves.

EFFECTIVITY
SIA ALL

32-44 TASK 802

D633A103-SIA

Page 210
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (d) Do the Repair Confirmation at the end of this task.
- (5) Do a check for internal leakage through the accumulator pressure relief valve as follows (32-44 TASK SUPPORT Figure 309):
- (a) Disconnect and cap the output port of the accumulator pressure relief valve.
- (b) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released.
- 1) If the brake accumulator pressure decreases within limits, then do these tasks:
- Brake Accumulator Pressure Relief Valve Removal, AMM TASK 32-41-71-000-801
 - Brake Accumulator Pressure Relief Valve Installation, AMM TASK 32-41-71-420-801
- a) Do the Repair Confirmation at the end of this task.
- 2) If the brake accumulator pressure decreases too rapidly, connect again the hydraulic line to the output port of the accumulator pressure relief valve and continue.
- (6) Do a check for internal leakage through the auto brake pressure control module (32-44 TASK SUPPORT Figure 310).
- (a) For hydraulic systems A and B, do these tasks:
- Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805
 - Hydraulic Reservoirs Depressurization, AMM TASK 29-09-00-860-802
- (b) Push the Captain's or First Officer's left and right brake pedals to the stops several times until the brakes do not move. This will release the hydraulic pressure at the accumulator.
- (c) Disconnect the check valve from the auto brake pressure control module return port and keep the check valve connected to the hydraulic tube.
- NOTE: Keep the auto brake pressure control module return port open to the environment.
- (d) Pressurize the hydraulic system B. These are the tasks:
- Hydraulic Reservoirs Pressurization, AMM TASK 29-09-00-860-801
 - Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801
- (e) If there is hydraulic fluid leakage from the open return port of the auto brake pressure control module, replace the module. These are the tasks:
- Autobrake Pressure Control Module Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801
- 1) Do the Repair Confirmation at the end of this task.
- (f) If there is no hydraulic fluid leak at the open return port of the auto brake pressure control module, connect again the check valve to the return port and continue.
- (7) Replace suspect brake metering valve(s) (32-44 TASK SUPPORT Figure 304). These are the tasks:
- NOTE: Internal leakage through the brake metering valves is unlikely during the parking brake released test.
- NOTE: It is not recommended to disconnect and cap brake metering valve ports because of the geometry of the hydraulic tubing.
- Brake Metering Valve Removal, AMM TASK 32-41-31-000-801

EFFECTIVITY
SIA ALL

32-44 TASK 802

D633A103-SIA

Page 211
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

- Brake Metering Valve Installation, AMM TASK 32-41-31-400-801

(a) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

- (1) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released.
 - (a) If the accumulator pressure decreases within the limit, then you corrected the problem. No further action is necessary.
 - (b) If the accumulator pressure decreases faster than permitted, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

803. PARK BRAKE Light Stays OFF When the Parking Brake is Set - Fault Isolation

A. Description

- (1) Normal operation of the PARK BRAKE Light on the Control Stand is as follows:
 - (a) Light comes ON when the Parking Brake is set.
 - (b) Light goes OFF when the Parking Brake is released.

B. Possible Causes

- (1) Parking Brake Light
- (2) Parking Brake Switch
- (3) Parking Brake Valve
- (4) Wiring

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) WDM 32-44-11

E. Fault Isolation Procedure

- (1) If the Parking Brake Light Lamp is defective, replace the lamp.
 - (a) Do the Repair Confirmation at the end of this task.
- (2) Replace the Parking Brake Switch, S100. These are the tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Replace the Parking Brake Valve, V11. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - (a) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-44 TASKS 802-803

D633A103-SIA

Page 212
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (4) Examine the wiring between the Parking Brake Valve, V11 and Connector D43016J on the E1-4 Shelf as follows (WDM 32-44-11):

MAIN WHEEL

WELL

D928

pin 3 pin 1
pin 2 pin 2

E1-4 SHELF

D43016J

MAIN WHEEL

WELL

D928

pin 1 GD308-DC

- (a) If you find a problem with the wiring, then repair the wiring (SWPM 20-10-13).
(b) Do the Repair Confirmation at the end of this task.
- (5) If the lever is in POS1 (valve open) position, examine the wiring between Connector D40826J on the E1-4 Shelf and Connector D40822P at the P6, Load Control Center - Right (LCC-R) as follows (WDM 32-44-11):

E1-4 SHELF

D40826J

pin 3 pin 13

LCC-R (P6)

D40822P

- (a) If you find a problem then repair the wiring as necessary (SWPM 20-10-13).
1) Do the Repair Confirmation at the end of this task.
- (6) If the lever is in POS2 (valve closed), examine the wiring between Connector D40826J on the E1-4 Shelf and Connector D40822P at the P6, Load Control Center - Right (LCC-R) as follows (WDM 32-44-11):

E1-4 SHELF

D40826J

pin 4 pin 13

LCC-R (P6)

D40822P

- (a) If you find a problem, then repair the wiring as necessary (SWPM 20-10-13).
1) Do the Repair Confirmation at the end of this task.
- F. Repair Confirmation**
- (1) If the Parking Brake Light is ON when the Parking Brake is set, then you corrected the problem.
- (2) If the Parking Brake Light stays OFF when the Parking Brake is set, continue the Fault Isolation Procedure at the subsequent step.

———— **END OF TASK** ————

804. PARK BRAKE Light Stays ON When the Parking Brake is Released - Fault Isolation

A. Description

- (1) The Normal Operation of the PARK BRAKE Light on the Control Stand is as follows:
- (a) Light comes ON when the Parking Brake is set.

EFFECTIVITY
SIA ALL

32-44 TASKS 803-804

D633A103-SIA

Page 213
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

(b) Light goes OFF when the Parking Brake is released.

B. Possible Causes

- (1) Defective Parking Brake Motor/Valve Unit
- (2) Wiring

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) WDM 32-44-11

E. Fault Isolation Procedure

- (1) Examine the position of the Manual Override Lever for the Parking Brake Valve located in the Right Wheel Well.
 - (a) If the valve lever is in the POS1 (Valve Open), disconnect the electrical connector D928 at the Parking Brake Valve.
 - 1) If the PARK BRAKE Light goes OFF, replace the Parking Brake Motor/Valve Unit.
 - 2) If the PARK BRAKE Light stays ON, examine and repair the wiring between pin 10 of the valve connector D928, the parking brake light, and the Parking Brake Close Sense Relay R613 (WDM 32-44-11).
 - (b) If the valve lever is in the POS2 (Valve Closed), disconnect the electrical connector D928 at the Parking Brake Valve.
 - 1) If 28V DC is present at pin 3 of the D928 Valve Connector, D928 and there is continuity between pin 1 of the valve connector D928 and Ground, replace the Parking Brake Motor/Valve Unit (WDM 32-44-11).
 - 2) If 28V DC is NOT present at pin 3 of the valve connector D928, do these steps:
 - a) Make sure that the Parking Brake System is correctly adjusted (Parking Brake System Adjustment, AMM TASK 32-44-00-820-801).
 - b) Examine and repair the wiring from pin 3 of the Valve Connector D928 to the LANDING GEAR PARKING BRAKE circuit breaker, C01346 (WDM 32-44-11).
 - 3) If there is no continuity between pin 1 of the valve connector D928 and ground, examine and repair the circuit from pin 1 of the valve connector D928 and structure ground (WDM 32-44-11).

F. Repair Confirmation

- (1) If the Parking Brake Light goes OFF when the Parking Brake is released, then you corrected the problem.
- (2) If the Parking Brake Light stays ON when the Parking Brake is released, continue the Fault Isolation Procedure at the subsequent step.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-44 TASK 804

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 214
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

805. Brake Pressure Indication Low/Zero - Fault Isolation

A. Description

- (1) This task is for these observed conditions:
 - (a) The Brake Pressure Indicator is Low/Zero with the Parking Brake released.
 - (b) The Brake Pressure Indicator is Low/Zero with the Parking Brake set.
- (2) Refer to SDS 32-41-00 for detailed information on the Hydraulic Brake System.

B. Possible Causes

- (1) Nitrogen Gas Leak at a Tube Connection
- (2) Brake Accumulator Pressure Transducer, T185
- (3) Brake Accumulator

C. Related Data

- (1) SSM 32-40-00

D. Fault Isolation Procedure

- (1) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801
NOTE: Do this task first to make sure that the Accumulator is correctly serviced with the piston fully against its internal stop before you do a check for Nitrogen Gas Leakage.
- (2) Do a check for Nitrogen Gas Leakage at these locations:
 - The Gas Pressure Tube connection to the Brake Accumulator.
 - The Gas Pressure Tube connections to the Manifold Assembly.
 - The Gas Pressure Tube connections to the Brake Accumulator Pressure Gage.
 - The Brake Accumulator Charging Valve.
 - The Brake Accumulator Pressure Gage Dial face and Gage Body.
 - (a) If you find a Nitrogen Gas Leak, then do these steps:
 - 1) Repair the leak.
 - 2) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - 3) If the Brake Pressure indication does not show Low/Zero on subsequent flights, then you corrected the problem.
 - (b) If you do not find a Nitrogen Gas Leak, then continue.
- (3) Replace the Brake Accumulator Pressure Transducer, T185. These are the tasks:
 - Brake Accumulator Pressure Transmitter Removal, AMM TASK 32-41-53-000-801
 - Brake Accumulator Pressure Transmitter Installation, AMM TASK 32-41-53-400-801
 - (a) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - 1) If the Brake Pressure indication does not show Low/Zero on subsequent flights, then you corrected the problem.
 - 2) If the Brake Pressure indication shows Low/Zero on subsequent flights, then continue.
- (4) Replace the Brake Accumulator. These are the tasks:
 - Hydraulic Brake Accumulator Removal, AMM TASK 32-41-51-000-801
 - Hydraulic Brake Accumulator Installation, AMM TASK 32-41-51-420-801
 - (a) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.

EFFECTIVITY
SIA ALL

32-44 TASK 805

D633A103-SIA

Page 215
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) If the Brake Pressure indication does not show Low/Zero on subsequent flights, then you corrected the problem.

————— **END OF TASK** —————

806. Brake Pressure Indication Problem - Fault Isolation

A. Description

- (1) SDS 32-41-00

B. Possible Causes

- (1) Brake accumulator pressure gage
- (2) Brake accumulator pressure transducer, T185

C. Related Data

- (1) SSM 32-40-00

D. Fault Isolation Procedure

- (1) Replace the brake accumulator pressure gage.
 - (a) If the brake pressure indication operates correctly, then you corrected the fault.
 - (b) If the brake pressure indication does not operate correctly, then continue.
- (2) Replace the brake accumulator pressure transducer, T185. These are the tasks:
 - Brake Accumulator Pressure Transmitter Removal, AMM TASK 32-41-53-000-801
 - Brake Accumulator Pressure Transmitter Installation, AMM TASK 32-41-53-400-801
- (a) If the brake pressure indication operates correctly, then you corrected the fault.

————— **END OF TASK** —————

807. Parking Brake Lever Problem - Fault Isolation

A. Description

- (1) SDS 32-44-00

B. Possible Causes

- (1) Parking brake system adjustment
- (2) Parking brake lever
- (3) Parking brake latch mechanism

C. Related Data

- (1) SSM 32-44-11

D. Fault Isolation Procedure

- (1) Do this task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801.
 - (a) If the parking brake lever operates, then you corrected the fault.
 - (b) If the parking brake lever does not operate, then continue.
- (2) Replace the parking brake lever. These are the tasks:
 - Parking Brake Lever Removal, AMM TASK 32-44-11-000-801
 - Parking Brake Lever Installation, AMM TASK 32-44-11-400-801
- (a) If the parking brake lever operates, then you corrected the fault.
- (b) If the parking brake lever does not operate, then continue.

EFFECTIVITY
SIA ALL

32-44 TASKS 805-807

D633A103-SIA

Page 216
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (3) Replace the parking brake latch mechanism. These are the tasks:
 - Parking Brake Latch Removal, AMM TASK 32-44-11-000-803
 - Parking Brake Latch Installation, AMM TASK 32-44-11-400-803
- (a) If the parking brake lever operates, then you corrected the fault.

————— **END OF TASK** —————

808. Brakes - Abnormal Noise or Vibration During Normal Operation

A. Description

- (1) This procedure systematically isolates components within the hydraulic brake system that can lead to abnormal noise or vibration when pushing the brake pedals.
- (2) In particular, this procedure limits the root cause of the noise coming from the l/h brake metering valve when pushing the brake pedals.
- (3) If the parking brake is set with both hydraulic systems A and B pressurized, do not shut the two systems off simultaneously. Hydraulic system pressure B decreases at a higher rate than hydraulic system A, causing the Alternate Source Select Valve to shuttle to the alternate position. This allows some accumulator fluid to release the accumulator circuit as the brakes momentarily release and reapply. To prevent this condition, turn off hydraulic system A at least 10 seconds before turning off hydraulic system B.

B. Possible Causes

- (1) Leak in the hydraulic system
- (2) Gas in the hydraulic system
- (3) Hydraulic brake accumulator
- (4) Hydraulic brake accumulator check valves.

C. Initial Evaluation

- (1) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801
 - (a) If there is no abnormal noise or vibration, then there was an intermittent fault.
 - (b) If there is abnormal noise or vibration, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

- (1) Do this task: Main Landing Gear Brake Fast Check (Wheel Installed on the Airplane), AMM TASK 32-41-41-700-802.
 - (a) Repair any problems that you find.
 - (b) Do the Repair Confirmation at the end of this task.
- (2) Do this task to bleed the hydraulic brake system: Hydraulic Brake System - Bleeding Upstream of the Antiskid Valves, AMM TASK 32-41-00-870-801.
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Do this task to bleed the hydraulic brake system: Normal (System B) Hydraulic Brake System - Bleeding, AMM TASK 32-41-00-870-802.
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Do this task to bleed the hydraulic brake system: Alternate (System A) Hydraulic Brake System - Bleeding, AMM TASK 32-41-00-870-803.
 - (a) Do the Repair Confirmation at the end of this task.
- (5) Replace the Hydraulic Brake Accumulator. These are the tasks:

EFFECTIVITY
SIA ALL

32-44 TASKS 807-808

D633A103-SIA

Page 217
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- Hydraulic Brake Accumulator Removal, AMM TASK 32-41-51-000-801.
- Hydraulic Brake Accumulator Installation, AMM TASK 32-41-51-420-801.
- (a) Do the Repair Confirmation at the end of this task.
- (6) Replace the Brake Accumulator Pressure Relief Valve. These are the tasks:
 - Brake Accumulator Pressure Relief Valve Removal, AMM TASK 32-41-71-000-801.
 - Brake Accumulator Pressure Relief Valve Installation, AMM TASK 32-41-71-420-801.
- (a) Do the Repair Confirmation at the end of this task.
- (7) Replace the Accumulator Isolation Valve. These are the tasks:
 - Accumulator Isolation Valve Removal, AMM TASK 32-41-91-000-801.
 - Accumulator Isolation Valve Installation, AMM TASK 32-41-91-420-801.
- (a) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

- (1) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801.
 - (a) If there is no abnormal noise or vibration, then you have corrected the problem.
 - (b) If there is abnormal noise or vibration, then continue the Fault Isolation procedure at the subsequent step.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

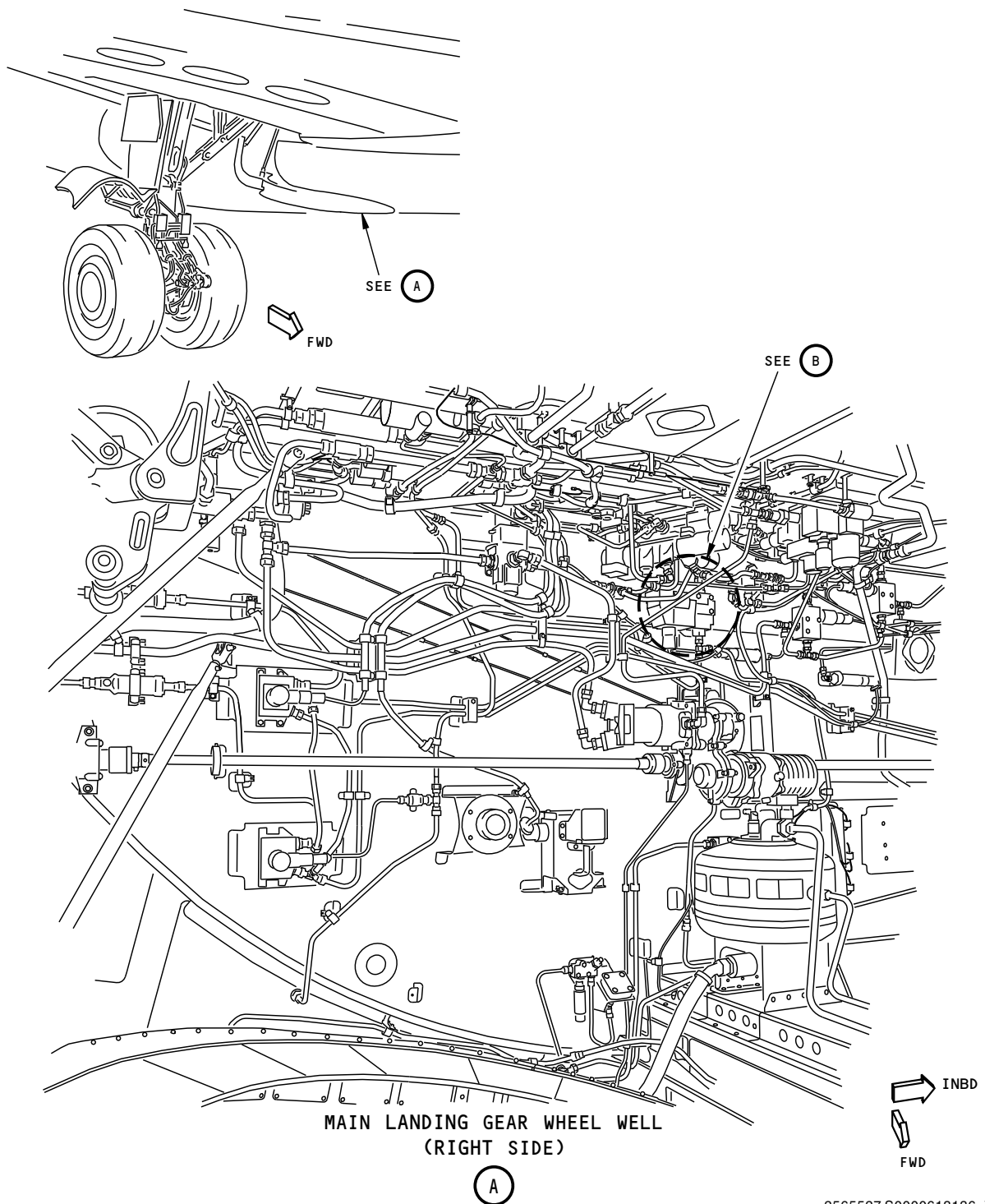
32-44 TASK 808

D633A103-SIA

Page 218
Oct 15/2023



737-600/700/800/900
FAULT ISOLATION MANUAL



2565527 S0000613136_V1

Parking Brake Shutoff Valve
Figure 301/32-44-00-990-804 (Sheet 1 of 2)

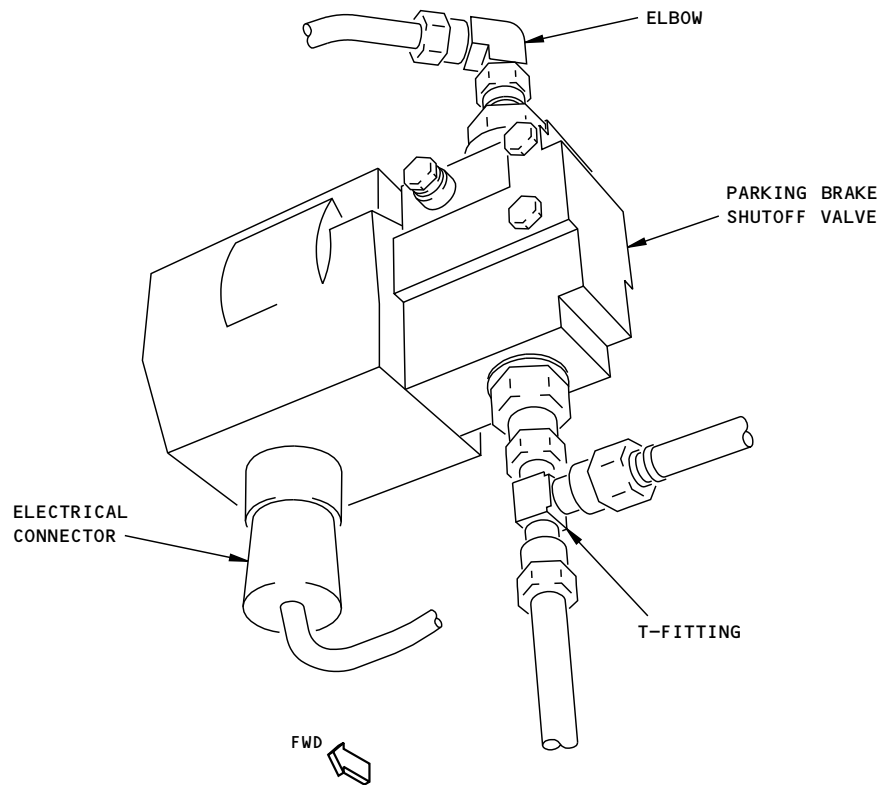
EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

D633A103-SIA

Page 301
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



PARKING BRAKE SHUTOFF VALVE

(B)

2565535 S0000613138_V1

Parking Brake Shutoff Valve
Figure 301/32-44-00-990-804 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

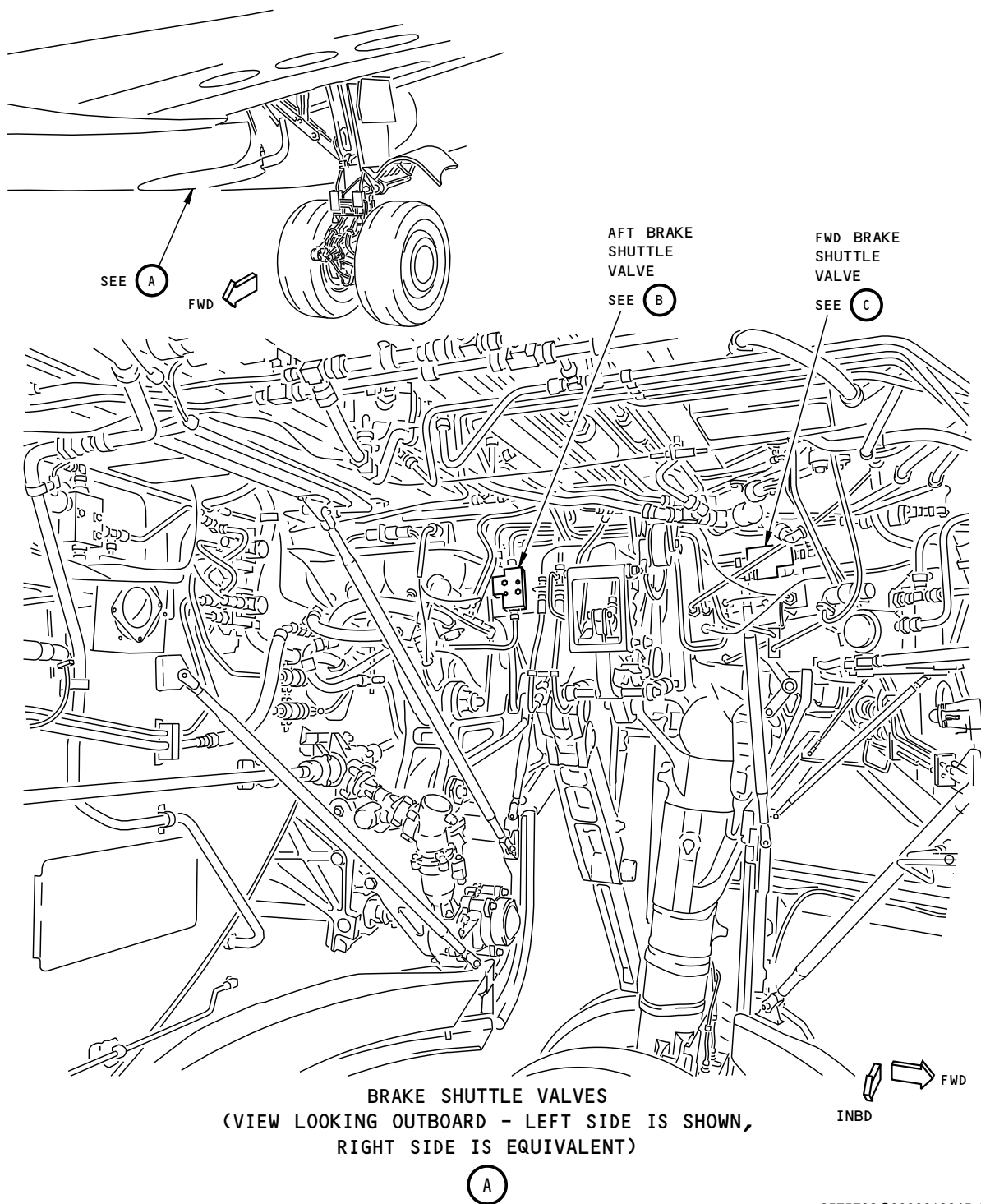
32-44 TASK SUPPORT

D633A103-SIA

Page 302
 Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



2575793 S0000619245_V1

Brake Shuttle Valves
Figure 302/32-44-00-990-805 (Sheet 1 of 2)

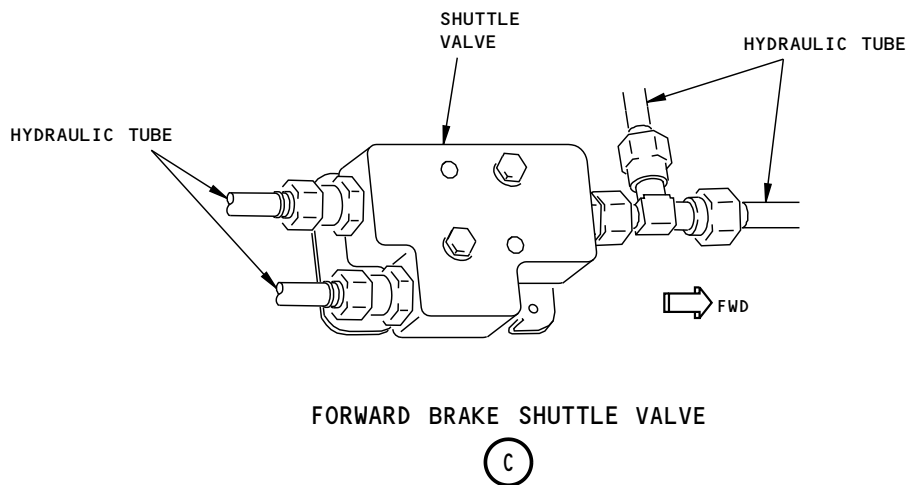
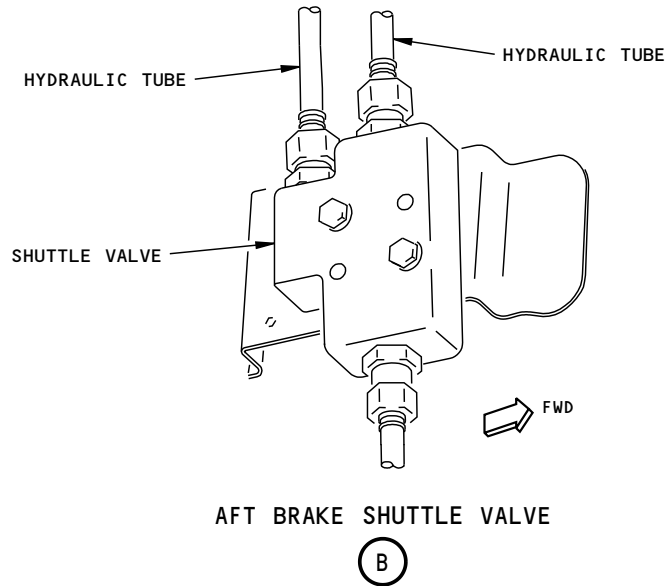
EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

D633A103-SIA

Page 303
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



2575797 S0000619246_V1

Brake Shuttle Valves
Figure 302/32-44-00-990-805 (Sheet 2 of 2)

	EFFECTIVITY
SIA ALL	

32-44 TASK SUPPORT

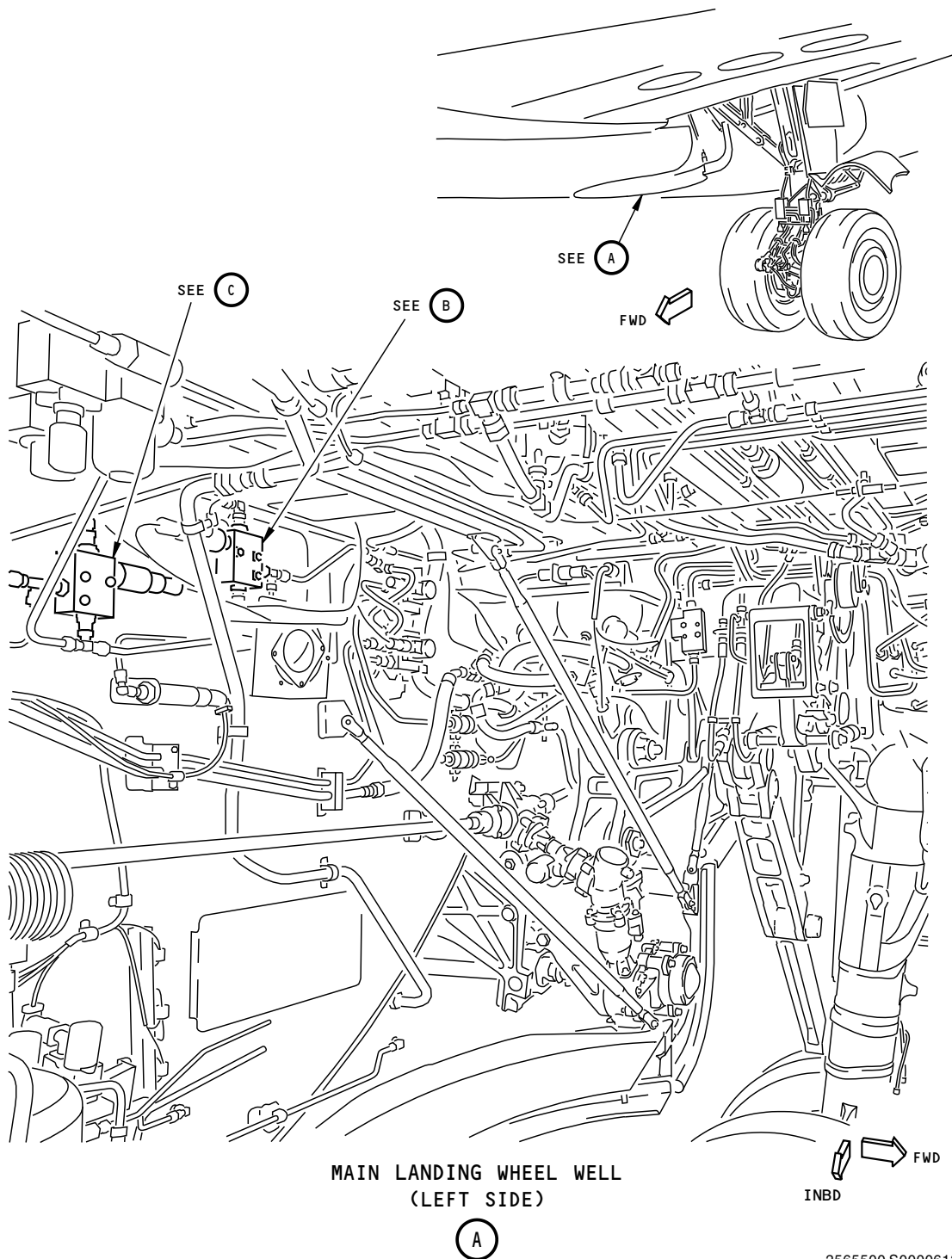
D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 304
 Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



2565500 S0000613133_V1

Auto Brake Shuttle Valves
Figure 303/32-44-00-990-806 (Sheet 1 of 2)

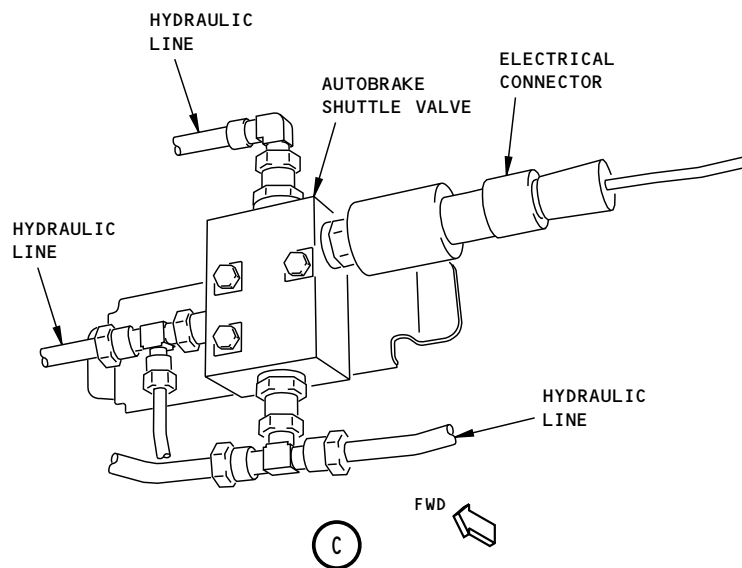
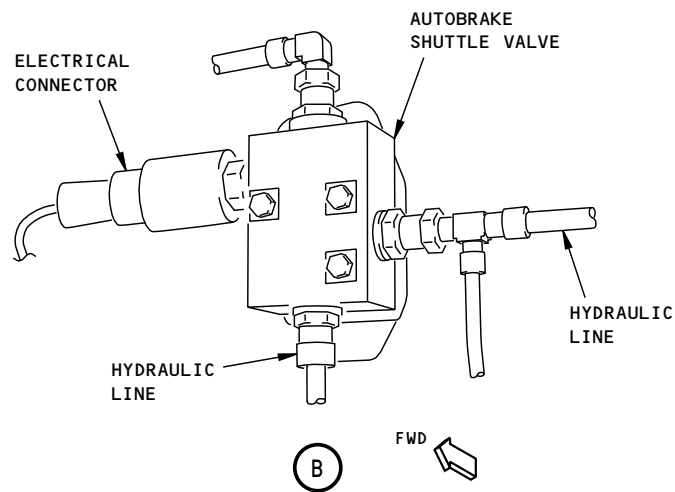
EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

D633A103-SIA

Page 305
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



2565506 S0000613134_V1

Auto Brake Shuttle Valves
Figure 303/32-44-00-990-806 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

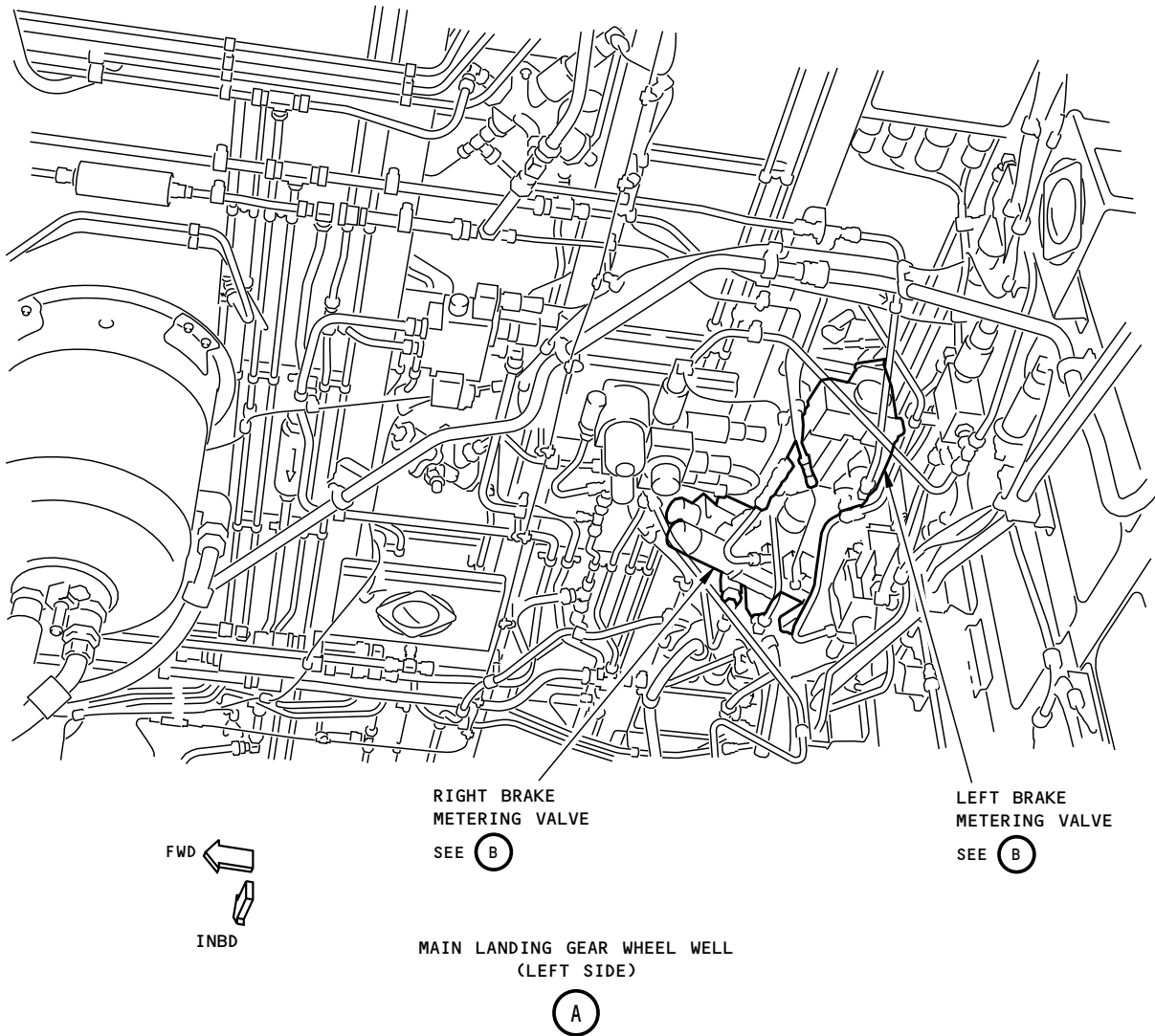
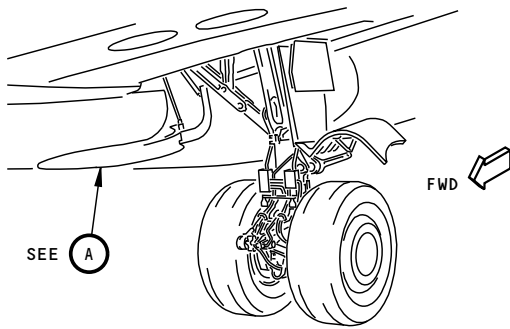
32-44 TASK SUPPORT

D633A103-SIA

Page 306
Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



2565536 S0000613141_V1

Brake Metering Valve Locations
Figure 304/32-44-00-990-807 (Sheet 1 of 2)

EFFECTIVITY
SIA ALL

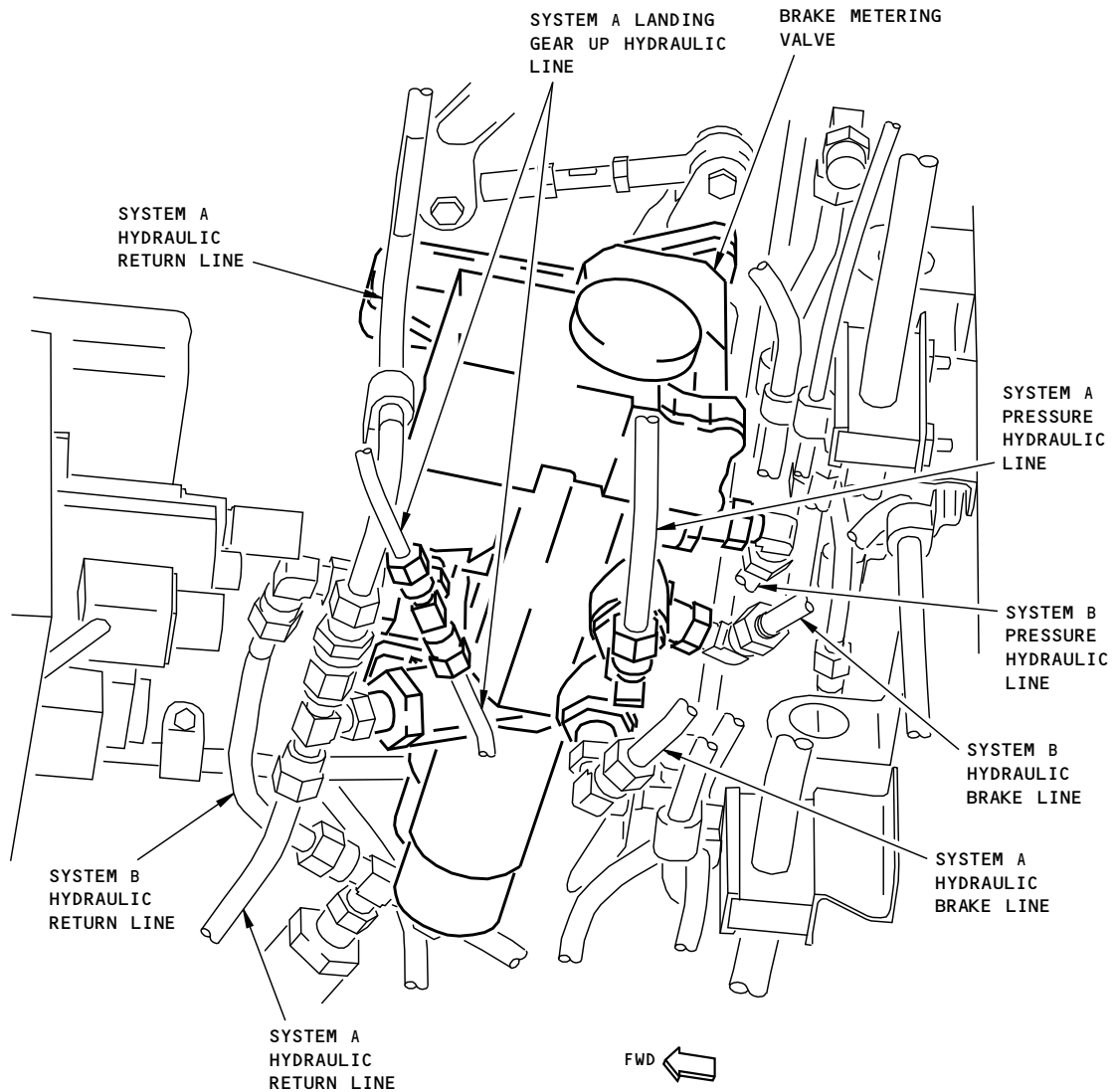
32-44 TASK SUPPORT

D633A103-SIA

Page 307
Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



LEFT BRAKE METERING VALVE
(RIGHT BRAKE METERING VALVE IS EQUIVALENT)

(B)

2565538 S0000613142_V1

Brake Metering Valve Locations
Figure 304/32-44-00-990-807 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

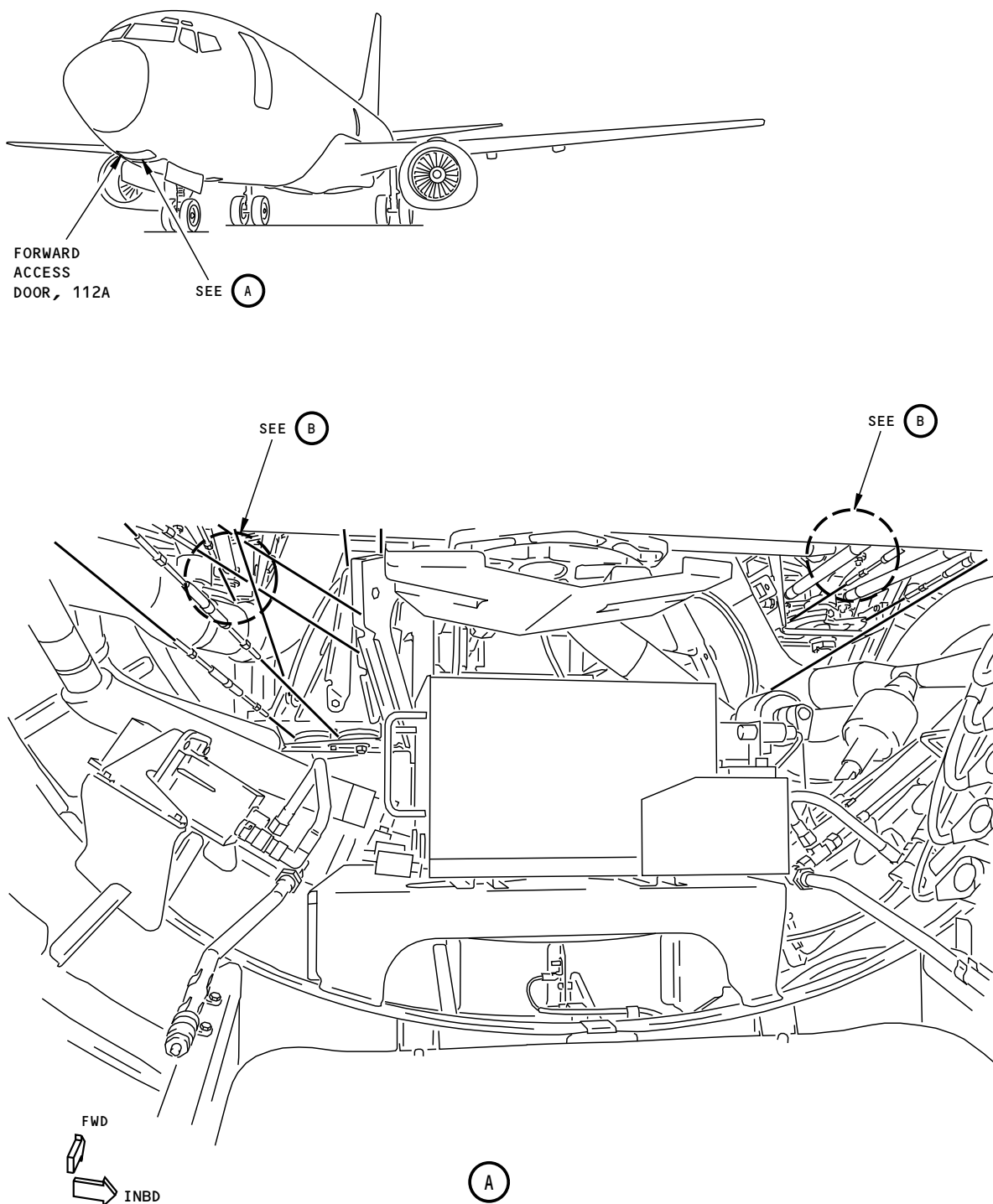
32-44 TASK SUPPORT

D633A103-SIA

Page 308
Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



2565477 S0000613112_V1

Brake System Forward Rig Pin Locations
Figure 305/32-44-00-990-808 (Sheet 1 of 2)

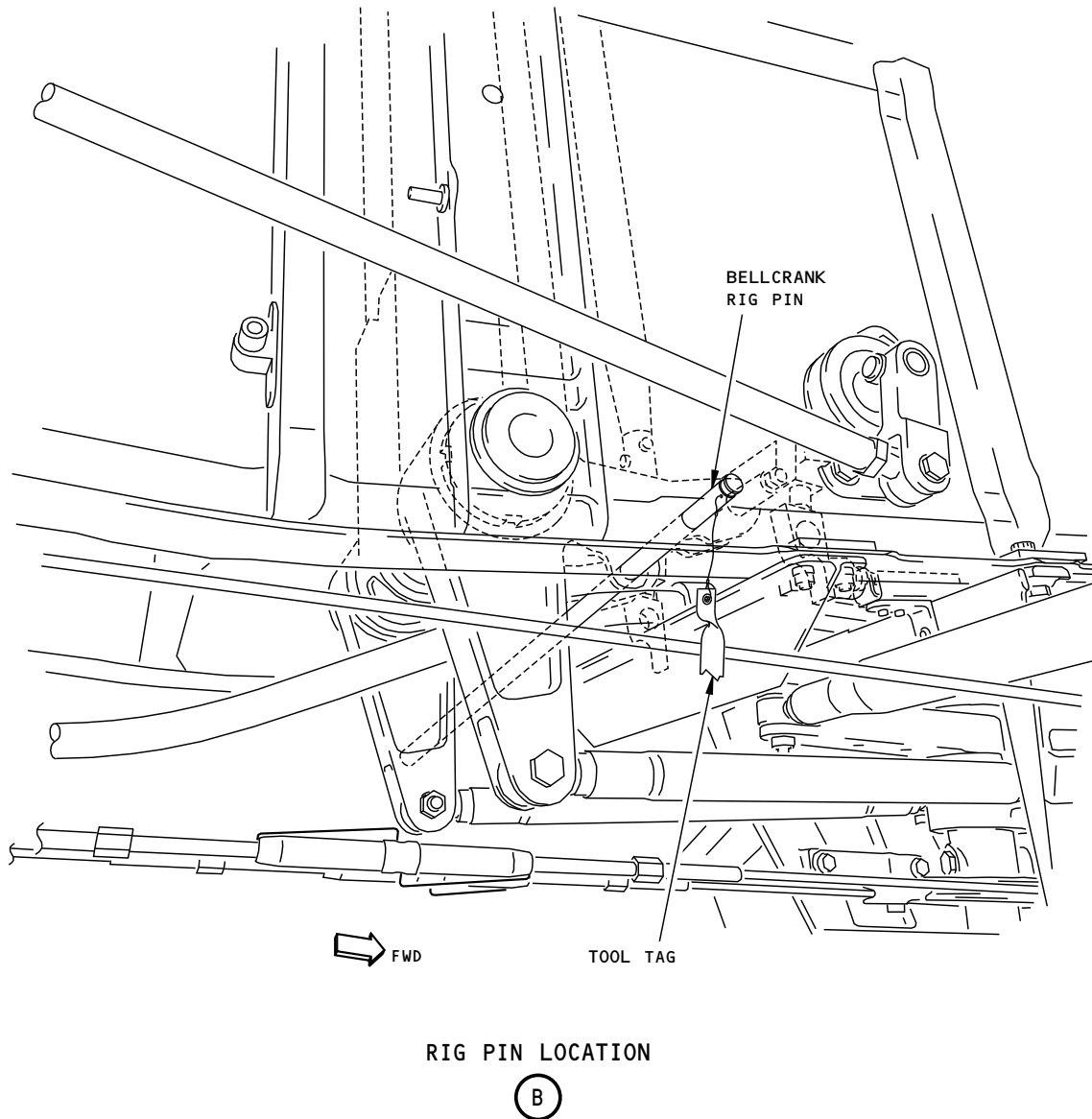
EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

D633A103-SIA

Page 309
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



2565492 S0000613113_V1

Brake System Forward Rig Pin Locations
Figure 305/32-44-00-990-808 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

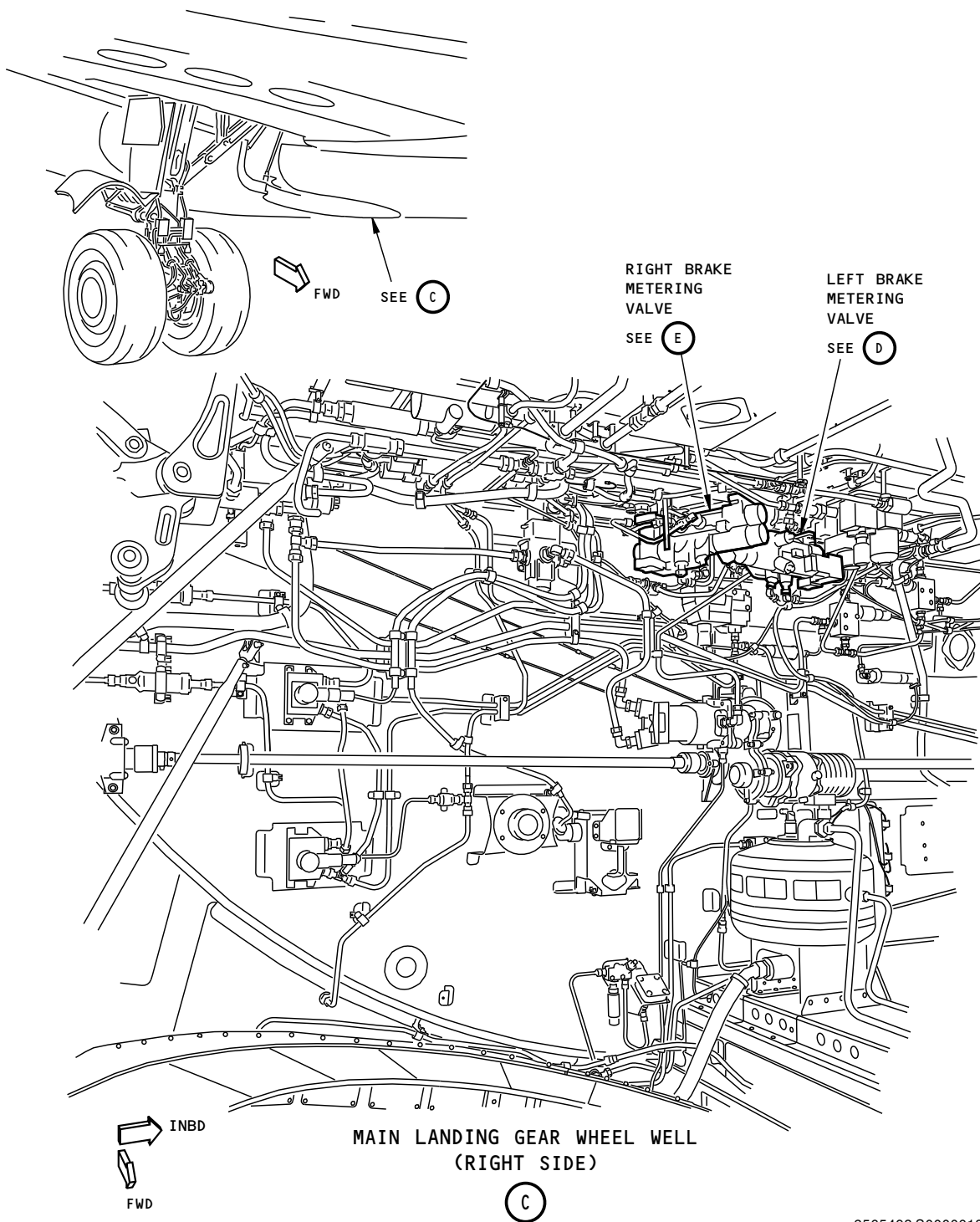
32-44 TASK SUPPORT

D633A103-SIA

Page 310
 Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



2565493 S0000613123_V1

Brake System Forward Rig Pin Locations
Figure 306/32-44-00-990-809 (Sheet 1 of 2)

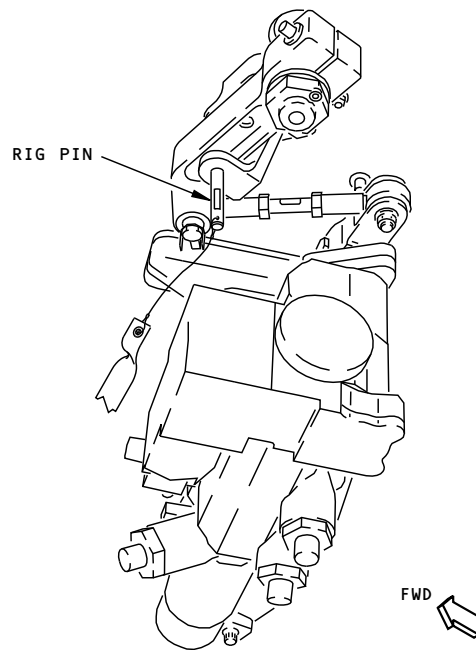
EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

D633A103-SIA

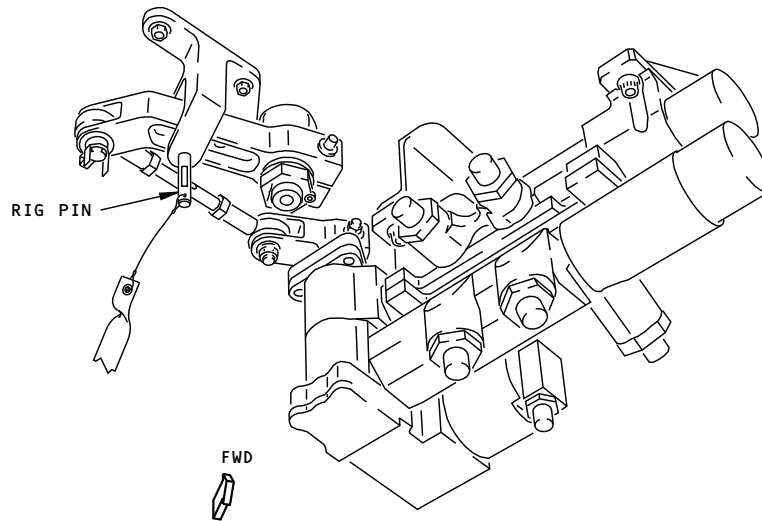
Page 311
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



LEFT BRAKE METERING VALVE

D



RIGHT BRAKE METERING VALVE

E

2565496 S0000613124_V1

Brake System Forward Rig Pin Locations
Figure 306/32-44-00-990-809 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

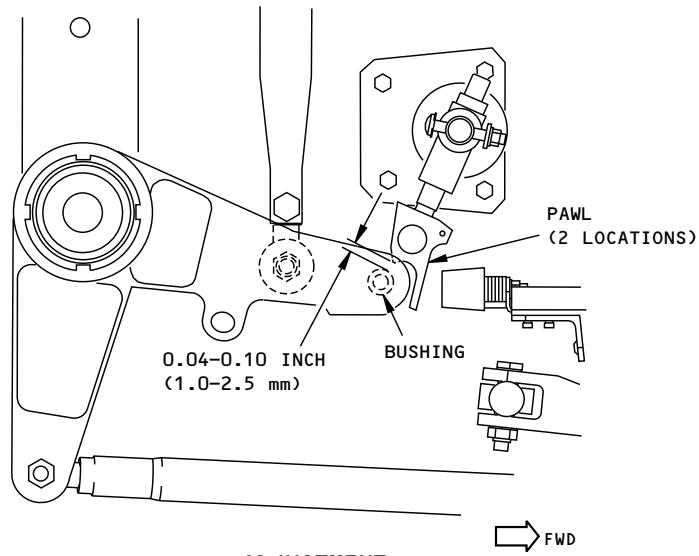
32-44 TASK SUPPORT

D633A103-SIA

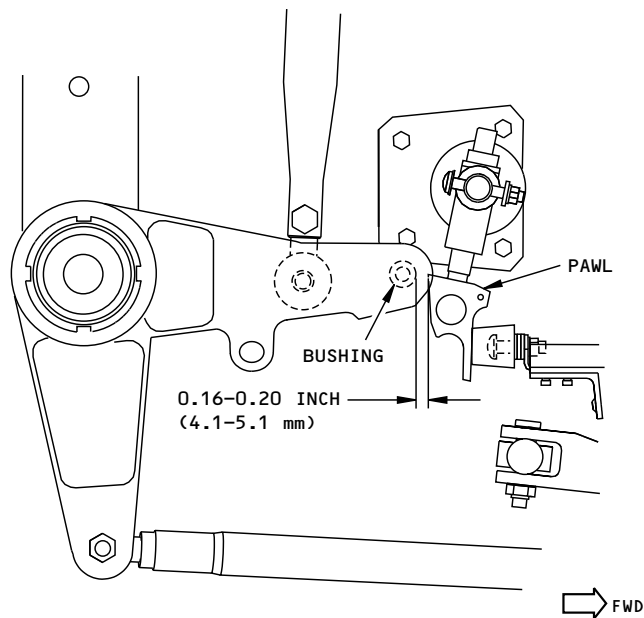
Page 312
 Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



PAWL ADJUSTMENT
(PEDALS AGAINST THE STOP POSITION)
A-A



PAWL ADJUSTMENT
(BELLCRANK TURNED SLIGHTLY)
A-A

2565522 S0000613135_V1

Parking Brake System Pawl Rigging
Figure 307/32-44-00-990-810

EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

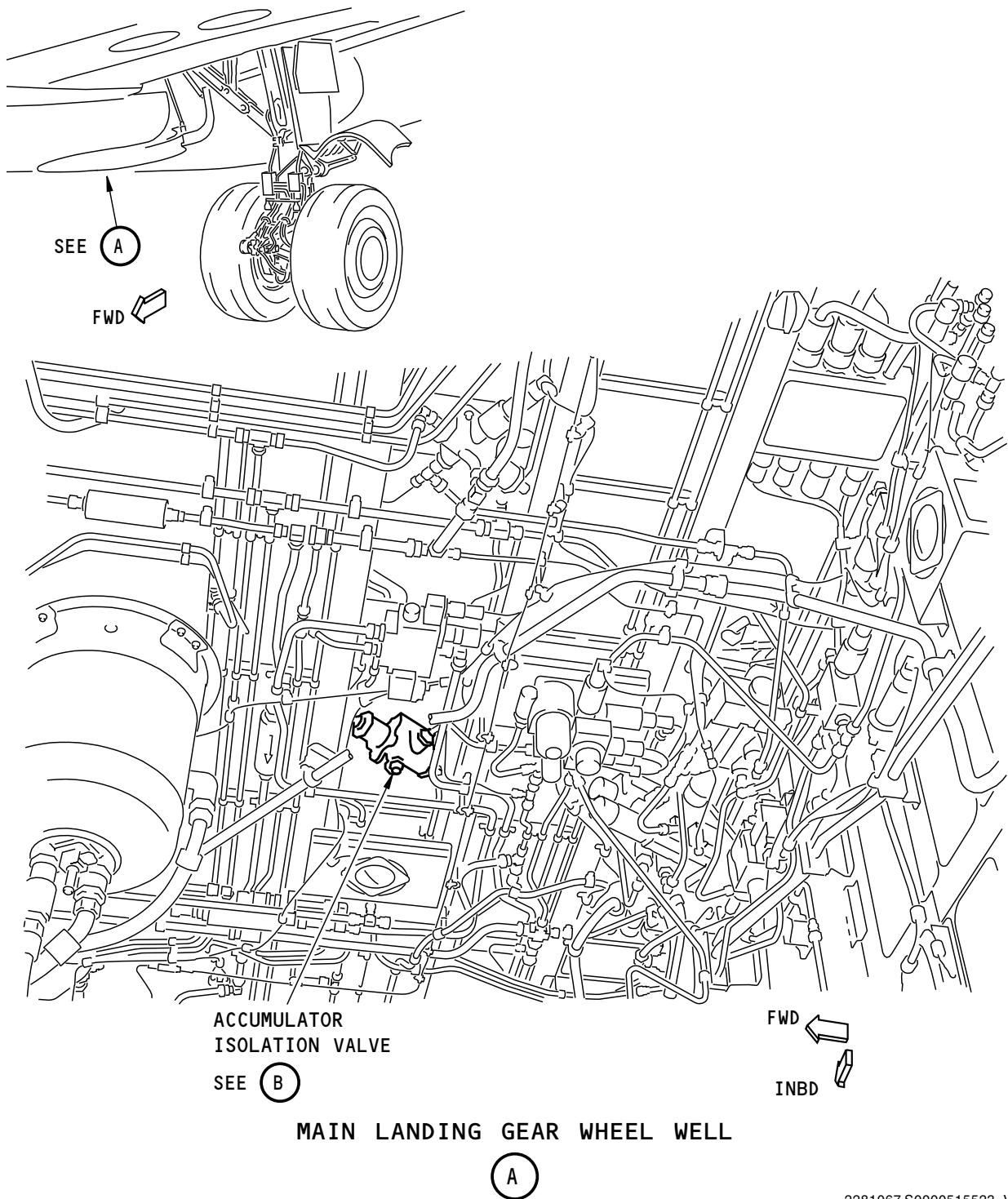
D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 313
Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



2281067 S0000515523_V1

Brake System Check Valves
Figure 308/32-44-00-990-811 (Sheet 1 of 2)

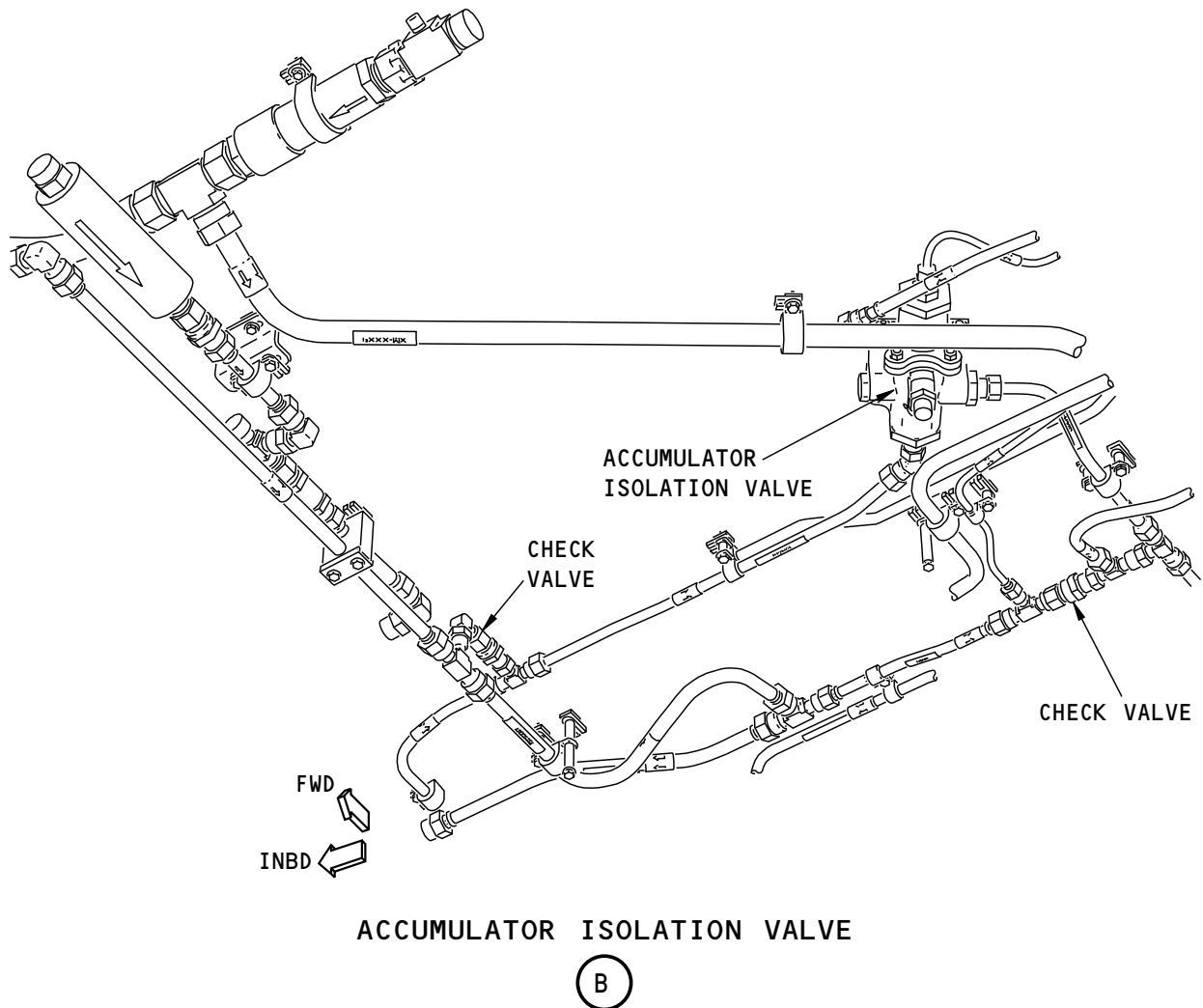
EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

D633A103-SIA

Page 314
Oct 15/2021

BOEING
 737-600/700/800/900
 FAULT ISOLATION MANUAL



L40253 S0006743783_V3

Brake System Check Valves
 Figure 308/32-44-00-990-811 (Sheet 2 of 2)

EFFECTIVITY	SIA ALL

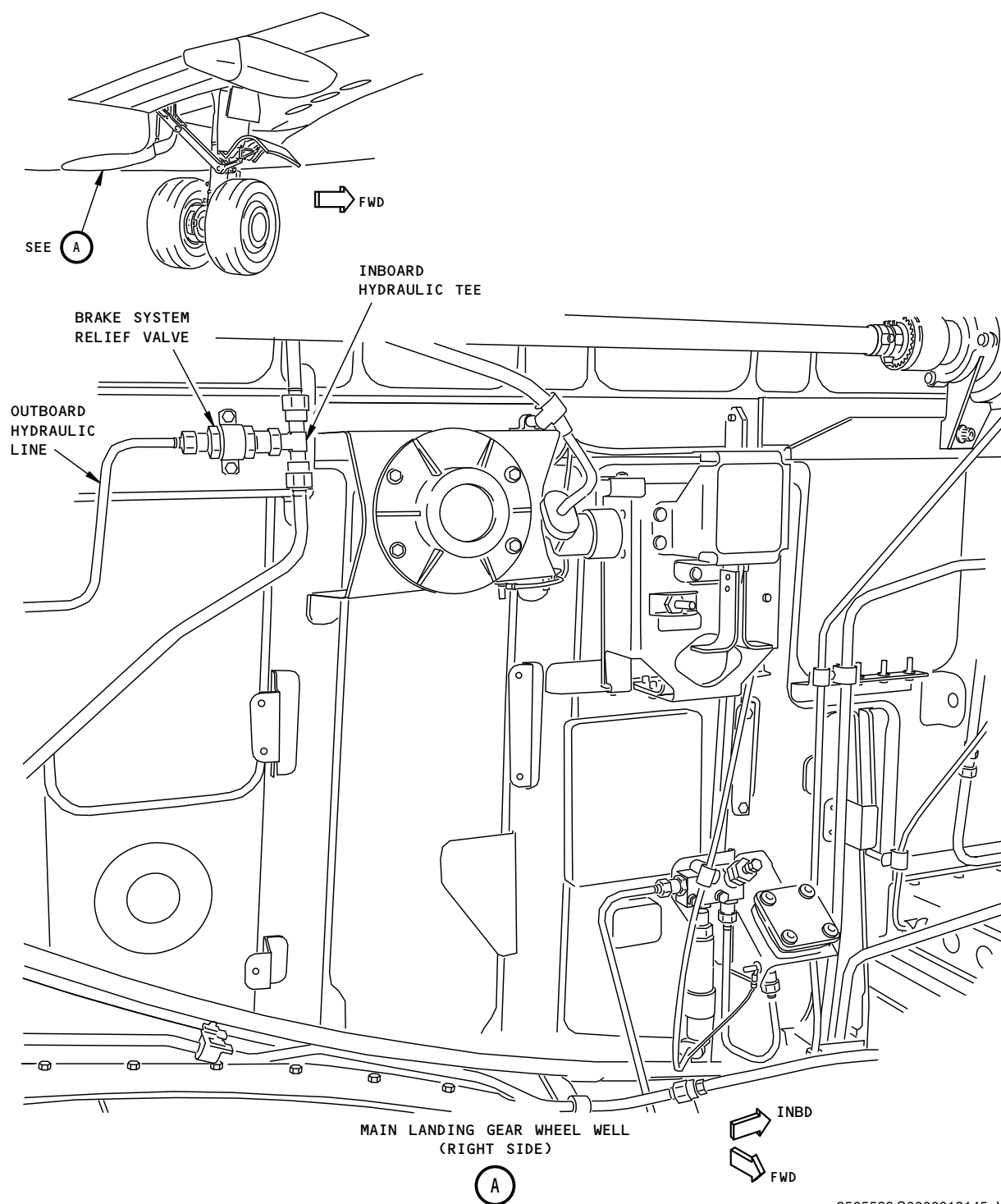
32-44 TASK SUPPORT

D633A103-SIA

Page 315
 Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



2565539 S0000613145_V1

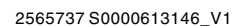
Accumulator Pressure Relief Valve
Figure 309/32-44-00-990-812

EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

D633A103-SIA

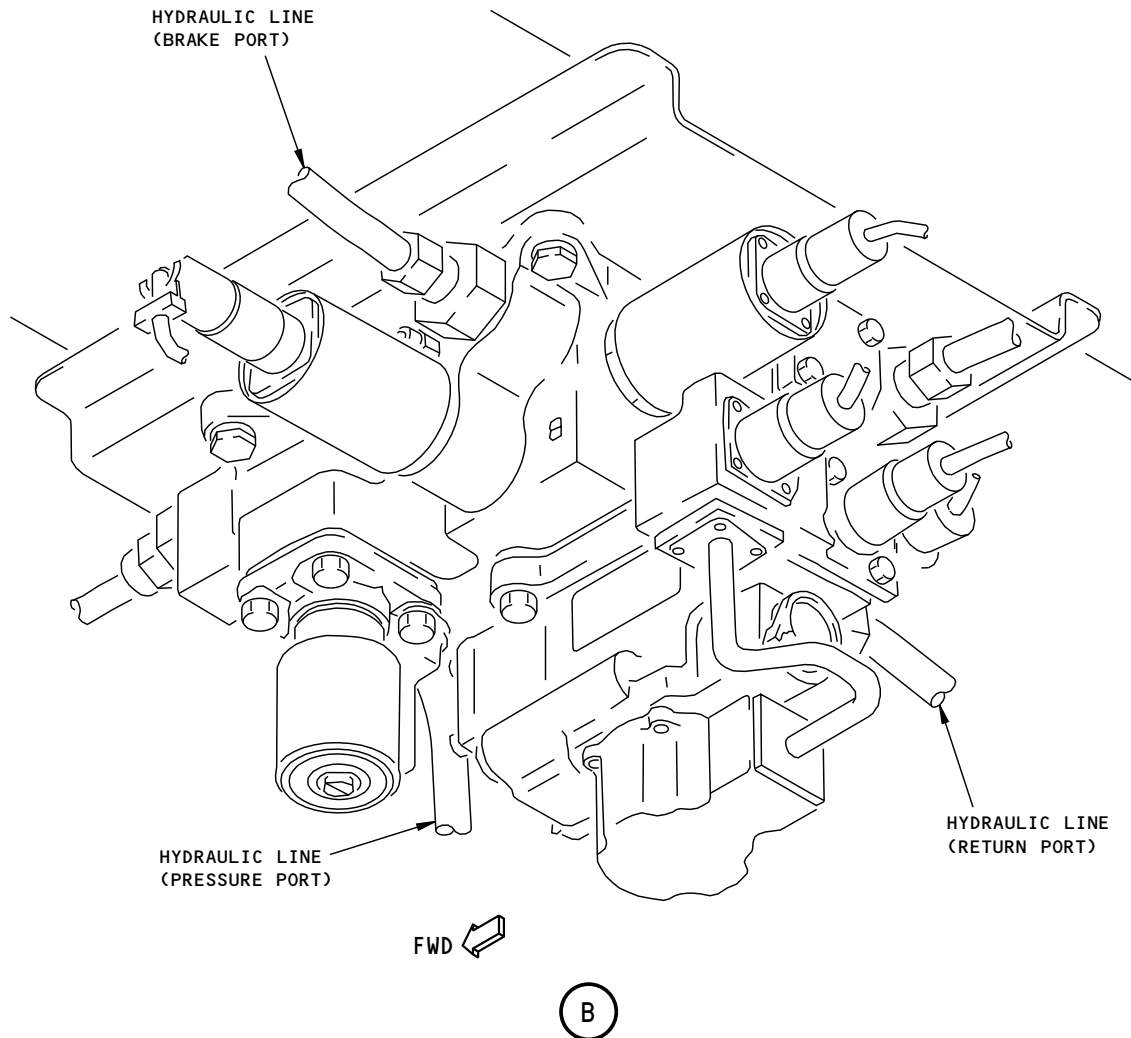
Page 316
Oct 15/2021



— EFFECTIVITY
SIA ALL

D633A103-SIA

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



2576533 S0000619230_V1

Auto Brake Pressure Control Module
Figure 310/32-44-00-990-813 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

32-44 TASK SUPPORT

D633A103-SIA

Page 318
 Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

801. Brake Temperature Monitor Unit (BTMU) BITE Procedure

A. General

- (1) The Brake Temperature Monitor Unit (BTMU) is located on the E1-3 shelf in the electronic equipment bay. The front of the BTMU has 5 LED lights: 4 sensor lights and 1 monitor light, and a selector switch.

B. Brake Temperature Monitor Unit BITE Procedure



DO NOT TOUCH THE UNIT BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (1) Do this task: ESDS Handling for Metal Encased Unit Removal, AMM TASK 20-40-12-000-802.
- (2) Do the Monitor Test:
 - (a) Get access to the main equipment center through this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door
 - (b) Put the selector switch in the MONITOR TEST position.
 - (c) Make sure all the lights on the BTMU come on.
 - 1) If one of the lights does not come on, then replace the BTMU. These are the tasks:
 - Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801
 - Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801
 - 2) If all lights do not come on, then, do this task: All LED lights stay off with selector switch set to MONITOR TEST position - Fault Isolation, 32-46 TASK 803.
 - (d) Make sure the display in the flight compartment for brake temp shows a number 5.0 or greater in each box.
 - 1) If the display shows a number of less than 5.0, then, do this task: Brake Temp indication on CDS display shows a number less than 5.0 during Bite Test - Fault Isolation, 32-46 TASK 804.
 - (e) Make sure the BRAKE TEMP light on P3-1 panel also comes on.
 - 1) If the BRAKE TEMP light does not come on, then, do this task: BRAKE TEMP light does not come ON during Bite Test - Fault Isolation, 32-46 TASK 805.
- (3) Do the Sensor Test.
 - (a) Rotate the test switch to the SENSOR TEST position
 - (b) Make sure all five LED lights come on.

NOTE: Disregard BRAKE TEMP light on P3 panel, and CDS display during this test.

 - 1) If all of the lights do not come on, then do these steps:
 - a) Tighten the connector, D3334A.
 - b) If the lights come on, then you have corrected the fault.
 - 2) If the lights remain off, then do this task: All lights on BTMU stay off with selector switch set to SENSOR TEST - Fault Isolation, 32-46 TASK 806.

————— **END OF TASK** —————

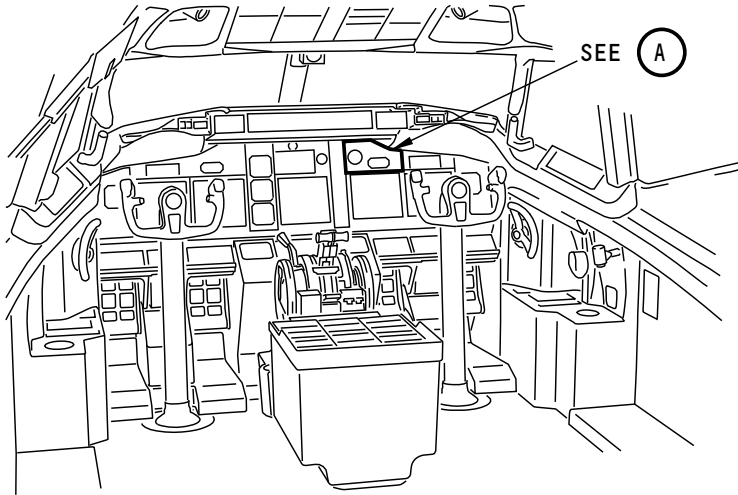
EFFECTIVITY
SIA ALL

32-46 TASK 801

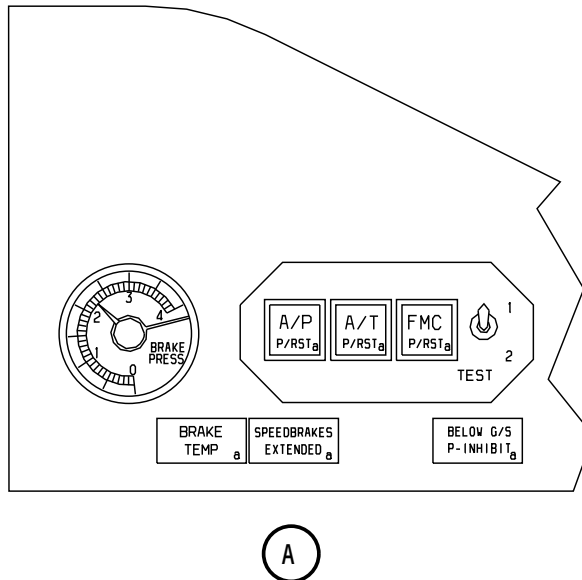
D633A103-SIA

Page 201
Feb 15/2022

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



FLIGHT COMPARTMENT



K62767 S0000147091_V1

Brake Temperature Monitoring System
Figure 201/32-46-00-990-808 (Sheet 1 of 2)

EFFECTIVITY
SIA ALL

32-46 TASK 801

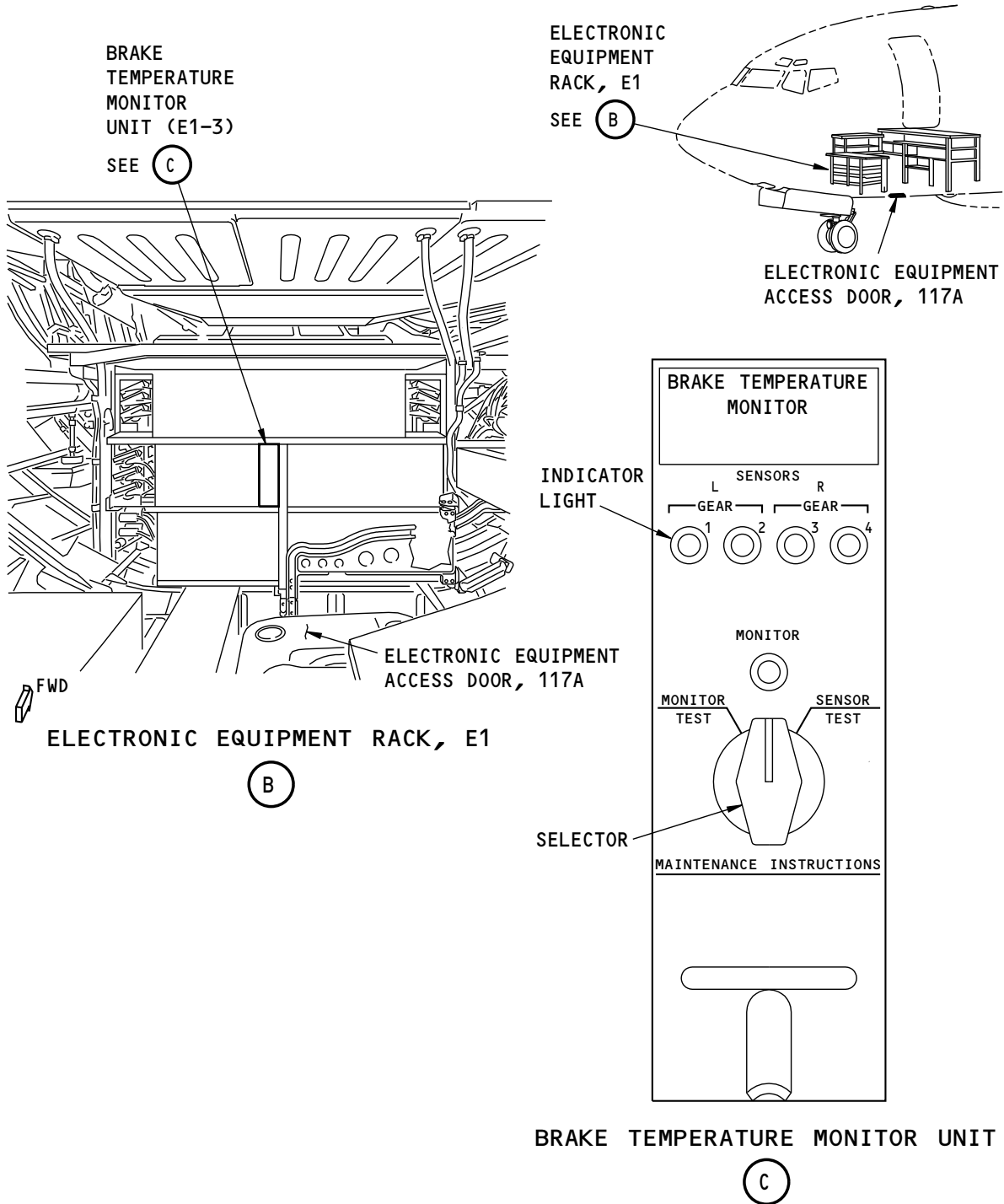
D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 202
Feb 15/2022



737-600/700/800/900
FAULT ISOLATION MANUAL



K62768 S0000147092_V1

Brake Temperature Monitoring System
Figure 201/32-46-00-990-808 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

32-46 TASK 801

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 203
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

803. All LED lights stay off with selector switch set to MONITOR TEST position - Fault Isolation

A. Description

- (1) This task is for when the LED lights on the BTMU do not come on after the MONITOR TEST position is selected.
- (2) If the lights do not come on after the TEST switch was rotated to the MONITOR TEST position, then there is a power failure to the BTMU.
- (3) The lights can also remain OFF due to a failure of the BTMU.

B. Possible Causes

- (1) BTMU, M1279.
- (2) Wiring problem.

C. Circuit Breakers

- (1) Open this circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

D. Related Data

- (1) (SSM 32-46-11)
- (2) (WDM 32-46-11)

E. Initial Evaluation

- (1) Do this task: Brake Temperature Monitor Unit (BTMU) BITE Procedure, 32-46 TASK 801.
 - (a) If all five LED lights come on, then there was an intermittent fault.
 - (b) If all five LED lights do not come on, then do fault isolation below:

F. Fault Isolation Procedure

- (1) Do this check of the power wiring:
 - (a) Remove the brake temperature monitor unit (BTMU), M1279. To remove it, do this task: Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801.
 - (b) Do a check for 28VDC from pin D5 of the connector D3334B.
 - (c) If you do not find 28VDC at pin D5, then do these steps:
 - 1) Open the P6-3 load control center panel.
 - 2) Do a check for 28VDC from the load terminals of the following circuit breaker to structure ground:
 - a) This is the breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

- 3) If you do not find 28VDC at the load terminals, then do these steps:
 - a) Replace the circuit breaker, C1094.
 - b) Re-install the BTMU, M1279. To install it, do this task: Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801.

EFFECTIVITY
SIA ALL

32-46 TASK 803

D633A103-SIA

Page 204
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- c) Do this task: do this task: Brake Temperature Monitor Unit (BTMU) BITE Procedure, 32-46 TASK 801.
- d) If the LED lights come on, then you corrected the fault.
- 4) If you find 28VDC at the load terminals, then do these steps:
 - a) Repair the wiring between pin D5 of connector D3334B at the E1-3 shelf and the load terminal C1094 at P6 panel.
 - b) Re-install the BTMU, M1279. To install it, do this task: Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801.
 - c) Do this task: Brake Temperature Monitor Unit (BTMU) BITE Procedure, 32-46 TASK 801.
 - d) If the LED lights come on, then you corrected the fault.
- (d) If you do not find 28VDC at pin D5, then do these steps:
 - 1) Install a new BTMU, M1279. To install it, do this task: Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801.
 - 2) Do this task: Brake Temperature Monitor Unit (BTMU) BITE Procedure, 32-46 TASK 801.
 - 3) If the LED lights come on, then you corrected the fault.

END OF TASK

804. Brake Temp indication on CDS display shows a number less than 5.0 during Bite Test - Fault Isolation

A. Description

- (1) If the CDS display does not display a number of 5.0 or greater when the MONITOR TEST position is selected, then there is a failure in the signal from the Display Electronic Units (DEU) to the BTMU.

B. Possible Causes

- (1) Wiring problem

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

D. Related Data

- (1) (SSM 32-46-11)
- (2) (WDM 32-46-11)

E. Initial Evaluation

- (1) Do this task, do this task: Brake Temperature Monitor Unit (BTMU) BITE Procedure, 32-46 TASK 801.
 - (a) If the CDS display shows a number of 5.0 or greater, then there was an intermittent fault.
 - (b) If the CDS display does not show a number of 5.0 or greater, then do the fault isolation procedure below:

EFFECTIVITY
SIA ALL

32-46 TASKS 803-804

D633A103-SIA

Page 205
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Fault Isolation Procedure

- (1) Do this check of the wiring:
 - (a) Remove the display electronic units (DEU): DEU-1 and DEU-2 to get access to the electrical connectors. To remove them, do this task: Display Electronic Unit Removal, AMM TASK 31-62-21-000-801
 - (b) Remove the BTMU to get access to electrical connectors. To remove it, do this task: Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801
 - (c) In the table below, find the electrical connectors and the pins for the DEU-1, DEU-2, and BTMU.

Table 201

	DEU-2 CONNECTOR NUMBER	DEU-1 CONNECTOR NUMBER	BTMU CONNECTOR NUMBER
BRAKE #1 L OUTBD	D3975A pin E11	D3973A pin E11	D3334B pin C10
BRAKE #2 L INBD	D3975B pin E11	D3973B pin E11	D3334B pin C11
BRAKE #3 R INBD	D3975D pin E11	D3973D pin E11	D3334B pin C12
BRAKE #4 R OUTBD	D3975E pin E11	D3973E pin E11	D3334B pin C13

- (d) Do a check for continuity between the pair of pins on DEU-2 and BTMU connectors, and between the pair of pins on DEU-1 and BTMU connectors.
 - (e) If you find the problem with wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Reconnect the connectors to the BTMU, DEU-1, and DEU-2.
 - 3) Re-install the BTMU. To install it, do this task: Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801.
 - 4) Re-install the DEU-1 and DEU-2. Do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.
 - 5) Do this task: Brake Temperature Monitor Unit (BTMU) BITE Procedure, 32-46 TASK 801.
 - 6) If the CDS display shows a number 5.0 or greater, then you corrected the fault.
 - (2) If the wiring is good and the CDS display still shows a number less than 5.0, replace the BTMU.
 - (a) To remove the BTMU, do this task: Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801.
 - (b) To install the BTMU, do this task: Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801.

END OF TASK

EFFECTIVITY
SIA ALL

32-46 TASK 804

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 206
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

805. BRAKE TEMP light does not come ON during Bite Test - Fault Isolation

A. Description

- (1) If the BRAKE TEMP light on the P3 panel does not come on when the MONITOR TEST position is selected, then there is a failure in the signal from one or more of the sensors.

B. Possible Causes

- (1) BRAKE TEMP light, L5
- (2) Wiring problem
- (3) BTMU, M1279

C. Initial Evaluation

- (1) Put the selector switch in the MONITOR TEST position.
 - (a) If the BRAKE TEMP light comes on, then there was an intermittent fault.
 - (b) If the BRAKE TEMP light does not come, then do the Fault Isolation Procedure below.

D. Fault Isolation Procedure

- (1) Do the check for the BRAKE TEMP light, L5.
 - (a) Push and release the BRAKE TEMP light to use the press-to-test function.
 - (b) If the BRAKE TEMP light does not come on, do these steps:
 - 1) Replace the BRAKE TEMP light, L5. Do this task: Indicator Light - Light Assembly Replacement, AMM TASK 33-18-00-960-802.
 - 2) Push and release the brake temp light.
 - 3) If the light comes on, then you correct the fault.
 - 4) If the light remains off, then continue.
 - (c) Do this check of the wiring between the Display Electronic Units (DEU) and the BRAKE TEMP light, L5.
 - 1) Remove the DEU-1 and the DEU-2 to get access to electrical connectors. To remove them, do this task: Display Electronic Unit Removal, AMM TASK 31-62-21-000-801.
 - 2) Remove the First Officer instrument panel, P3-1.
 - 3) Disconnect connector D3991 from panel P3-1.
 - 4) Do the wiring check between connector D3991 pin 7 and the DEU-1 connector D3973A pin B14 and DEU-2 connector D3975A pin B14.
 - 5) If you do not find continuity, repair the wiring.
 - a) Repair the wiring.
 - b) Re-connect connector D3991 to P3-1 panel.
 - c) Re-install the DEU-1 and the DEU-2. Do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801
 - d) If the light comes on, then you corrected the fault.
 - e) Re-install the First Officer instrument panel, P3-1.
 - f) If the light does not come on, then continue.
 - (d) If the light remains off, then replace the BTMU. These are the tasks:
 - Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801

EFFECTIVITY
SIA ALL

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

32-46 TASK 805

Page 207
Feb 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801

— END OF TASK —

806. All lights on BTMU stay off with selector switch set to SENSOR TEST - Fault Isolation

A. Description

- (1) Do this task if one or all five LED lights on the Brake Temperature Monitor Unit (BTMU) do not come on after the selector switch is rotated to the SENSOR TEST position.
- (2) If one of the LED lights does not come on when you put the selector switch to the SENSOR TEST position, then there is a loss of signal in one of the sensors.

B. Possible Causes

- (1) Brake Temperature Sensor
- (2) Wiring problem

C. Related Data

- (1) (SSM 32-46-11)
- (2) (WDM 32-46-11)

D. Initial Evaluation

- (1) Put the selector switch in the SENSOR TEST position.
 - (a) If one or more of the five LED lights do not come on, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

- (1) If one of the lights does not come on, then do the check of the connector at the indicated sensor(s) as follows:
 - (a) If the connector is loose, tighten the loose connector.
 - 1) If the light comes on, then you corrected the fault.
 - (b) If you do not find the problem with connection, then continue.
- (2) Exchange the faulty sensor with a sensor that operated correctly.
 - (a) If the problem moved with the applicable sensor, then replace the sensor. To replace it, do these tasks:
 - Brake Temperature Sensor Removal, AMM TASK 32-46-21-000-801
 - Brake Temperature Sensor Installation, AMM TASK 32-46-21-400-801
 - (b) If the problem remains at the same sensor location, then do these steps:
 - 1) Remove the BTMU to get access to electrical connector. To remove it, do this task: Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801.
 - 2) Examine and repair the wires between the BTMU connector, D3334A and the applicable sensor.
 - 3) Re-install the BTMU, do this task: Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801.
 - 4) If the light comes on, then you corrected the fault.
- (3) If all lights do not come on, then do the wiring check between the BTMU connector, D3334A and all four sensors.
 - (a) Remove the BTMU to get access to electrical connector. To remove it, do this task: Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801.

EFFECTIVITY
SIA ALL

32-46 TASKS 805-806

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 208
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) Do the check and repair the wiring between the BTMU connector, D3334A at pin A1, A2, A4, A5, A7, A8, A10, A11 and the four sensors.
- (c) Re-install the BTMU, do this task: Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801.
- (d) If the light comes on, then you corrected the fault.

————— **END OF TASK** —————

807. Brake Temp indication on CDS system display shows zero - Fault Isolation

A. Description

- (1) Do this task if the Brake Temp indication on the CDS system display shows a value of zero.

B. Possible Causes

- (1) Brake Temperature Monitoring Unit, M1279.

C. Fault Isolation Procedure

- (1) Replace the BTMU, M1279. These are the tasks:
 - Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801
 - Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801
- (a) Do this task: Brake Temperature Monitor Unit (BTMU) BITE Procedure, 32-46 TASK 801.
- (b) If the Brake Temp indication on CDS display show the non-zero value, then you corrected the fault.

————— **END OF TASK** —————

808. Brake Temp light On - Fault Isolation

A. Description

- (1) This task will look at conditions when the BRAKE TEMP light is ON.

B. Possible Causes

- (1) Wiring problems
- (2) Flight compartment light problem
- (3) Brake Temperature Monitor Unit, M1279
- (4) High brake temperatures

C. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-46-11)

D. Fault Isolation Procedure

- (1) Check the BRAKE TEMP light on the P3 panel no sooner than 10 minutes and no later than 15 minutes after parking.
- (2) Do this step if the BRAKE TEMP light is ON and the BTMS readings on the CDS System Display are between 3.0 and 5.
 - (a) Delay subsequent departures until the BTMS readings on the CDS System Display are below 3.0 and the BRAKE TEMP light is OFF.

NOTE: Artificial cooling from fans or an air conditioning unit can be used to cool the brakes until the BTMS readings on the CDS System Display are below 3.5 and the BRAKE TEMP light is off.

EFFECTIVITY
SIA ALL

32-46 TASKS 806-808

D633A103-SIA

Page 209
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) If the BRAKE TEMP light remains ON after the BTMS readings on the CDS System Display are below 3.0, then continue.
- (3) Do this step if the BRAKE TEMP light on the P3 panel is ON and the value of the BTMS readings on the CDS System Display for all brake positions are less than 3.0. Do this task: Brake Temp indication on CDS system display shows the value less than 3.0 but BRAKE TEMP light is ON-Fault Isolation, 32-46 TASK 811.



MAKE SURE THAT WHEN YOU CHECK THERMAL PLUGS, USE GLOVES AND PROTECTIVE EYE EQUIPMENT. THE FUSE PLUGS CAN MELT, WHEN THE BRAKE TEMP LIGHT IS ON AND THE BTMS READS BETWEEN 5 AND 7.8 ON THE CDS SYSTEM DISPLAY. IF YOU DO NOT OBEY, INJURY TO PERSONNEL CAN OCCUR.

- (4) Do these steps if the BRAKE TEMP light is ON and the BTMS readings on the CDS System Display are between 5.0 and 7.8, wait at least 67 minutes after landing, or until all of the BTMS readings on the CDS System Display are below 3.5 and the BRAKE TEMP light is OFF.
 - (a) Unless required, do not set the parking brake.
 - (b) Check that the wheel thermal plugs have not melted before making a subsequent take-off.
 - (c) If the fuse plugs have melted, do this task: High Energy Stop, AMM TASK 05-51-07-210-801.



DO NOT GO NEAR THE LANDING GEAR OR ATTEMPT TO TAXI FOR ONE HOUR. TIRE, WHEEL WELL AND BRAKE REPLACEMENT CAN BE NECESSARY. IF YOU DO NOT OBEY, INJURY TO PERSONS CAN OCCUR.

- (5) Do this step if the BRAKE TEMP light is ON and the BTMS readings on the CDS System Display are between 7.8 and above.
 - (a) Unless required, do not set the parking brake.
 - (b) Tire, wheel and brake replacement may be required.
 - (c) After one hour, check that the wheel thermal plugs have not melted. Do this task: High Energy Stop, AMM TASK 05-51-07-210-801.

————— **END OF TASK** —————

809. Brake Temp indication on CDS system display shows the value of 5 or greater but the BRAKE TEMP light is not ON - Fault Isolation

A. Description

- (1) Do this procedure when the CDS System Display shows a value of 5 or greater and the BRAKE TEMP light on the P3 panel is not on.

B. Possible Causes

- (1) Flight compartment light problem
- (2) Wiring problems
- (3) Brake Temperature Monitor Unit, M1279

EFFECTIVITY
SIA ALL

32-46 TASKS 808-809

D633A103-SIA

Page 210
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Related Data

- (1) (SSM 32-46-11)
- (2) (WDM 32-46-11)

D. Fault Isolation Procedure

- (1) Do the check for the BRAKE TEMP light, L5.
 - (a) Push and release the BRAKE TEMP light to use the press-to-test function.
 - (b) If the BRAKE TEMP light goes ON, then you corrected the fault.
 - (c) If the BRAKE TEMP light remains off, then continue.
- (2) Do this check of the flight compartment lighting.
 - (a) Do this task: Flight Compartment Lighting Problem - Fault Isolation, 33-10 TASK 801.
 - (b) Push and release the BRAKE TEMP light to use the press-to-test function.
 - (c) If the BRAKE TEMP light goes ON, then you corrected the fault.
 - (d) If the BRAKE TEMP light remains off, then continue.
- (3) Do this check of the wiring between the Display Electronic Units (DEU) and the BRAKE TEMP light, L5.
 - (a) Remove the DEU-1 and the DEU-2 to get access to the electrical connector. Do this task: Display Electronic Unit Removal, AMM TASK 31-62-21-000-801.
 - (b) Remove the First Officer instrument panel, P3-1.
 - (c) Disconnect connector D3991 from panel P3-1.
 - (d) Do the wiring check between connector D3991 pin 7 and the DEU-1 connector D3973A pin B14 and DEU-2 connector D3975A pin B14.
 - (e) If you do not find continuity, then repair the wiring.
 - 1) Repair the wiring.
 - 2) Re-connect connector D3991 to P3-1 panel.
 - 3) Re-install the DEU-1 and the DEU-2, do this task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801.
 - 4) If the light comes on, then you corrected the fault.
 - 5) Re-install the First Officer instrument panel, P3-1.
 - (f) If the light remains off, then continue.
- (4) Replace the BTMU, do the following tasks:
 - Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801
 - Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801.

————— **END OF TASK** —————

810. Four brake temperatures are very different - Fault Isolation

A. Description

- (1) The brake temperature readings on the Common Display System (CDS) display are noticeably different between the four brakes.

EFFECTIVITY
SIA ALL

32-46 TASKS 809-810

D633A103-SIA

Page 211
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

B. Possible Causes

- (1) It can be normal for brake temperature readings to be up to 3.0 units different between the brakes. Reasons for the differences can be:
 - (a) Wind cooling the brakes at different rates.
 - (b) Cooling differences between the outboard wheels with the aerodynamic hubcap and inboard wheels with the small hubcap.
 - (c) Different application of the left and right brake pedals (differential braking).
 - (d) Operation of the antiskid system.
- (2) Differences in the brake temperature readings can also be due to any of the following:
 - (a) A defective brake temperature sensor.
 - (b) A defective Brake Temperature Monitor Unit (BTMU).
 - (c) A dragging brake.
 - (d) A brake hydraulic system problem.
 - (e) An antiskid system problem.

C. Fault Isolation Procedure

- (1) Do this task: Brake Temperature Monitor Unit (BTMU) BITE Procedure, 32-46 TASK 801.
 - (a) If the BTMU Built-In-Test Equipment (BITE) procedure is good, and the four brake temperatures are similar, then this was an intermittent problem.
 - (b) If the BTMU fails the BITE procedure, then replace the BTMU. These are the tasks:
 - Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801
 - Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801
 - (c) Do the Repair Confirmation at the end of this task.
- (2) Do this task: Main Landing Gear Brake Fast Check (Wheel Installed on the Airplane), AMM TASK 32-41-41-700-802.
 - (a) If the main landing gear fast check is good, and the four brake temperatures are now similar, then this was an intermittent problem.
 - (b) If the brakes have damage or excessive wear, then do this task: Main Landing Gear Brake Inspection (Wheel Removed from the Airplane), AMM TASK 32-41-41-700-803.
 - 1) Replace the brake if necessary.
 - (c) Do the Repair Confirmation at the end of this task.
- (3) Do this procedure: HYDRAULIC BRAKE SYSTEM - ADJUSTMENT/TEST, AMM 32-41-00/501.
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the Antiskid/Autobrake Control Unit (AACU) passes the BITE test and the four brake temperatures are similar, then this was an intermittent problem.
 - (b) If the AACU fails the BITE procedure, then replace the AACU. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801

EFFECTIVITY
SIA ALL

32-46 TASK 810

D633A103-SIA

Page 212
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

D. Repair Confirmation

- (1) If the four brake temperatures are now similar, then you corrected the problem.
- (2) If the four brake temperatures are still very different, then continue.

———— **END OF TASK** ————

811. Brake Temp indication on CDS system display shows the value less than 3.0 but BRAKE TEMP light is ON-Fault Isolation

A. Description

- (1) Do this procedure when the value of a brake shows less than 3.0, and the BRAKE TEMP light on the P3 panel is ON.
- (2) If the system is normal the BRAKE TEMP light on the P3 panel will illuminate when the value of a brake shows greater than 5.
 - (a) When the BRAKE TEMP light comes ON, it will remain illuminated until the value of the brake is less than 3.0.

B. Possible Causes

- (1) Flight compartment lighting problem
- (2) Wiring problem
- (3) Brake Temperature Monitor Unit, M1279

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	C01094	LANDING GEAR BRAKE TEMP MONITOR

D. Related Data

- (1) (SSM 32-46-11)
- (2) (WDM 32-46-11)

E. Initial Evaluation

- (1) Do the check for the BRAKE TEMP light, L5.
 - (a) Push and release the BRAKE TEMP light to use the press-to-test function.
 - (b) If the BRAKE TEMP light goes OFF, then you corrected the problem.
 - (c) If the BRAKE TEMP light is ON, then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-46 TASKS 810-811

D633A103-SIA

Page 213
Jun 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Fault Isolation Procedure

- (1) Do this check of the flight compartment lighting.
 - (a) Make sure the Master dim and test switch are in the BRT position.
 - (b) If the BRAKE TEMP light, L5 and other lights on P3 panel are ON, then, do this task: Flight Compartment Lighting Problem - Fault Isolation, 33-10 TASK 801.
 - (c) Do the Repair Confirmation at the end of this task.
- (2) Do this check of the wiring between the Display Electronic Units (DEU) and the BRAKE TEMP light, L5.
 - (a) Remove the Display Electronic Units to get access to Electrical Connectors. This is the task: Display Electronic Unit Removal, AMM TASK 31-62-21-000-801.
 - (b) Remove the First Officer instrument panel, P3-1.
 - (c) Disconnect Connector D3991 from panel P3-1(WDM 32-46-11).
 - (d) Do this check of Wiring between the P3-1, D3991 and the M1808, DEU-1, D3973A.

P3-1	DEU-1
D3991	D3973A
Pin 7	Pin B14

- (e) Do this check of Wiring between the P3-1, D3991 and the M1809, DEU-2, D3975A.

P3-1	DEU-2
D3991	D3975A
Pin 7	Pin B14

- (f) If you do not find continuity to all these pins, then repair the Wiring (SWPM 20-10-13).
 - (g) Connect Connector D3991 to P3-1 panel.
 - (h) Install the DEU-1 and DEU-2. This is the task: Display Electronic Unit Installation, AMM TASK 31-62-21-400-801
 - (i) Install the First Officer instrument panel, P3-1.
 - (j) Do the Repair Confirmation at the end of this task.
- (3) Replace the Brake Temperature Monitor Unit (BTMU). These are the tasks:
 - Brake Temperature Monitor Unit Removal, AMM TASK 32-46-31-000-801
 - Brake Temperature Monitor Unit Installation, AMM TASK 32-46-31-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Push and release the BRAKE TEMP light to use the press-to-test function.
 - (a) If the BRAKE TEMP light goes OFF, then you corrected the problem.
 - (b) If the light remains ON, then continue the Fault Isolation Procedure at the subsequent step.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-46 TASK 811

D633A103-SIA

Page 214
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

801. Nose Wheel Makes a Loud Noise in the Wheel Well - Fault Isolation

A. Description

- (1) There are two nose wheel spin brakes in the nose gear wheel well. The nose wheel spin brakes use friction with the nose tires to stop nose wheel rotation after the nose gear is retracted.
- (2) The wheel spin brake assemblies attach to the upper forward nose wheel well ceiling.
- (3) When you move the rudder pedals full travel on the ground, the nose wheels turn a maximum of 7 degrees in the left or right direction. Steering inputs from the rudder pedals go to the metering valve through a cable loop.
- (4) The rudder pedal steering mechanism does these functions:
 - (a) Combines the steering inputs from the rudder pedals and the steering wheel
 - (b) Prevents rudder pedal inputs when the airplane is in the air
 - (c) Provides centering forces.
- (5) A rudder pedal steering rotary actuator is attached to the rudder pedal steering mechanism with a cable loop. When the airplane is in the air the rotary actuator moves a cam in the mechanism. This will not let the rudder pedal inputs move the control cables for the nose wheel steering.
- (6) (SDS SUBJECT 32-45-00)
- (7) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Damaged or worn nose tires
- (2) Damaged or worn nose wheel spin brakes
- (3) Rudder pedal steering rotary actuator, M1177, and/or cable loop
- (4) The R596 relay
- (5) Steering metering valve
- (6) Incorrect nose gear shock strut servicing.

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (SSM 32-51-11)
- (2) (WDM 32-51-11)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for the fault isolation:
 - (a) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (b) Make sure the control lever for the landing gear is in the OFF position.

EFFECTIVITY
SIA ALL

32-51 TASK 801

D633A103-SIA

Page 201
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (c) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Examine the nose tires for wear or damage. Do these tasks: AMM PAGEBLOCK 32-45-00/601
- (3) Examine the nose wheel spin brake assemblies in the nose gear wheel well. To do this, do this task: Nose Wheel Spin Brake Lining Inspection, AMM TASK 32-45-31-700-801
- Look for wear on the spin brake pads or damaged spring supports.
- (a) If the spin brake pad is worn or the spring supports are damaged, then do these steps:
- 1) Replace the nose wheel spin brakes. These are the tasks:
 - Nose Wheel Spin Brake Lining - Removal, AMM TASK 32-45-31-000-801
 - Nose Wheel Spin Brake Lining - Installation, AMM TASK 32-45-31-400-801
 - 2) If the fault does not occur on the subsequent flight, then you corrected the fault.
- (b) If the spin brake pad is not worn or the spring supports are not damaged, then continue.
- (4) Examine the nose gear wheel well, nose gear doors, and the nose gear for obvious signs of damage or contact by nose tires.
- (a) If there is damage in the wheel well or on the nose gear, then repair the damage and service the nose gear shock strut. To service the nose gear shock strut, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
- (b) If the fault does not occur on the subsequent flight, then you corrected the fault.
- (c) If there is no damage in the wheel well or on the nose gear, then continue.
- (5) Do this check of the rudder pedal steering rotary actuator, M1177:
- NOTE:** The rotary actuator is below the flight deck floor. You get access to the actuator through the access panel on the left side bulkhead of the nose gear wheel well.
- (a) Put the airplane in the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- (b) Do a check to see if the rotary actuator moved to the air position.
- NOTE:** The rotary actuator is in the air position when the index marks on the actuator pulley and the housing are aligned.
- (c) If the rotary actuator did not move to the air position, then do these steps:
- 1) Replace the steering rotary actuator, M1177. These are the tasks:
 - Rudder Pedal Steering Rotary Actuator Removal, AMM TASK 32-51-81-000-801
 - Rudder Pedal Steering Rotary Actuator Installation, AMM TASK 32-51-81-400-801
 - 2) Put the airplane back to the air. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - 3) If the rotary actuator did not move to the air position, then replace the air/ground relay, R596.
 - 4) If the rotary actuator did move to the air position, then continue.

EFFECTIVITY
SIA ALL

32-51 TASK 801

D633A103-SIA

Page 202
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 5) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- 6) Do the Repair Confirmation at the end of this task.
- (d) If the rotary actuator did move to the air position, then continue.
 - 1) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802
- (6) Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
- (7) If you suspect that the noise is coming from the steering metering valve, do the following:
 - (a) Station an observer near the steering metering valve
 - (b) Turn on hydraulic system A Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801
 - (c) Move the steering tiller rapidly to the full left and then the full right position.
 - 1) Listen for unusual loud noises while the nose gear tires are turning
 - a) Loud noises from the steering metering valve can occur during this test. This is not unusual and is acceptable for continued service.
 - 2) Return steering tiller to the center position.
 - a) While holding the steering tiller firmly in the center position, push the rudder pedals fully to the left and right positions.
 - 3) Listen for loud noises coming from the steering metering valve.
 - 4) If there were no noises, then the fault was intermittent.
 - 5) If the noise is heard, remove the steering valve cover.
 - a) Repeat the test, and observe if the steering summing mechanism or the tire are moving when the test is performed.
 - <1> There should be no motion in the summing mechanism or the tires if the tiller is held firmly in the center position.
 - <2> If there is some motion, then the tiller is moving some amount during the test.
 - <3> Repeat the test again, ensuring that the tiller does not move during the test.
 - b) If there is noise coming from the steering metering valve and summing mechanism and the tires do not turn (or try to turn), replace the steering metering valve.

————— **END OF TASK** —————

802. Nose Wheel Shock Strut Bottoms During Taxi - Fault Isolation

A. Description

- (1) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Incorrect nose gear shock strut servicing
- (2) Nose gear shock strut seals

EFFECTIVITY
SIA ALL

32-51 TASKS 801-802

D633A103-SIA

Page 203
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Fault Isolation Procedure

- (1) Do this step to prepare for fault isolation:



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Do this check of the shock strut for the nose landing gear for the correct servicing:
- (a) Examine the nose gear shock strut for the correct servicing. Do this task: Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.
- (b) If it is necessary, service the nose gear shock strut. To service the strut, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
- 1) If the fault does not occur on the subsequent taxi, then you corrected the fault.
- (c) If the nose gear shock is correctly serviced, then continue.
- (3) Do this check to see if there is leakage of the shock strut seals:
- (a) Examine the shock strut to see if there is leakage at the seals. Do this task: Nose Landing Gear Shock Strut Seal Leakage Check, AMM TASK 32-21-11-200-801.
- (b) If it is necessary, replace the seals on the nose gear. Do this task: Replace the Active Seals and Spare Seals, AMM TASK 32-21-11-960-802.
- 1) If the fault does not occur on the subsequent taxi, then you corrected the fault.

————— **END OF TASK** —————

803. Nose Wheels Shimmy or Vibrate at Gear Retraction - Fault Isolation

A. Description

- (1) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Incorrect inflation or servicing of the nose wheel tires
- (2) Flat spots, worn areas, out-of-balance, or damage on the nose tires
- (3) Damaged nose wheels
- (4) Loose axle nuts on left and/or right nose wheels
- (5) Nose wheel bearings loose or damaged
- (6) Nose gear steering cylinder attachment loose
- (7) Nose wheel snubber pads worn, damaged or need adjusting
- (8) Incorrect nose gear shock strut servicing
- (9) Excessive freeplay on the nose gear torsion links
- (10) Excessive freeplay in the nose gear steering collar and/or steering actuator trunnion bushings

EFFECTIVITY
SIA ALL

32-51 TASKS 802-803

D633A103-SIA

Page 204
Oct 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Related Data

- (1) (SSM 32-51-11)
- (2) (WDM 32-51-11)

D. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure that the control lever for the landing gear is in the DN position.
 - (b) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.



WARNING

MAKE SURE THE TOWING LEVER LOCK PIN IS INSTALLED ON THE NOSE LANDING GEAR. WITHOUT THE TOWING LEVER LOCK PIN INSTALLED, INADVERTENT MOVEMENT OF THE NOSE LANDING GEAR COULD RESULT IN INJURIES TO PERSONS.

- (c) Make sure that the nose and main landing gear have downlock pins installed. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Make sure that the nose wheel tires are inflated to the correct pressure. Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - (a) If the pressure for the nose wheel tires is not correct, then do these steps:
 - 1) Do the servicing of the nose wheel tires. To service the tires, do this task: Add Nitrogen or Air to the Tire, AMM TASK 12-15-51-610-802.
 - (b) If the pressure for the nose wheel tires is correct, then continue.
- (3) Examine the nose wheel tires for flat spots, worn areas, or damage:
 - (a) If there are flat spots, worn areas, or damage on the tires, then do these steps:
 - 1) Replace the applicable nose wheel tires that are damaged. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly - Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801
 - (b) If the nose wheel tires are not worn or damaged, then continue.
- (4) Examine the nose wheels for structural damage, do this task: Wheels Fast Check (Wheel Installed on the Airplane), AMM TASK 32-45-00-700-801.
 - (a) If there is structural damage to the nose wheels, then do this step:
 - 1) Replace the nose wheel tires that are damaged. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly - Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801

EFFECTIVITY
SIA ALL

32-51 TASK 803

D633A103-SIA

Page 205
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) If the nose wheels do not have structural damage, then continue.
- (5) If the nose wheel tires passed the previous inspections, then do the following:
 - (a) Examine the previous five flight legs for NLG vibration discrepancies.
 - (b) If no previous discrepancies exist, then continue.
 - (c) If previous discrepancies exist and the NLG tires have not been replaced for this problem, replace the two NLG tires. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly - Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801
 - (d) If previous discrepancies exist and NLG tires have already been replaced for this problem, then continue.
- (6) Do this check of the axle nut on the two nose wheels:
 - (a) Make sure the torque for the axle nut on the two nose wheels is correct, do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801.
 - (b) If the torque on the axle nut for the two nose wheels is not correct, then do this step:
 - 1) Tighten the axle nuts to the correct torque, do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801.
 - (c) If the torque on the axle nuts is correct, then continue.
- (7) Do this check of the wheel bearings on the two nose wheels:
 - (a) Examine the wheel bearings on the two nose wheels for damage, do this task: Nose Landing Gear Wheel and Tire Assembly - Removal, AMM TASK 32-45-21-000-801.
 - (b) If it is necessary, replace the wheel bearings. Do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801.
 - (c) If the wheel bearings do not need to be replaced, then continue.
- (8) Do a check of the nose wheel snubber pads for wear and damage, do these tasks: AMM PAGEBLOCK 32-45-31/201.
- (9) Do this check of the shock strut for the nose landing gear for the correct servicing:
 - (a) Examine the nose gear shock strut for the correct servicing. To do this, do this task: Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.
 - (b) If it is necessary, service the nose gear shock strut. To do this, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
 - (c) If the nose gear shock is correctly serviced, then continue.
- (10) Do a check for torsional freeplay of the torsion links on the nose gear. To do this, do this task: Nose Landing Gear Inspection, AMM TASK 32-21-00-200-801.
 - (a) If there is too much torsional freeplay, then do these steps to replace the parts that are out of limits:
 - 1) Replace the upper torsion link. These are the tasks:
 - Nose Landing Gear Upper Torsion Link Removal, AMM TASK 32-21-31-000-801
 - Nose Landing Gear Upper Torsion Link Installation, AMM TASK 32-21-31-400-801
 - 2) Replace the lower torsion link. These are the tasks:
 - Nose Landing Gear Lower Torsion Link Removal, AMM TASK 32-21-31-000-802

EFFECTIVITY
SIA ALL

32-51 TASK 803

D633A103-SIA

Page 206
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- Nose Landing Gear Lower Torsion Link Installation, AMM TASK 32-21-31-400-802
- 3) Replace the steering collar. These are the tasks:
 - Steering Collar Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-000-801
 - Steering Collar Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-400-801
- 4) Replace the nose gear steering cylinder and attachments, as necessary. These are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
- (b) If the torsional freeplay is correct, then continue.
- (11) Do a check for excessive freeplay in the Nose Gear Steering Actuator and the Nose Gear Steering Collar. These are the tasks:
 - Nose Gear Steering Actuator Trunnion and Trunnion Bushing Dimensional Inspection, AMM TASK 32-51-51-200-802
 - Steering Collar Inspection, AMM TASK 32-51-61-220-801
- (a) If there is freeplay or wear greater than the allowable limits, then do these steps to replace the parts that are out of limits:
 - 1) Replace the upper and lower nose gear steering actuator trunnion bushings. These are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - 2) Replace the steering collar. These are the tasks: .
 - Steering Collar Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-000-801
 - Steering Collar Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-400-801
- (b) If there is not excessive freeplay in the Nose Gear Steering Actuator and the Nose Gear Steering Collar, then continue.
- (12) If the fault does not occur on the subsequent flight, then you corrected the fault.

END OF TASK

804. Nose Wheel Shimmy or Vibrate at Taxi, Takeoff, or Landing - Fault Isolation

A. Description

- (1) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Incorrect inflation or servicing of the nose wheel tires
- (2) Flat spots, worn areas, out-of-balance or damage on the nose wheel tires
- (3) Damaged nose wheels
- (4) Loose axle nuts on nose wheels
- (5) Loose or damaged nose wheel bearings
- (6) Nose gear steering cylinder attachment loose

EFFECTIVITY
SIA ALL

32-51 TASKS 803-804

D633A103-SIA

Page 207
Oct 15/2022



737-600/700/800/900
FAULT ISOLATION MANUAL

- (7) Incorrect nose gear shock strut servicing
- (8) Excessive freeplay on the nose gear torsion links
- (9) Excessive freeplay in the nose gear steering collar and/or steering actuator trunnion bushings
- (10) Worn trunnion pins or bushings
- (11) Airplane being parked overnight in cold weather conditions provided no defects are found during nose gear tire inspection

C. Related Data

- (1) SSM 32-51-11
- (2) WDM 32-51-11

D. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:



WARNING

OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (a) Make sure that the downlock pins are installed in the Nose Landing Gear (NLG) and Main Landing Gear (MLG). To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure that the control lever for the landing gear is in the OFF position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Make sure that the nose wheel tires are inflated to the correct pressure, do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - (a) If the pressure for the nose wheel tires is not correct, then do these steps:
 - 1) Do the servicing of the nose wheel tires. To service the tires, do this task: Add Nitrogen or Air to the Tire, AMM TASK 12-15-51-610-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the pressure for the nose wheel tires is correct, then continue.
 - (3) Examine the nose wheel tires for flat spots, worn areas, or damage:
 - (a) If there are flat spots, worn areas, or damage on the tires, then do these steps:
 - 1) Replace the nose wheel tires that are damaged. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly - Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the nose wheel tires are not worn or damaged, then continue.
 - (4) Examine the nose wheels for structural damage, such as cracks:
 - (a) If there is structural damage to the nose wheels, then do these steps:
 - 1) Replace the nose wheel tires that are damaged. These are the tasks:

EFFECTIVITY
SIA ALL

32-51 TASK 804

D633A103-SIA

Page 208
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Nose Landing Gear Wheel and Tire Assembly - Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (b) If the nose wheels do not have structural damage, then continue.
- (5) If the nose wheel tires passed the previous inspections, then do the following:
- (a) Examine the previous five flight legs for NLG vibration discrepancies.
 - (b) If no previous discrepancies exist, then you corrected the problem.
 - (c) If previous discrepancies exist and the NLG tires have not been replaced for this problem, replace the two NLG tires. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly - Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801
 - (d) If previous discrepancies exist and NLG tires have already been replaced for this problem, then continue.
- (6) Do this check of the axle nut on the two nose wheels:
- (a) Make sure that the torque for the axle nut on the two nose wheels is correct, do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801.
 - (b) If the torque on the axle nut for the two nose wheels is not correct, then do this step:
 - 1) Tighten the axle nuts to the correct torque, do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801.
 - (c) If the torque on the axle nuts is correct, then continue.
- (7) Do this check of the wheel bearings on the two nose wheels:
- (a) Examine the wheel bearings on the two nose wheels for damage, do this task: Nose Landing Gear Wheel and Tire Assembly - Removal, AMM TASK 32-45-21-000-801.
 - (b) If it is necessary, replace the wheel bearings. Do this task: Nose Landing Gear Wheel and Tire Assembly - Installation, AMM TASK 32-45-21-400-801.
 - (c) If the wheel bearings do not need to be replaced, then continue.
- (8) Do this check of the shock strut for the nose landing gear for the correct servicing:
- (a) Examine the nose gear shock strut for the correct servicing. Do this task: Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.
 - (b) If it is necessary, service the nose gear shock strut. Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
 - 1) Do the Repair Confirmation at the end of this task.
 - (c) If the nose gear shock is correctly serviced, then continue.
- (9) Examine the steering actuator attachments and steering collar bushings for looseness.
- NOTE:** Replace worn parts as needed.
- (a) If there is too much torsional freeplay, then do these steps:
 - 1) Do a check for excessive freeplay in the Nose Gear Steering Actuator and the Nose Gear Steering Collar. These are the tasks:

EFFECTIVITY
SIA ALL

32-51 TASK 804

D633A103-SIA

Page 209
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Nose Gear Steering Actuator Trunnion and Trunnion Bushing Dimensional Inspection, AMM TASK 32-51-51-200-802
- Steering Collar Inspection, AMM TASK 32-51-61-220-801
- a) If there is freeplay or wear greater than the allowable limits, then do these steps to replace the parts that are out of limits:
 - <1> Replace the upper and lower nose gear steering actuator trunnion bushings or the steering actuators. Do these tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - <2> Replace the steering collar. Do these tasks:
 - Steering Collar Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-000-801
 - Steering Collar Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-400-801
 - <a> If there is not excessive freeplay in the Nose Gear Steering Actuator and the Nose Gear Steering Collar, then continue.
- 2) Examine the torsion links for wear, do this task: Nose Landing Gear Torsion Links Inspection, AMM TASK 32-21-31-200-801.
 - a) If there is freeplay or wear greater than the allowable limits, then do these steps to replace the parts that are out of limits:
 - AMM PAGEBLOCK 32-21-31/401
 - b) If there is not excessive freeplay in the Nose Gear Torsion Links, then continue.
- 3) Check nose gear trunnion pins and bushings for excessive wear.
 - a) Remove the NLG, do this task: AMM PAGEBLOCK 32-21-00/401.
- 4) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

- (1) Put the control lever for the landing gear to the DN position.
 - (a) If the fault does not occur again on the subsequent flight, then you corrected the problem.
 - (b) If the fault occur again on the subsequent flight, then continue the Fault Isolation Procedure at the subsequent step.

————— END OF TASK —————

805. Rudder Pedal Steering Does Not Operate - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The rudder pedal steering does not operate. The tiller steering operates correctly.

EFFECTIVITY
SIA ALL

32-51 TASKS 804-805

D633A103-SIA

Page 210
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (2) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. When you move the rudder pedals on the ground, the nose wheels turn a maximum of 7 degrees in the left or right direction. Steering inputs from the rudder pedals go to the metering valve through a cable loop.
- (3) The rudder pedal steering mechanism does these functions:
 - (a) Combines the steering inputs from the rudder pedals and the steering wheel
 - (b) Prevents rudder pedal inputs when the airplane is in the air
 - (c) Provides centering forces.
- (4) A rudder pedal steering rotary actuator is attached to the rudder pedal steering mechanism with a cable loop. When the airplane is in the air the rotary actuator moves a cam in the mechanism. This will not let the rudder pedal inputs move the control cables for the nose wheel steering.
- (5) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) NWSA, NWSB, NWSA/B cable loop adjustment (cable tension is too high)
- (2) NGPP (Nose Gear Piston Position) cable loop adjustment (cable tension is too high or too low)
- (3) Rudder pedal steering rotary actuator, M1177
- (4) R596 relay
- (5) Rudder pedal steering interconnect mechanism
- (6) Excessive friction in cable control system
- (7) Rudder interconnect mechanism spring is weak

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (SSM 32-50-00)
- (2) (WDM 32-51-11)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.

EFFECTIVITY
SIA ALL

32-51 TASK 805

D633A103-SIA

Page 211
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
 - (d) Install greased plates under the nose wheels.
 - (e) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
 - (f) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (2) Examine the cable loop for NWSA, NWSB, NWSA/B for correct rigging and tension. Do this task: AMM PAGEBLOCK 32-51-00/501
- (3) Do this check of the cable loop for the NGPP (Nose Gear Piston Position) rudder pedal steering:
- NOTE: Open the forward access panel on the left wall of the nose wheel well to get access to the NWSA and NWSB cable loop and the rotary actuator.
- (a) Move the towing lever to the TOW position and install the towing lever lockpin.
 - (b) Make sure the nose wheels are in the center position.
 - (c) Use a spring scale to measure the load that is necessary to move the NGPP (Nose Gear Piston Position) cables 0.50 +/- 0.05 inch at the turnbuckles.
 - (d) If the force that you measure is not 16 - 22 pounds, then do these steps:

NOTE: It is not necessary to allow for temperature because the NGPP cables are very short.

 - 1) Do the adjustment of the interconnect mechanism, do this task: Rudder Pedal Interconnect Mechanism Adjustment, AMM TASK 32-51-00-820-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (e) If the force that you measure is 16 - 22 pounds, then continue.
- (4) Do this check of the rudder pedal steering rotary actuator, M1177:
- NOTE: The rotary actuator is below the flight deck floor. You get access to the actuator through the access panel on the left side bulkhead of the nose gear wheel well.
- (a) Put the airplane in the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - (b) Do a check to see if the rotary actuator moved to the air position.

NOTE: The rotary actuator is in the air position when the index marks on the actuator pulley and the housing are aligned.
 - (c) If the rotary actuator did not move to the air position, then do these steps:
 - 1) Replace the steering rotary actuator, M1177. These are the tasks:
 - Rudder Pedal Steering Rotary Actuator Removal, AMM TASK 32-51-81-000-801

EFFECTIVITY
SIA ALL

32-51 TASK 805

D633A103-SIA

Page 212
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Rudder Pedal Steering Rotary Actuator Installation, AMM TASK 32-51-81-400-801
- 2) Put the airplane back to the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- 3) If the rotary actuator did not move to the air position, then replace the air/ground relay, R596.
- 4) If the rotary actuator did move to the air position, then continue.
- 5) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- 6) Do the Repair Confirmation at the end of this task.
- (d) If the rotary actuator did move to the air position, then continue.
 - 1) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- (5) Replace the interconnect spring.
 - Interconnect Spring - Removal, AMM TASK 32-51-21-000-803
 - Interconnect Spring - Installation, AMM TASK 32-51-21-400-802
 - (a) Do the Repair Confirmation at the end of this task.
- (6) Replace the rudder pedal steering mechanism. These are the tasks:
 - Rudder Pedal Steering Mechanism Removal, AMM TASK 32-51-21-000-801
 - Rudder Pedal Steering Mechanism Installation, AMM TASK 32-51-21-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (7) Do this check for excessive friction in cable control system:
 - (a) Check for excessive friction in the pulleys and bearings.
 - (b) Check for pulleys contacting brackets, steering valve cover, local structure, attach hardware.
 - (c) Check for proper routing of cables
 - (d) Check summing mechanism for binding and looseness or contact with local structure or corrosion.
 - (e) Check tiller for over tightened handle attach nut.
 - (f) Check cable alignment.
 - (g) Check for frayed cables.
 - (h) Check for cable dragging on cable guards and local structure.
 - (i) Check the tiller steering cables for high tension, do this task: Nose Wheel Steering System Adjustment Check, AMM TASK 32-51-00-820-805.
 - 1) If necessary, adjust to the low end of tolerance, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
 - (j) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

- (1) Do this check of the rudder pedal steering:
 - (a) Steer the nose wheels to the left and right with the rudder pedals.
 - (b) Make sure the nose wheels turn to the left and right.
 - (c) If the nose wheels turn to the left and right, then you corrected the fault.

EFFECTIVITY
SIA ALL

32-51 TASK 805

D633A103-SIA

Page 213
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (2) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.
- (4) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

———— **END OF TASK** ————

806. Tiller Steering Does Not Operate - Fault Isolation

A. Description

- (1) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. Steering inputs from the tiller and rudder pedals go to the metering valve through a cable loop.
- (2) The nose wheel steering (NWS) system uses the hydraulic pressure for landing gear extension to turn the nose wheels.
- (3) The steering inputs go through the control cables NWSA (Nose Wheel Steering Control Cable A) and NWSB (Nose Wheel Steering Control Cable B) to the steering metering valve on the nose gear. The cables move the summing mechanism to provide in input to the metering valve. This input sends hydraulic pressure through the swivel valves to the steering actuators.
- (4) The two steering actuators get hydraulic pressure on the extend side, the retract side, or both sides. This moves the nose wheels, through the torsion links, up to 78 degrees to the left or right.
- (5) When the nose wheels get to the commanded position, the summing mechanism moves the metering valve back to neutral. This stops hydraulic pressure to the steering actuators and stops movement of the nose wheels.
- (6) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Ice or Foreign Object Debris (FOD) on the steering cables or summing mechanism.
- (2) NWS cable loop damage or adjustment
- (3) Summing mechanism
- (4) Steering metering valve
- (5) Nose Landing Gear Down or Up fuse
- (6) Steering actuators
- (7) Sticking or binding in Steering Collar
- (8) Jammed Steering Actuator attach hardware

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

EFFECTIVITY
SIA ALL

32-51 TASKS 805-806

D633A103-SIA

Page 214
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

D. Related Data

- (1) (SSM 32-50-00)
- (2) (WDM 32-51-11)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.



MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
 - (d) Install greased plates under the nose wheels.
 - (e) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
 - (f) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - (2) Examine the steering valve for sticky tow lever. Do this task: AMM PAGEBLOCK 32-51-11/201
 - (3) Do this check of the cable loop for the NWS (Nose Wheel Steering):

NOTE: Open the forward access panel on the left wall of the nose wheel well to get access to the NWS cable loop.

- (a) Move the towing lever to the TOW position and install the towing lever lockpin.
 - (b) Examine the cable loop between the tiller quadrant and the steering metering valve to see if it is broken or disconnected.
 - (c) If the NWS cable loop is broken, frayed or disconnected, then do these steps:
 - 1) Connect or replace the cable and do the adjustment, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If the NWS cable loop is not broken or disconnected, then continue.
 - (4) Do this check of the cable loop for the NWS nose wheel steering:
 - (a) Look for a blockage in the NWS cable loop between the tiller and the steering metering valve.
 - 1) Ice
 - 2) Foreign objects
 - 3) Jams
 - (b) If there is a blockage in the NWS cable loop, then do these steps:
 - 1) Remove the blockage from the cable loop and do the adjustment. Do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.

EFFECTIVITY
SIA ALL

32-51 TASK 806

D633A103-SIA

Page 215
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 2) Do the Repair Confirmation at the end of this task.
- (c) If there is not a blockage in the NWS cable loop, then continue.
- (5) Do this check to make sure the summing mechanism can move freely:
 - (a) Move the towing lever to the TOW position and install the towing lever lockpin.
 - (b) Remove the summing mechanism cover and disconnect the link assembly for the summing mechanism from the steering metering valve. Do this task: Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801.
 - (c) Use the tiller to move the summing mechanism to the left and right.
 - (d) If the summing mechanism moves freely with light tension in the centering spring, continue.
 - (e) If the summing mechanism does not move freely when you use the tiller, then do these steps:
 - 1) Repair or replace the pulleys in the NWS cable loop and do the adjustment for the NWS cables, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802
 - 2) Do the Repair Confirmation at the end of this task.
- (6) Check the tiller handle nut for proper torque (Nose Landing Gear Tiller Assembly Installation, AMM TASK 32-51-41-400-801).
 - (a) Do the Repair Confirmation at the end of this task.
- (7) Do this check for hydraulic leaks at the steering metering valve or the steering actuators:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Move the tiller fully to the left and the right several times.
 - (c) Examine the steering metering valve and steering actuators to see if there are hydraulic leaks.
 - 1) Look and listen for leaks and feel for heat in the steering metering valve and steering actuators.
 - (d) If there are hydraulic leaks on the steering metering valve, then do these steps:
 - 1) Repair the leaks or replace the steering metering valve. To replace the valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (e) If there are hydraulic leaks on the steering actuators, then do these steps:
 - 1) Repair the leaks or replace the nose gear steering actuator(s). To replace the actuator(s), these are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (f) If there are no hydraulic leaks on the steering metering valve or the steering actuators, then continue.

EFFECTIVITY
SIA ALL

32-51 TASK 806

D633A103-SIA

Page 216
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (8) Do a check of the steering collar for binding, jams, loose or missing attach hardware, broken bearings, metal transfer between bearings and collar main bore.
- (9) Do a check for binding in the steering sleeve and steering plate
- (10) Do a check of the steering actuator(s) for seized or gauged or sticky trunnion bearings
- (11) Replace the steering metering valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (12) Replace the steering actuators. Do this task: AMM PAGEBLOCK 32-51-51/401
- (13) Replace the nose gear extend fuse or nose gear retract fuse per AMM PAGEBLOCK 32-33-71/401

F. Repair Confirmation

- (1) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (c) If the nose wheels turn 78 degrees to the left and right, then you corrected the fault.
- (2) Lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.
- (4) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

END OF TASK

807. Tiller Steering Response is Sluggish - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The tiller steering operates, but it is sluggish.
- (2) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. Steering inputs from the tiller and rudder pedals go to the metering valve through a cable loop.
- (3) The nose wheel steering system uses the hydraulic pressure for landing gear extension to turn the nose wheels.
- (4) The steering inputs go through the control cables NWSA and NWSB to the steering metering valve on the nose gear. The cables move the summing mechanism to provide an input to the metering valve. This input sends hydraulic pressure through the swivel valves to the steering actuators.
- (5) The two steering actuators get hydraulic pressure on the extend side, the retract side, or both sides. This moves the nose wheels, through the torsion links, up to 78 degrees to the left or right.

EFFECTIVITY
SIA ALL

32-51 TASKS 806-807

D633A103-SIA

Page 217
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (6) When the nose wheels get to the commanded position, the summing mechanism moves the metering valve back to neutral. This stops hydraulic pressure to the steering actuators and stops movement of the nose wheels.
- (7) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Leakage inside the steering metering valve or the steering actuators or sticky tow lever.
- (2) Low hydraulic pressure.
- (3) Stuck nose landing gear steering system check valves.
- (4) Ice or Foreign Object Debris (FOD) on the steering cables or summing mechanism.
- (5) Sticking or binding steering collar.
- (6) Excessive friction in the cable control system.
- (7) A restriction in the hydraulic lines from the selector valve.
- (8) Seized or gauged steering actuator trunnions.
- (9) Nose Landing Gear Down or Up fuse.
- (10) Binding Steering Tiller.
- (11) Rigging of the landing gear selector valve

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (SSM 32-50-00)
- (2) (WDM 32-51-11)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (d) Install greased plates under the nose wheels.

EFFECTIVITY
SIA ALL

32-51 TASK 807

D633A103-SIA

Page 218
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (e) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- (f) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (2) Check the NWS control cables for ice or foreign object debris
- (3) Make sure there is normal pressure for hydraulic system A.
 - (a) If the hydraulic pressure for system A is low, then do these steps:
 - 1) Do this task: System A Hydraulic Pressure Below 2800 psi Problem - Fault Isolation, 29-10 TASK 810.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the hydraulic pressure for system A is normal, then continue.
- (4) Examine the tow lever to make sure it is not sticking. Do this task: AMM PAGEBLOCK 32-51-11/201
- (5) Do this check for hydraulic leaks at the steering metering valve or the steering actuators:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Move the tiller fully to the left and right several times.
 - (c) Examine the steering metering valve and steering actuators to see if there are hydraulic leaks.
 - 1) Look and listen for leaks and feel for heat in the steering metering valve and steering actuators.
 - (d) If there are hydraulic leaks on the steering metering valve, then do these steps:
 - 1) Repair the leaks or replace the steering metering valve. To replace the valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (e) If there are hydraulic leaks on the steering actuators, then do these steps:
 - 1) Repair the leaks or replace the nose gear steering actuator(s). To replace the actuator(s), these are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (f) If there are no hydraulic leaks on the steering metering valve or the steering actuators, then continue.
- (6) Do this check for excessive friction in cable control system:
 - (a) Check for excessive friction in the pulleys and bearings.
 - (b) Check for pulleys contacting brackets, steering valve cover, local structure, attach hardware.
 - (c) Check for proper routing of cables

EFFECTIVITY
SIA ALL

32-51 TASK 807

D633A103-SIA

Page 219
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (d) Check summing mechanism for binding and looseness or contact with local structure or corrosion.
- (e) Check tiller for over tightened handle attach nut.
- (f) Check cable alignment.
- (g) Check for frayed cables.
- (h) Check for cable dragging on cable guards and local structure.
- (i) Check the tiller steering cables for high tension, do this task: Nose Wheel Steering System Adjustment Check, AMM TASK 32-51-00-820-805.
 - 1) If necessary, adjust to the low end of tolerance, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
- (7) Check the tiller handle nut for proper torque (Nose Landing Gear Tiller Assembly Installation, AMM TASK 32-51-41-400-801).
 - (a) Do the Repair Confirmation at the end of this task.
- (8) Replace the steering system check valves.
- (9) Check steering collar for binding, jams, loose or missing attach hardware, broken bearings, metal transfer between bearings and collar main bore.
 - (a) Do the Repair Confirmation at the end of this task.
 - (b) If the steering collar is free to move, then continue.
- (10) Check for binding in steering sleeve and steering plate.
- (11) Check steering actuator for seized or galled or sticky trunnion bearings
- (12) Replace the nose gear extend or nose gear retract per AMM PAGEBLOCK 32-33-71/401
- (13) Make sure there are no restrictions in the hydraulic lines from the landing gear selector valve.
 - (a) If there is a restriction in the hydraulic lines from the selector valve to the metering valve, then do these steps:
 - 1) Flush or change the hydraulic lines.
 - 2) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

- (1) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (c) If the nose wheels turn 78 degrees to the left and right, then you corrected the fault.
- (2) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.
- (4) Lower the nose of the airplane and remove the jacks, do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-51 TASK 807

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 220
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

808. Tiller Steering Steers Left or Right Direction Only - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The tiller steering steers in the right or left direction only.
- (2) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. Steering inputs from the tiller and rudder pedals go to the metering valve through a cable loop.
- (3) The nose wheel steering system uses the hydraulic pressure for landing gear extension to turn the nose wheels.
- (4) The steering inputs go through the control cables NWSA and NWSB to the steering metering valve on the nose gear. The cables move the summing mechanism to provide in input to the metering valve. This input sends hydraulic pressure through the swivel valves to the steering actuators.
- (5) The two steering actuators get hydraulic pressure on the extend side, the retract side, or both sides. This moves the nose wheels, through the torsion links, up to 78 degrees to the left or right.
- (6) When the nose wheels get to the commanded position, the summing mechanism moves the metering valve back to neutral. This stops hydraulic pressure to the steering actuators and stops movement of the nose wheels.
- (7) SDS 32-51-00, p001

B. Possible Causes

- (1) Ice or Foreign Object Debris (FOD) on the steering cables or summing mechanism
- (2) Summing mechanism
- (3) Steering metering valve
- (4) Cable tension too high
- (5) Excessive friction in the control system
- (6) Sticking or binding in Steering Collar
- (7) Jammed Steering Actuator attach hardware
- (8) Seized or galled steering actuator trunnion
- (9) Steering Actuator internal leakage
- (10) Tiller binding

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (WDM 32-51-11)
- (2) (SSM 32-50-00)

EFFECTIVITY
SIA ALL

32-51 TASK 808

D633A103-SIA

Page 221
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.
 - (b) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



WARNING

MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (c) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (d) Lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
 - (e) Install greased plates under the nose wheels.
 - (f) Lower the nose of the airplane and remove the jacks, do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- (2) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (b) If the nose wheel steers in the right or left direction only, then continue.
 - (c) If the nose wheel steers to the full travel to both the left and right, then there was an intermittent fault.
 - 1) Do the Repair Confirmation at the end of this task.
- (3) Check steering control cable loop for ice or foreign object debris.
- (4) Do this check to make sure the summing mechanism is free to move in both directions:
 - (a) Remove the screws and washers that hold the summing mechanism cover to the summing mechanism bracket.
 - (b) Remove the summing mechanism cover.
 - (c) Examine the summing mechanism and make sure it is free to move in both directions.
 - (d) If the summing mechanism not free to move in both directions, then do these steps:
 - 1) Repair or replace the summing mechanism. To replace the summing mechanism, these are the tasks:
 - Summing Mechanism Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-52-020-801
 - Summing Mechanism Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-52-420-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (e) If the summing mechanism is free to move in both directions, then continue.
- (5) Do this check for hydraulic leaks at the steering metering valve or the steering actuators:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Move the tiller fully to the left and right several times

EFFECTIVITY
SIA ALL

32-51 TASK 808

D633A103-SIA

Page 222
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (c) Examine the steering metering valve and steering actuators to see if there are hydraulic leaks.
 - 1)) Look and listen for leaks and feel for heat in the steering metering valve and steering actuators.
- (6)) If there are hydraulic leaks on the steering metering valve, then do these steps:
 - (a) Repair the leaks or replace the steering metering valve. To replace the valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
 - (b) Do the Repair Confirmation at the end of this task.
 - (c) If there are hydraulic leaks on the steering actuators, then do these steps:
 - 1) Repair the leaks or replace the nose gear steering actuator(s). To replace the actuator(s), these are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - (d) Do the Repair Confirmation at the end of this task.
 - (e) If there are no hydraulic leaks on the steering metering valve or the steering actuators, then continue.
- (7) Do this check for excessive friction in cable control system:
 - (a) Check for excessive friction in the pulleys and bearings.
 - (b) Check for pulleys contacting brackets, steering valve cover, local structure, attach hardware.
 - (c) Check for proper routing of cables
 - (d) Check summing mechanism for binding and looseness or contact with local structure or corrosion.
 - (e) Check tiller for over tightened handle attach nut.
 - (f) Check cable alignment.
 - (g) Check for frayed cables.
 - (h) Check for cable dragging on cable guards and local structure.
 - (i) Check the tiller steering cables for high tension, do this task: Nose Wheel Steering System Adjustment Check, AMM TASK 32-51-00-820-805.
 - 1) If necessary, adjust to the low end of tolerance, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
 - (j) Do the Repair Confirmation at the end of this task.
- (8) Check steering collar for binding, jams, loose or missing attach hardware, broken bearings, metal transfer between bearings and collar main bore.
- (9) Check for binding in steering sleeve and steering plate.
- (10) Check steering actuator for seized or galled or sticky trunnion bearings

EFFECTIVITY
SIA ALL

32-51 TASK 808

D633A103-SIA

Page 223
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

F. Repair Confirmation

- (1) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (c) If the nose wheels turn 78 degrees to the left and right, then you corrected the fault.
- (2) Lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.
- (4) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

END OF TASK

810. Airplane Steering Steers LEFT or RIGHT Direction During Taxi, Takeoff, or Landing - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The Airplane steers to the LEFT, or RIGHT direction during taxi, takeoff, or landing.
- (2) Steering inputs are from the Steering Tiller or the Rudder Pedals. When you move the Steering Tiller full travel the Nose Wheels turn a maximum of 78 degrees in the LEFT or RIGHT direction. Steering inputs from the Steering Tiller and Rudder Pedals go to the Metering Valve through a Cable Loop.
- (3) The Nose Wheel Steering System uses the Hydraulic Pressure for Landing Gear Extension to turn the Nose Wheels.
- (4) The steering inputs go through the Control Cables, NWSA and NWSB, to the Steering Metering Valve on the Nose Gear. The Cables move the Summing Mechanism to provide input to the Steering Metering Valve. This input sends Hydraulic Pressure through the Swivel Valves to the Steering Actuators.
- (5) The two Steering Actuators get Hydraulic Pressure on the EXTEND side, the RETRACT side, or both sides. This moves the Nose Wheels, through the Torsion Links, up to 78 degrees to the LEFT or RIGHT.
- (6) When the Nose Wheels get to the Commanded Position, the Summing Mechanism moves the Metering Valve back to NEUTRAL. This stops Hydraulic Pressure to the Steering Actuators and stops movement of the Nose Wheels.

B. Possible Causes

- (1) Summing Mechanism
- (2) Cable Control System
- (3) Steering Metering Valve
- (4) Steering Actuator
- (5) Steering Collar
- (6) Rotary Actuator, M1177
- (7) MLG Brakes

EFFECTIVITY
SIA ALL

32-51 TASKS 808-810

D633A103-SIA

Page 224
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2
C	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) WDM 32-51-11
(2) SSM 32-51-11

E. Fault Isolation Procedure

- (1) Make sure that the Control Lever for the Landing Gear is in the DN Position.
(2) Pressurize Hydraulic System A. This is the task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (3) Make sure that the Downlock Pins are installed in the Nose and Main Landing Gear. This is the task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (4) Lift the Airplane Nose with forward body jack, COM-5892. This is the task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (5) Install Greased Plates under the Nose Wheels.
- (6) Lower the Airplane Nose and remove the forward body jack, COM-5892. This is the task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- (7) Use the Steering Tiller to do this check of the Nose Wheel Steering:
- (a) Steer the Nose Wheels to the full travel to the LEFT and RIGHT with the Steering Tiller.
 - (b) If the Nose Wheel steers in the RIGHT or LEFT direction only, then continue.
 - (c) If Nose Wheel does not return to CENTER, then continue.
 - (d) If the Nose Wheel steers to full travel for both the LEFT and RIGHT, then there was an intermittent problem.
 - 1) Do the Repair Confirmation at the end of this task.
- (8) Do this check to make sure the Summing Mechanism is free to move in both directions:
- (a) Remove the screws and washers that hold the Summing Mechanism Cover to the Summing Mechanism Bracket.
 - (b) Remove the Summing Mechanism Cover.
 - (c) Examine the Summing Mechanism and make sure it is free to move in both directions.
 - (d) If the Summing Mechanism is not free to move in both directions, then do these steps:
 - 1) Repair or replace the Summing Mechanism. These are the tasks:
 - Summing Mechanism Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-52-020-801

EFFECTIVITY
SIA ALL

32-51 TASK 810

D633A103-SIA

Page 225
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Summing Mechanism Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-52-420-801
- 2) Do the Repair Confirmation at the end of this task.
- (e) If the Summing Mechanism is free to move in both directions, then continue.
- (9) Do this check for Excessive Friction in the Cable Control System:
 - (a) Check for Excessive Friction in the Pulleys and Bearings.
 - (b) Check for Pulleys contacting Brackets, Steering Valve Cover, local structure, and attach hardware.
 - (c) Check for the proper routing of Cables.
 - (d) Check the Summing Mechanism for binding and looseness or contact with the local structure or corrosion.
 - (e) Check the Steering Tiller for over tightened handle attach nut.
 - (f) Check the Cable alignment.
 - (g) Check for frayed Cables.
 - (h) Check for the Cables dragging on the cable guards and the local structure.
 - (i) Check the Steering Tiller Steering Cables for high tension. This is the task: Nose Wheel Steering System Adjustment Check, AMM TASK 32-51-00-820-805.
 - 1) If necessary, adjust to the low end of tolerance. This is the task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
 - (j) Do the Repair Confirmation at the end of this task.
- (10) Check the Nose Wheel Steering Control System adjustment per AMM PAGEBLOCK 32-51-00/501.
- (11) Examine the Steering Valve for a sticky Tow Lever. This is the task: AMM PAGEBLOCK 32-51-11/201.
- (12) Do this check for Hydraulic Leaks at the Steering Metering Valve or the Steering Actuators:
 - (a) Remove the Tow Lever Lockpin and let the Tow Lever move to the OFF position.
 - (b) Move the Steering Tiller fully to the LEFT and RIGHT several times.
 - (c) Examine the Steering Metering Valve and Steering Actuators to see if there are hydraulic leaks.
 - 1) Look and listen for leaks and feel for heat in the Steering Metering Valve and Steering Actuators.
 - a) Repair the leaks or replace the Steering Metering Valve. These are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (d) If there are hydraulic leaks on the Steering Actuators, then do these steps:
 - 1) Repair the leaks or replace the Nose Gear Steering Actuator(s). These are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801

EFFECTIVITY
SIA ALL

32-51 TASK 810

D633A103-SIA

Page 226
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 2) Do the Repair Confirmation at the end of this task.
- (e) If there are no hydraulic leaks on the Steering Metering Valve or the Steering Actuators, then continue.
- (13) Replace the Steering Metering Valve, these are the tasks:
- Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (14) Check the Steering Actuator for seized, galled or sticky Trunnion Bearings.
- (15) Check the Steering Collar for binding, jams, loose or missing attaching hardware, broken Bearings, metal transfer between Bearings and Collar Main Bore and proper assembly.
- (16) Check for binding in the Steering Sleeve and the Steering Plate.
- (17) Do this check of the Rudder Pedal Steering Rotary Actuator, M1177, and/or Cable Loop:
- NOTE:** The Rotary Actuator is below the Flight Deck Floor. You get access to the Actuator through the Access Panel on the left side Bulkhead of the Nose Gear Wheel Well.
- (a) Make sure that the Nose Gear is CENTERED and Hydraulic System A is OFF.
- (b) Put the airplane in the Air Mode. This is the task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- (c) Pressurize Hydraulic System A. This is the task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (d) Return the airplane to the Ground Mode. This is the task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- (e) Check for movement of NLG and the Steering Tiller.
- (f) If Steering Tiller or Gear moves, repeat the test and check the angular movement of the Rotary Actuator.
- 1) If the Rotary Actuator moves more than $107 \pm 5^\circ$ arc (1.87 ± 0.09 rad) from the aligned marks in the Air position, replace the Rotary Actuator M1177. These are the tasks:
- Rudder Pedal Steering Rotary Actuator Removal, AMM TASK 32-51-81-000-801
 - Rudder Pedal Steering Rotary Actuator Installation, AMM TASK 32-51-81-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (g) Do this check of the Rudder Pedal Steering Rotary Actuator, M1177, and Cable Loop several times to make sure that the Rotary Actuator is serviceable.
- (18) Adjust the rudder control cables RA and RB. This is the task. Rudder Control Cables RA and RB Adjustment, AMM TASK 27-21-00-820-808-002.
- (a) Do the Repair Confirmation at the end of this task.
- (19) Do this check for the MLG brakes dragging or pulling to the LEFT or RIGHT. These are the tasks:
- Brakes Grab, Drag, or Lock - Fault Isolation, 32-42 TASK 816
 - Brakes Pull to the Left or Right - Fault Isolation, 32-42 TASK 817

F. Repair Confirmation

- (1) Use the Steering Tiller to do this check of the Nose Wheel Steering:

EFFECTIVITY
SIA ALL

32-51 TASK 810

D633A103-SIA

Page 227
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) Remove the Towing Lever Lockpin and let the Towing Lever move to the OFF position.
 - (b) Steer the Nose Wheels to the full travel to the LEFT and RIGHT with the Steering Tiller.
 - (c) If the Nose Wheels turn 78 degrees to the LEFT and RIGHT, then you corrected the problem.
 - (d) If the problem still exists, continue the fault isolation procedure at the subsequent step.
- (2) Lift the Airplane Nose with forward body jack, COM-5892. This is the task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
 - (3) Remove the Greased Plates from under the Nose Wheels.
 - (4) Lower the Airplane Nose and remove the forward body jack, COM-5892. This is the task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-51 TASK 810

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 228
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

801. Main Landing Gear Down-And-Locked Sensor Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 32-61001 LEFT DWN LKD A

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-61101 LEFT DWN LKD A

SIA ALL

(c) 32-61005 RIGHT DWN LKD A

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-61105 RIGHT DWN LKD A

SIA ALL

(e) 32-61007 LEFT DWN LKD B

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(f) 32-61107 LEFT DWN LKD B

SIA ALL

(g) 32-61011 RIGHT DWN LKD B

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(h) 32-61111 RIGHT DWN LKD B

(2) These maintenance messages show that a main landing gear down lock sensor disagrees with the other main landing gear locked sensors.

(a) Maintenance message number 32-61001 will be set if the left down and locked A sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and left down and locked B sensor indicates up.

(b) Maintenance message 32-61101 will be set if the left down and locked A sensor indicates up with the other main gear sensors indicating that both main gear are down and locked.

(c) Maintenance message number 32-61005 will be set if the right down and locked A sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and right down and locked B sensor indicates up.

(d) Maintenance message 32-61105 will be set if the right down and locked A sensor indicates up with the other main gear sensors indicating that both main gear are down and locked.

(e) Maintenance message number 32-61007 will be set if the left down and locked B sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and left down and locked A sensor indicates up.

(f) Maintenance message 32-61107 will be set if the left down and locked B sensor indicates up with the other main gear sensors indicating that both main gear are down and locked.

(g) Maintenance message number 32-61011 will be set if the right down and locked B sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and right down and locked A sensor indicates up.

EFFECTIVITY
SIA ALL

32-61 TASK 801

D633A103-SIA

Page 201
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- (h) Maintenance message 32-61111 will be set if the right down and locked B sensor indicates up with the other main gear sensors indicating that both main gear are down and locked.

SIA ALL

B. Possible Causes

- (1) Left main landing gear down and locked sensor, S0071 (S0302)
- (2) Right main landing gear down and locked sensor, S0073 (S0301)
- (3) Proximity Switch Electronic Unit (PSEU), M02061
- (4) Wiring problem

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (32-61 TASK SUPPORT Figure 302)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Do these steps to show the status of the applicable landing gear position sensor:
 - (a) Push the ON/OFF switch to turn the PSEU BITE on.
 - (b) Push the down switch until OTHER FUNCTNS? shows.
 - (c) Push the YES switch to select OTHER FUNCTNS?.
 - (d) Push the down switch until I/O MONITOR? shows.
 - (e) Push the YES switch to select I/O MONITOR.
 - (f) Push the down switch until SENSORS? shows.
 - (g) Push the YES switch to select SENSORS.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (h) Push the down arrow switch until the sensor number shows.
 - 1) For maintenance message number 32-61001 and 32-61101, show sensor S0071
 - 2) For maintenance message number 32-61005 and 32-61105, show sensor S0073
 - 3) For maintenance message number 32-61007 and 32-61107, show sensor S0302

EFFECTIVITY
SIA ALL

32-61 TASK 801

D633A103-SIA

Page 202
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- 4) For maintenance message number 32-61011 and 32-61111, show sensor S0301

SIA ALL

- (i) Push the YES switch to show the sensor status.
- (j) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a de-actuator on the face of the sensor face.
NOTE: The de-actuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent fault.
NOTE: The following tests can be performed to find possible causes of intermittent faults.
 - a) Measure the clearance between the sensor and target to determine if the sensor clearance is incorrect. Do this task: Main Landing Gear Down-and-Locked Sensor Clearance Measurement, AMM TASK 32-61-31-220-801.
 - b) Do a check of the bonding resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual).
 - c) Make sure that the resistance is $\leq 0.001 \Omega$.
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (k) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
- (2) If the sensor status is TGT NEAR, with a de-actuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-61001, 32-61101, 32-61005 or 32-61105, disconnect connector D10982 from the PSEU.
- 2) For maintenance message number 32-61007, 32-61107, 32-61011, or 32-61111, disconnect connector D10984 from the PSEU.

SIA ALL

- 3) Do these steps to measure the resistance between the pins of the PSEU connector D10982 (D10984) for the blue terminal and the structure ground (yellow) (Table 201)
 - a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue (white/blue) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the FREQ button until 120 Hz is displayed in upper right corner.

EFFECTIVITY
SIA ALL

32-61 TASK 801

D633A103-SIA

Page 203
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- d) Push and hold the L/C/R button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.

NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.

- e) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

- f) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 Ω .

NOTE: The line and interface resistance can be considered and can add up to 2 Ω .

- g) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ω .

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC)

- 4) Do these steps to measure the resistance between the pins of the PSEU connector D10982 (D10984) for the red terminal and the structure ground (yellow) (Table 201)

- a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red (white/red) and yellow (white/yellow) sensor leads.
- b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
- c) Push the FREQ button until 120 Hz is displayed in upper right corner.
- d) Push and hold the L/C/R button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.

NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.

- e) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

- f) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 Ω .

NOTE: The line and interface resistance can be considered and can add up to 2 Ω .



737-600/700/800/900 FAULT ISOLATION MANUAL

- g) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 Ω .

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC)

- 5) Re-connect connector D10982 (D10984) to the PSEU.
- 6) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 7) These are the connections on the sensor and the PSEU to check the resistances at:

Table 201 MLG DOWN-AND-LOCKED SENSOR RESISTANCES

SENSOR	SENSOR LEAD		PSEU CONNECTOR
S0071	YELLOW	-----	GROUND D10982
	BLUE	-----	pin 55 D10982
	RED	-----	pin 33
S0073	YELLOW	-----	GROUND D10982
	BLUE	-----	pin 12 D10982
	RED	-----	pin 11
S0301	YELLOW	-----	GROUND D10984
	BLUE	-----	pin 12 D10984
	RED	-----	pin 11
S0302	YELLOW	-----	GROUND D10984
	BLUE	-----	pin 55 D10984

EFFECTIVITY
SIA ALL

32-61 TASK 801

D633A103-SIA

Page 205
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Table 201 MLG DOWN-AND-LOCKED SENSOR RESISTANCES (Continued)

RED

pin 33

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual).
- 1) Make sure that the resistance is $\leq 0.001 \Omega$.
 - 2) If the resistance is $\geq 0.001 \Omega$, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
- Main Landing Gear Down-and-Locked Sensor Removal, AMM TASK 32-61-31-020-801
 - Main Landing Gear Down-and-Locked Sensor Installation, AMM TASK 32-61-31-400-801
- 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a de-actuator installed, then do these steps:
- (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Main Landing Gear Down-and-Locked Sensor Clearance Measurement, AMM TASK 32-61-31-220-801.
 - (b) If the sensor clearance is not correct, then do these steps:
 - 1) Adjust the sensor clearance. To adjust the clearance, do this task: Main Landing Gear Down-and-Locked Sensor Clearance Adjustment, AMM TASK 32-61-31-400-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Main Landing Gear Down-and-Locked Sensor Removal, AMM TASK 32-61-31-020-801
 - Main Landing Gear Down-and-Locked Sensor Installation, AMM TASK 32-61-31-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is FAILSAFE, then do these steps:
- (a) Disconnect the sensor leads from the airplane wiring.
 - (b) Temporarily install the leads from a replacement sensor to the airplane wiring.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - (e) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - 1) Replace the sensor. These are the tasks:

EFFECTIVITY
SIA ALL

32-61 TASK 801

D633A103-SIA

Page 206
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- Main Landing Gear Down-and-Locked Sensor Removal, AMM TASK 32-61-31-020-801
 - Main Landing Gear Down-and-Locked Sensor Installation, AMM TASK 32-61-31-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (f) If the sensor status is FAILSAFE, then do these steps and continue:
- 1) Remove the replacement sensor leads from the junction box connector.
 - 2) Re-install the leads from the installed sensor.
- (5) Do this check of the wiring:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message number 32-61001, 32-61101, 32-61005 or 32-61105, disconnect connector D10982 from the PSEU.
- (b) For maintenance message number 32-61007, 32-61107, 32-61011, or 32-61111, disconnect connector D10984 from the PSEU.

SIA ALL

- (c) Do a wiring check between these connections on the sensor and the PSEU: (Table 201)
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D10982 (D10984) to the PSEU.
 - 3) Do the Repair Confirmation at the end of this task.
 - (e) If you do not find a problem with the wiring, then do a check of the bonding resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual).
 - 1) Make sure that the resistance is $\leq 0.001 \Omega$.
 - 2) If the resistance is $\geq 0.001 \Omega$, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (6) Do these steps to replace the PSEU:
- (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

G. Repair Confirmation

- (1) Do this test of the applicable sensor:
 - (a) Put a de-actuator on the face of the sensor.
 - (b) Remove the de-actuator from the face of the sensor.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (d) If you do not find the maintenance message, then you corrected the fault.

EFFECTIVITY
SIA ALL

32-61 TASK 801

D633A103-SIA

Page 207
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (e) If the sensor test is not satisfactory, then continue the Fault Isolation at the subsequent step.

————— **END OF TASK** —————

802. Main Landing Gear Uplock Sensor Fault - Fault Isolation

A. Description

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (1) This task is for these maintenance messages:

(a) 32-61002 LEFT UP LKD A

- 1) This message is set when the Left Up and Locked A Sensor indicates UP and the other Main Gear Sensors indicate that both Main Gears are DOWN and LOCKED.

(b) 32-61102 LEFT UP LKD A

- 1) This message is set when the Left Up and Locked A Sensor indicates DOWN and the other Main Gear Sensors indicate that both Main Gears are UP and LOCKED.

(c) 32-61006 RIGHT UP LKD A

- 1) This message is set when the Right Up and Locked A Sensor indicates UP and the other Main Gear Sensors indicate that both Main Gears are DOWN and LOCKED.

(d) 32-61106 RIGHT UP LKD A

- 1) This message is set when the Right Up and Locked A Sensor indicates DOWN and the other Main Gear Sensors indicate that both Main Gears are UP and LOCKED.

(e) 32-61008 LEFT UP LKD B

- 1) This message is set when the Left Up and Locked B Sensor indicates UP and the other Main Gear Sensors indicate that both Main Gears are DOWN and LOCKED.

(f) 32-61108 LEFT UP LKD B

- 1) This message is set when the Left Up and Locked B Sensor indicates DOWN and the other Main Gear Sensors indicate that both Main Gears are UP and LOCKED.

(g) 32-61012 RIGHT UP LKD B

- 1) This message is set when the Right Up and Locked B Sensor indicates UP and the other Main Gear Sensors indicate that both Main Gears are DOWN and LOCKED.

(h) 32-61112 RIGHT UP LKD B

- 1) This message is set when the Right Up and Locked B Sensor indicates DOWN and the other Main Gear Sensors indicate that both Main Gears are UP and LOCKED.

SIA ALL

- (2) The UP Sensors usually show TGT NEAR in the air when the gear is retracted. On the ground, the UP Sensors usually show TGT FAR for gear extended. Some failure conditions can cause the PSEU to show the UP Sensor as TGT NEAR or FAILSAFE on the ground.

- (a) If TGT NEAR shows when the gear is extended, this is usually because of too much resistance in the sensor or sensor wiring.

- (b) When the gear is extended, FAILSAFE usually shows because there is an open, or short circuit in the sensor or sensor wiring.

- (c) When the gear is retracted and TGT FAR shows, this is usually because a sensor clearance adjustment is necessary.

EFFECTIVITY
SIA ALL

32-61 TASKS 801-802

D633A103-SIA

Page 208
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

B. Possible Causes

- (1) Left Main Landing Gear Up and Locked Sensor, S0072
- (2) Left Main Landing Gear Up and Locked Sensor 2, S1016
- (3) Right Main Landing Gear Up and Locked Sensor, S0074
- (4) Right Main Landing Gear Up and Locked Sensor 2, S1017
- (5) PSEU, M2061
- (6) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (32-61 TASK SUPPORT Figure 303)
- (2) WDM 32-64-11
- (3) WDM 32-64-12
- (4) SSM 32-61-11
- (5) SSM 32-61-12

E. Initial Evaluation

- (1) Look for obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Do these steps to show the status of the applicable Landing Gear Position Sensor:
 - (a) Push the ON/OFF Switch to turn the PSEU BITE ON.
 - (b) Push the DOWN Switch until OTHER FUNCTNS? shows.
 - (c) Push the YES Switch to select OTHER FUNCTNS?.
 - (d) Push the DOWN Switch until I/O MONITOR? shows.
 - (e) Push the YES Switch to select I/O MONITOR.
 - (f) Push the DOWN Switch until SENSORS? shows.
 - (g) Push the YES Switch to select SENSORS.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (h) Push the DOWN Arrow Switch until the sensor number shows.
 - 1) For Maintenance Message 32-61002 or 32-61102, show sensor S0072
 - 2) For Maintenance Message 32-61006 or 32-61106, show sensor S0074
 - 3) For Maintenance Message 32-61008 or 32-61108, show sensor S1016
 - 4) For Maintenance Message 32-61012 or 32-61112, show sensor S1017

SIA ALL

- (i) Push the YES Switch to show the Sensor Status.

EFFECTIVITY
SIA ALL

32-61 TASK 802

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 209
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (j) Make a note of the Sensor Status, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you find obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
- (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
- (2) If the Sensor Status is TGT NEAR, then do these steps to do a Resistance Check of the Sensors and Wires as follows (WDM 32-64-11, WDM 32-64-12):

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For Maintenance Message 32-61002, 32-61006, 32-61102, or 32-61106, disconnect connector D10982 from the PSEU.
- (b) For Maintenance Message 32-61008, 32-61012, 32-61108, or 32-61112, disconnect connector D10984 from the PSEU.

SIA ALL

- (c) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the Blue (White/Blue) and Yellow (White/Yellow) or Red (White/Red) and Yellow (White/Yellow) Sensor Leads as applicable.
- (d) Push the L/C/R Mode Switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (Resistance Mode).
- (e) Push the FREQ button until 120 Hz is displayed in upper right corner.
- (f) Push and hold the L/C/R button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the Series Mode.

NOTE: "Ser" shows in the Upper Right corner of the display to indicate that the meter is in the Series Mode.

- (g) The correct Nominal Resistance reading (Blue and Yellow) at Normal Room Temperature (CMM DC Resistance, Bench Test Condition) is referred to as R1. The correct R1 is 344.5 to 351.5 Ω .

NOTE: The Line and Interface Resistance can be considered and can add up to 2 Ω .

- (h) The correct Nominal Resistance reading (Red and Yellow) at Normal Room Temperature (CMM DC Resistance, Bench Test Condition) is referred to as L1. The correct L1 is 27 to 33 Ω .

NOTE: The Line and Interface Resistance can be considered and can add up to 2 Ω .

- (i) The permitted Resistance reading (Blue and Yellow) for In-service Sensors exposed to varying conditions is 338 to 361 Ω .
- (j) The permitted Resistance reading (Red and Yellow) for in-service sensors exposed to varying conditions is 24 to 38 Ω .

NOTE: For On-Wing Resistance readings that deviate from the shown limits, you should also consider the increased/lowered Resistance associated with a Higher/Lower Temperature of the Proximity Sensor at the time of the measurement before you decide on the condition of the Proximity Sensor.

Temperatures can deviate significantly from Normal Room Temperature, on airplanes with systems ON, or on airplanes that just arrived from a flight, or have been sitting out in the hot or cold weather.

EFFECTIVITY
SIA ALL

32-61 TASK 802

D633A103-SIA

Page 210
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

You need to know that the Resistance values can be out of limits and the Proximity Sensor could still be in good condition.

Copper has a Temperature Coefficient of Resistance which is approximately 0.40 $\Omega/^\circ\text{C}$.

The deviation of the Coil Circuit (generally the Yellow-Red Circuit) can be calculated at the rate of 0.40 $\Omega/^\circ\text{C}$ from Standard Temperature (25 $^\circ\text{C}$).

- (k) Refer to the table below for the Indicating System 1 L (R) MLG Sensor connections, and Read the Resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 (WDM 32-64-11):

IND SYSTEM 1 (L MLG)

PSEU D10982	SNSR, S72 LEAD	RESISTANCE
pin 57 (BLUE)	YEL (GD-1948-AC)	338 to 361 Ω
pin 58 (RED)	YEL (GD-1948-AC)	24 to 38 Ω

IND SYSTEM 1 (R MLG)

PSEU D10982	SNSR, S74 LEAD	RESISTANCE
pin 46 (BLUE)	YEL (GD1950-AC)	338 to 361 Ω
pin 45 (RED)	YEL (GD1950-AC)	24 to 38 Ω

- (l) Refer to the table below for the Indicating System 2 L (R) MLG Sensor connections, and Read the Resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 (WDM 32-64-12):

IND SYSTEM 2 (L MLG)

PSEU D10984	SNSR, S1016 LEAD	RESISTANCE
pin 15 (BLUE)	YEL (GD-1948AC)	338 to 361 Ω
pin 5 (RED)	YEL (GD-1948AC)	24 to 38 Ω

IND SYSTEM 2 (R MLG)

PSEU D10984	SNSR, S1017 LEAD	RESISTANCE
pin 46 (BLUE)	YEL (GD1950-AC)	338 to 361 Ω
pin 45 (RED)	YEL (GD1950-AC)	24 to 38 Ω

- (m) Also, do a check of the Bonding Resistance between the Sensor Ground and the Airplane Structure (Standard Wiring Practices Manual).
- 1) Make sure that the Resistance is $\leq 0.001 \Omega$.

EFFECTIVITY
SIA ALL

32-61 TASK 802

D633A103-SIA

Page 211
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- a) If the Resistance is greater than 0.Ω
 - b) If you do not find a problem with the Sensor Ground, then continue.
- (n) If the Resistance values are not in the limits, then examine the wiring between the PSEU and the applicable MLG Uplock Sensor as follows (WDM 32-64-11, WDM 32-64-12):

IND SYSTEM 1 (L MLG)

PSEU	SNSR, S72
D10982	SPLICE
pin 57 (BLUE)	SP344
pin 58 (RED)	SP342

IND SYSTEM 1 (R MLG)

PSEU	SNSR, S74
D10982	SPLICE
pin 46 (BLUE)	SP364
pin 45 (RED)	SP362

IND SYSTEM 2 (L MLG)

PSEU	SNSR, S1016
D10984	SPLICE
pin 15 (BLUE)	SP334
pin 5 (RED)	SP332

IND SYSTEM 2 (R MLG)

PSEU	SNSR, S1017
D10984	SPLICE
pin 46 (BLUE)	SP354
pin 45 (RED)	SP352

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the applicable connector D10982 (D10984) to the PSEU.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then cut the wires at the Sensor Splices and measure the Resistance of the sensors again between the applicable Sensor Splice and Ground.
 - a) If the Sensor Resistance values are not in the limits, then replace the applicable MLG Uplock Sensor. These are the tasks:
 - Main Landing Gear Uplock Sensor Removal, AMM TASK 32-61-21-020-801
 - Main Landing Gear Uplock Sensor Installation, AMM TASK 32-61-21-400-801
 - <1> Do the Repair Confirmation at the end of this task.
- (3) If the Sensor Status is TGT FAR, then do these steps:
- (a) Do the Main Landing Gear Uplock Sensor Clearance Measurement (Airplane on Jacks), AMM TASK 32-61-21-400-802.

EFFECTIVITY
SIA ALL

32-61 TASK 802

D633A103-SIA

Page 212
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 1) If the Sensor Clearance is not correct, then adjust the clearance. This is the task:
Main Landing Gear Uplock Sensor Clearance Adjustment, AMM TASK 32-61-21-820-801.
 - a) Do the Repair Confirmation at the end of this task.
- 2) If the Sensor Clearance is correct, then replace the applicable MLG Uplock Sensor. These are the tasks:
 - Main Landing Gear Uplock Sensor Removal, AMM TASK 32-61-21-020-801
 - Main Landing Gear Uplock Sensor Installation, AMM TASK 32-61-21-400-801
 - a) Do the Repair Confirmation at the end of this task.
- (4) If the Sensor Status is FAILSAFE, then do these steps:
 - (a) Disconnect the Sensor Leads from the Airplane Wiring.
 - (b) Temporarily install the leads from a replacement Sensor to the Airplane Wiring.
 - (c) Make sure that the sensor is away from all metal objects.
 - (d) Do the steps to show the Sensor Status again.
 - 1) If the Sensor Status is TGT FAR, then the installed sensor has a problem. Replace the applicable MLG Uplock Sensor. These are the tasks:
 - Main Landing Gear Uplock Sensor Removal, AMM TASK 32-61-21-020-801
 - Main Landing Gear Uplock Sensor Installation, AMM TASK 32-61-21-400-801
 - a) Do the Repair Confirmation at the end of this task.
 - 2) If the Sensor Status is FAILSAFE, then do these steps and continue at the wiring check steps that follow:
 - a) Remove the replacement Sensor Leads from the Airplane Wiring.
 - b) Re-install the leads from the installed sensor.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (e) For Maintenance Message 32-61002, 32-61006, 32-61102, or 32-61106, disconnect connector D10982 from the PSEU.
- (f) For Maintenance Message 32-61008, 32-61012, 32-61108, or 32-61112, disconnect connector D10984 from the PSEU.

SIA ALL

- (g) Examine the wiring between the PSEU and the applicable MLG Uplock Sensor as follows (WDM 32-64-11, WDM 32-64-12):

IND SYSTEM 1 (L MLG)

PSEU	SNSR, S72
D10982	SPLICE
pin 57 (BLUE)	SP344
pin 58 (RED)	SP342

IND SYSTEM 1 (R MLG)

PSEU	SNSR, S74
D10982	SPLICE
pin 46 (BLUE)	SP364
pin 45 (RED)	SP362

EFFECTIVITY
SIA ALL

32-61 TASK 802

D633A103-SIA

Page 213
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

IND SYSTEM 2 (L MLG)

PSEU	SNSR, S1016
D10984	SPLICE
pin 15 (BLUE)	SP334
pin 5 (RED)	SP332

IND SYSTEM 2 (R MLG)

PSEU	SNSR, S1017
D10984	SPLICE
pin 46 (BLUE)	SP354
pin 45 (RED)	SP352

- 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the applicable connector D10982 (D10984) to the PSEU.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then continue.
- (5) Replace the PSEU. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this task: Main Landing Gear Up-and-Locked Sensor Operational Test, AMM TASK 32-61-21-710-801
- (2) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.
 - (b) If the maintenance message shows on the EXISTING FAULTS Display, continue the Fault Isolation Procedure at the subsequent step.

———— **END OF TASK** ————

803. Nose Landing Gear Down Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-61004 NOSE DN A FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 32-61104 NOSE DN A FAULT

SIA ALL

- (c) 32-61009 NOSE DN B FAULT

EFFECTIVITY
SIA ALL

32-61 TASKS 802-803

D633A103-SIA

Page 214
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (d) 32-61109 NOSE DN B FAULT

SIA ALL

- (e) 32-61013 NOSE DN DISAGREE

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show that a nose landing gear down position sensor disagrees with the main landing gear locked sensors.
 - (a) Maintenance message 32-61004 will be set if the nose down A position sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and nose down B sensor indicates up.
 - (b) Maintenance message 32-61104 will be set if the nose down A position sensor indicates up with the other main gear sensors indicating that both main gear are down and locked and lever down, lever up and nose down B sensor indicates down.
 - (c) Maintenance message 32-61009 will be set if the nose down B position sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and nose down A sensor indicates up.
 - (d) Maintenance message 32-61109 will be set if the nose down B position sensor indicates up with the other main gear sensors indicating that both main gear are down and locked and lever down, lever up and nose down A sensor indicates down.
 - (e) Maintenance message 32-61013 will be set if the nose down A position sensor disagrees with the nose down B sensor.

SIA ALL

B. Possible Causes

- (1) Nose landing gear down position sensor, S0845 (S0853)
- (2) PSEU, M02061
- (3) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (32-61 TASK SUPPORT Figure 304)
- (2) SSM 32-61-11
- (3) SSM 32-61-12
- (4) WDM 32-64-11
- (5) WDM 32-64-12

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-61 TASK 803

D633A103-SIA

Page 215
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (b) If there is no obvious damage, then continue.
- (2) Show the status of the applicable landing gear position sensor.
 - (a) Push the ON/OFF switch to turn on the PSEU BITE.
 - (b) Push the down switch until OTHER FUNCTNS? shows.
 - (c) Push the YES switch to select OTHER FUNCTNS?.
 - (d) Push the down switch until I/O MONITOR? shows.
 - (e) Push the YES switch to select I/O MONITOR.
 - (f) Push the down switch until SENSORS? shows.
 - (g) Push the YES switch to select SENSORS.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (h) Push the down switch until the sensor number shows.
 - 1) For maintenance message number 32-61004, 32-61104 or 32-61013, show sensor S0845
 - 2) For maintenance message number 32-61009, 32-61109 or 32-61013, show sensor S0853

SIA ALL

- (i) Push the YES switch to show the sensor status.
- (j) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a de-actuator on the face of the sensor face.
NOTE: The de-actuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent fault.
NOTE: You may measure the clearance between the sensor and target. This can help you determine if the sensor clearance is incorrect. To do this, you can do this task: Nose Landing Gear Down Position Sensor Clearance Measurement, AMM TASK 32-61-51-220-801.
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (k) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
- (2) If the sensor status is TGT NEAR, with a de-actuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-61004, 32-61104 or 32-61013, disconnect connector D10982 from the PSEU.
- 2) For maintenance message number 32-61009, 32-61109 or 32-61013, disconnect connector D10984 from the PSEU.

SIA ALL

EFFECTIVITY
SIA ALL

32-61 TASK 803

D633A103-SIA

Page 216
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 3) Do these steps to measure the resistance between the pins of the PSEU connector D10982 (D10984) for the blue terminal and the structure ground (yellow) (Table 202):
- Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue (white/blue) and yellow (white/yellow) sensor leads.
 - Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - Push the FREQ button until 120 Hz is displayed in upper right corner.
 - Push and hold the L/C/R button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
 - Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
 - The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 Ω .
NOTE: The line and interface resistance can be considered and can add up to 2 Ω .
 - The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ω .
NOTE: On-wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC).
- 4) Do these steps to measure the resistance between the pins of the PSEU connector D10982 (D10984) for the red terminal and the structure ground (yellow) (Table 202):
- Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red (white/red) and yellow (white/yellow) sensor leads.
 - Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - Push the FREQ button until 120 Hz is displayed in upper right corner.
 - Push and hold the L/C/R button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- e) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- f) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 Ω .
NOTE: The line and interface resistance can be considered and can add up to 2 Ω .
- g) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 Ω .
NOTE: On-wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC).
- 5) Re-connect connector D10982 (D10984) to the PSEU.
- 6) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 7) These are the connections on the sensor and the PSEU to check the resistances at:

Table 202 NLG DOWN SENSOR RESISTANCES

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S0845	YELLOW	GROUND
		D10982
	BLUE	pin 19
S0853	RED	D10982
		pin 20
	YELLOW	GROUND
		D10984
	BLUE	pin 19
		D10984
	RED	pin 20

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual (SWPM)).
- 1) Make sure that the resistance is $\leq 0.001 \Omega$.

EFFECTIVITY
SIA ALL

D633A103-SIA

32-61 TASK 803

Page 218
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- 2) If the resistance is $\geq 0.001 \Omega$, then inspect and repair the ground between the sensor connection and structure ground.
- 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
 - Nose Landing Gear Down Position Sensor Removal, AMM TASK 32-61-51-020-801
 - Nose Landing Gear Down Position Sensor Installation, AMM TASK 32-61-51-400-8021) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a de-actuator installed on the sensor, then do these steps:
 - (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Nose Landing Gear Down Position Sensor Clearance Measurement, AMM TASK 32-61-51-220-801.
 - (b) If the sensor clearance is not correct, then do these steps:
 - 1) Adjust the sensor clearance. To adjust the clearance, do this task: Nose Landing Gear Down Position Sensor Clearance Adjustment, AMM TASK 32-61-51-400-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Nose Landing Gear Down Position Sensor Removal, AMM TASK 32-61-51-020-801
 - Nose Landing Gear Down Position Sensor Installation, AMM TASK 32-61-51-400-802
 - 2) Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is FAILSAFE, then do these steps:
 - (a) Disconnect the sensor leads from the airplane wiring.
 - (b) Temporarily install the leads from a replacement sensor to the airplane wiring.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - (e) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Nose Landing Gear Down Position Sensor Removal, AMM TASK 32-61-51-020-801
 - Nose Landing Gear Down Position Sensor Installation, AMM TASK 32-61-51-400-802
 - 2) Do the Repair Confirmation at the end of this task.
 - (f) If the sensor status is FAILSAFE, then do these steps and continue:
 - 1) Remove the replacement sensor leads from the junction box connector.
 - 2) Re-install the leads from the current down position sensor.

EFFECTIVITY
SIA ALL

32-61 TASK 803

D633A103-SIA

Page 219
Oct 15/2023



**737-600/700/800/900
FAULT ISOLATION MANUAL**

(5) Do this check of the wiring:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message number 32-61004, 32-61104 or 32-61013, disconnect connector D10982 from the PSEU.
- (b) For maintenance message number 32-61009, 32-61109 or 32-61013, disconnect connector D10984 from the PSEU.

SIA ALL

- (c) Do a wiring check between these connections on the sensor and the PSEU (Table 202):
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D10982 (D10984) to the PSEU.
 - 3) Do the Repair Confirmation at the end of this task.
 - (e) If you do not find a problem with the wiring, then continue.
- (6) Do these steps to replace the PSEU:
- (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the problem.

G. Repair Confirmation

- (1) Do this test of the applicable sensor:
 - (a) Put a de-actuator on the face of the sensor.
 - (b) Remove the de-actuator from the face of the sensor.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE Display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (d) If you do not find the maintenance message, then you corrected the problem.
 - (e) If the sensor test is not satisfactory, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

804. Nose Landing Gear Lock Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-61003 NOSE LKD A FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 32-61103 NOSE LKD A FAULT

SIA ALL

- (c) 32-61010 NOSE LKD B FAULT

EFFECTIVITY
SIA ALL

32-61 TASKS 803-804

D633A103-SIA

Page 220
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (d) 32-61110 NOSE LKD B FAULT

SIA ALL

- (2) For PSEU Part Number (P/N)s 285A1600 -5 and -6:
- (a) The maintenance message 32-61003 will be set if the nose gear lock A indicates locked while both main gears are neither down and locked nor up and locked, LEVER DOWN is true and LEVER UP is false.
 - (b) The maintenance message 32-61103 will be set if the nose gear lock A indicates not locked both main gears are down and locked, LEVER DOWN and nose locked B sensor is true, and LEVER UP is false.
 - (c) The maintenance message 32-61010 will be set if the nose gear lock B indicates locked while both main gears are neither down and locked nor up and locked, LEVER DOWN is true and LEVER UP is false.
 - (d) The maintenance message 32-61110 will be set if the nose gear lock B indicates not locked both main gears are down and locked, LEVER DOWN and nose locked A sensor are true, and LEVER UP is false.

B. Possible Causes

- (1) Nose Landing Gear (NLG) Lock Sensor, S846 (S854)
- (2) PSEU, M2061
- (3) Wiring

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (32-61 TASK SUPPORT Figure 305)
- (2) SSM 32-61-11
- (3) SSM 32-61-12
- (4) WDM 32-64-11
- (5) WDM 32-64-12

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Show the status of the applicable landing gear position sensor.
 - (a) Push the ON/OFF Switch to turn on the PSEU BITE.
 - (b) Push the Down Switch until OTHER FUNCTNS? shows.
 - (c) Push the YES Switch to select OTHER FUNCTNS?.
 - (d) Push the Down Switch until I/O MONITOR? shows.

EFFECTIVITY
SIA ALL

32-61 TASK 804

D633A103-SIA

Page 221
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- (e) Push the YES Switch to select I/O MONITOR.
- (f) Push the Down Switch until SENSORS? shows.
- (g) Push the YES Switch to select SENSORS.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (h) Push the Down Switch until the sensor number shows.
 - 1) For maintenance message number 32-61003 and 32-61103, show sensor S0846
 - 2) For maintenance message number 32-61010 and 32-61110, show sensor S0854

SIA ALL

- (i) Push the YES Switch to show the sensor status.
- (j) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a de-actuator on the face of the sensor face.
NOTE: The de-actuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent problem.
NOTE: You may measure the clearance between the sensor and target. This can help you determine if the sensor clearance is incorrect. This is the task: Nose Landing Gear Lock Sensor Clearance Measurement, AMM TASK 32-61-41-220-801.
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (k) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
- (2) If the sensor status is TGT NEAR, with a de-actuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-61003 and 32-61103, disconnect connector D10982 from the PSEU.
- 2) For maintenance message number 32-61010 and 32-61110, disconnect connector D10984 from the PSEU.

SIA ALL

- 3) Do these steps to measure the resistance between the pins of the PSEU connector D10982 (D10984) for the blue terminal and the Structure Ground (yellow) (Table 203)
 - a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue (white/blue) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R Mode Switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the FREQ Button until 120 Hz is displayed in upper right corner.

EFFECTIVITY
SIA ALL

32-61 TASK 804

D633A103-SIA

Page 222
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- d) Push and hold the L/C/R Button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.

NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.

- e) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

- f) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 Ω .

NOTE: The line and interface resistance can be considered and can add up to 2 Ω .

- g) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ω .

NOTE: On-wing resistance readings deviating from the shown limits should consider the increased/lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC).

- 4) Do these steps to measure the resistance between the pins of the PSEU connector D10982 (D10984) for the red terminal and the Structure Ground (yellow) (Table 203).

- a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red (white/red) and yellow (white/yellow) sensor leads.
- b) Push the L/C/R Mode Switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
- c) Push the FREQ Button until 120 Hz is displayed in upper right corner.
- d) Push and hold the L/C/R Button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.

NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.

- e) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

- f) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 Ω .

NOTE: The line and interface resistance can be considered and can add up to 2 Ω .



737-600/700/800/900 FAULT ISOLATION MANUAL

- g) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 Ω .

NOTE: On-wing resistance readings deviating from the shown limits should consider the increased/lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 Ω/degC . The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 Ω/degC from standard temperature (25degC).

- 5) Re-connect connector D10982 (D10984) to the PSEU.
- 6) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 7) These are the connections on the sensor and the PSEU to check the resistances at:

Table 203 NLG LOCK SENSOR RESISTANCES

SENSOR	SENSOR LEAD		PSEU CONNECTOR
S846	YELLOW	-----	GROUND D10982
	BLUE	-----	pin 2 D10982
	RED	-----	pin 9
S854	YELLOW	-----	GROUND D10984
	BLUE	-----	pin 2 D10984
	RED	-----	pin 9

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the Airplane Structure (SWPM 20-20-00).
- 1) Make sure that the resistance is $\leq 0.001 \Omega$.
 - 2) If the resistance is $\geq 0.001 \Omega$, then inspect and repair the ground between the sensor connection and Structure Ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground, then replace the sensor. These are the tasks:
- Nose Landing Gear Lock Sensor Removal, AMM TASK 32-61-41-020-801

EFFECTIVITY
SIA ALL

32-61 TASK 804

D633A103-SIA

Page 224
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Nose Landing Gear Lock Sensor Installation, AMM TASK 32-61-41-400-801
- 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a de-actuator installed on the sensor, then do this step:
 - (a) Measure the clearance between the sensor and target. This is the task: Nose Landing Gear Lock Sensor Clearance Measurement, AMM TASK 32-61-41-220-801.
 - 1) If the sensor clearance is not correct, then do these steps:
 - a) Adjust the sensor clearance. This is the task: Nose Landing Gear Lock Sensor Clearance Adjustment, AMM TASK 32-61-41-400-802.
 - b) Do the Repair Confirmation at the end of this task.
 - 2) If the sensor clearance is correct, then do these steps:
 - a) Replace the sensor. These are the tasks:
 - Nose Landing Gear Lock Sensor Removal, AMM TASK 32-61-41-020-801
 - Nose Landing Gear Lock Sensor Installation, AMM TASK 32-61-41-400-801
 - b) Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is TGT FAR without a de-actuator installed, then do this step:
 - (a) Measure the clearance between the sensor and target. This is the task: Nose Landing Gear Lock Sensor Clearance Measurement, AMM TASK 32-61-41-220-801.
 - 1) If the sensor clearance is not correct, then do these steps:
 - a) Adjust the sensor clearance. This is the task: Nose Landing Gear Lock Sensor Clearance Adjustment, AMM TASK 32-61-41-400-802.
 - b) Do the Repair Confirmation at the end of this task.
 - 2) If the sensor clearance is correct, then do these steps:
 - a) Replace the sensor. These are the tasks:
 - Nose Landing Gear Lock Sensor Removal, AMM TASK 32-61-41-020-801
 - Nose Landing Gear Lock Sensor Installation, AMM TASK 32-61-41-400-801
 - b) Do the Repair Confirmation at the end of this task.
- (5) If the sensor status is FAILSAFE, then do these steps:
 - (a) Disconnect the sensor leads from the airplane wiring.
 - (b) Temporarily install the leads from a replacement sensor to the airplane wiring.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - 1) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - a) Replace the sensor. These are the tasks:
 - Nose Landing Gear Lock Sensor Removal, AMM TASK 32-61-41-020-801
 - Nose Landing Gear Lock Sensor Installation, AMM TASK 32-61-41-400-801
 - b) Do the Repair Confirmation at the end of this task.
 - 2) If the sensor status is FAILSAFE, then do these steps and continue:

EFFECTIVITY
SIA ALL

32-61 TASK 804

D633A103-SIA

Page 225
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- a) Remove the replacement sensor leads from the junction box connector.
 - b) Re-install the leads from the current gear lock sensor.
- (6) Do this check of the wiring:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message number 32-61003 and 32-61103, disconnect connector D10982 from the PSEU.
- (b) For maintenance message number 32-61010 and 32-61110, disconnect connector D10984 from the PSEU.

SIA ALL

- (c) Do a wiring check between these connections on the sensor and the PSEU (Table 203).
 - 1) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect connector D10982 (D10984) to the PSEU.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If you do not find a problem with the wiring, then continue.
- (7) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the post installation test in the PSEU installation procedure.
 - 1) If the test operates correctly, then you corrected the problem.

G. Repair Confirmation

- (1) Do this test of the applicable sensor:
 - (a) Put a de-actuator on the face of the sensor.
 - (b) Remove the de-actuator from the face of the sensor.
 - (c) Do the EXISTING FAULTS Test on the PSEU BITE Display. This is the task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the problem.
 - 2) If the sensor test is not satisfactory, then continue the Fault Isolation at the subsequent step.

————— **END OF TASK** —————

805. Altitude Less Than 200 (Left) Fault - Fault Isolation

A. Description

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (1) This task is for these maintenance messages:
 - (a) 32-62005 ALT L LT 200 FLT
 - (b) 32-62105 ALT L LT 200 FLT
 - (c) 32-62205 ALT L LT 200 FLT

SIA ALL

EFFECTIVITY
SIA ALL

32-61 TASKS 804-805

D633A103-SIA

Page 226
Oct 15/2023



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(2) These maintenance messages show when one of these conditions occur:

SIA ALL; AIRPLANES WITH PSEU -6

- (a) Maintenance message 32-62005 will be set if the left signal on the flight control computer shows that the airplane altitude is more than 200 feet with the airplane landing or on the ground.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) Maintenance message 32-62105 will be set if the left signal on the flight control computer shows that the airplane altitude is less than 200 feet with the airplane in the air for more than two minutes.
- (c) Maintenance message 32-62205 will be set during the LRU replacement test if the left signal on the flight control computer shows that the airplane altitude is more than 200 feet and the right signal on the flight control computer shows that the airplane altitude is less than 200 feet.

SIA ALL

B. Possible Causes

- (1) Wiring problem
- (2) Flight control computer (FCC) A, M1875
- (3) Radio Altimeter Transmitter/Receiver, M1735 (1) or M1736 (2)
- (4) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do a test to determine if there are FCC faults. Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.
 - (a) If this fault exists: FCC-A (J1A-G03), then do the Fault Isolation Procedure below.
 - (b) If there is a radio altimeter output problem or other FCC problem, then do the fault isolation referenced in the BITE procedure.
 - (c) If there are no FCC faults, then continue.
- (2) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the fault isolation procedure below.

EFFECTIVITY
SIA ALL

32-61 TASK 805

D633A103-SIA

Page 227
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

F. Fault Isolation Procedure

- (1) Do this test of the PSEU and wiring:
 - (a) Remove the flight control computer A. To remove the computer, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
 - (b) Examine the connectors and sockets for damage and unwanted material.
 - (c) Show the input status for connector D10982 pin 43 on the PSEU BITE display.
NOTE: If you need instructions on how to show the input status, see this task: (32-09 TASK 821).
 - (d) If the status of pin 43 is GND, then do this test of the PSEU:
 - 1) Remove the connector D10982 from the PSEU.
 - 2) Examine the connector and socket for damage and unwanted material.
 - 3) Show the input status for connector D10982 pin 43 again.
 - 4) If the status of the pin is GND, then do these steps:
 - a) Replace the PSEU. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation Below.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Repair the wiring between the PSEU and FCC.
 - b) Do the Repair Confirmation Below.
 - (e) If the status of pin 43 is NO GND, then continue.
 - (f) Ground pin G3 on the FCC connector D10135A with a jumper wire.
 - (g) If the status of pin 43 is NO GND, then do this test of the PSEU:
 - 1) Remove the connector D10982 from the PSEU.
 - 2) Examine the connector and socket for damage and unwanted material.
 - 3) Ground pin 43 on the PSEU connector D10982 with a jumper wire.
 - 4) Show the input status for connector D10982 pin 43 again.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation Below.
 - 6) If the status of the pin is GND, then do these steps:
 - a) Repair the wiring between the PSEU and FCC.
 - b) Do the Repair Confirmation Below.
 - (h) If the status of pin 43 is GND, then continue.
- (2) Do this test of the FCC:

EFFECTIVITY
SIA ALL

D633A103-SIA

32-61 TASK 805

Page 228
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) Do an exchange test of the FCC. To do this, do this task: FCC Exchange Check, 22-11 TASK 820.
- (b) Do the Initial Evaluation again.
- (c) If the fault is now active for FCC-B, then do these steps:
 - 1) Install a new flight control computer. To install the computer, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - 2) Do the Repair Confirmation below.
- (d) If the fault is still active for FCC-A, then do these steps:
 - 1) Examine the FCC connector D10135A pin G3 and socket for damage or a pushed back pin.
 - 2) Repair any damage that you find
- (e) If the fault is no longer active, then you had an intermittent fault.

G. Repair Confirmation

- (1) Do this test to see if the fault is still active:
 - (a) If it is necessary, re-connect the connector on the PSEU.
 - (b) If it is necessary, re-install the FCC. To install the FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - (c) Simulate an altitude greater than 200 feet. Do this task: Radio Altitude Simulation Test, AMM TASK 34-33-00-700-801.
 - (d) Return the airplane altitude to it's usual condition.
 - (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.
 - 2) If you find the maintenance message, then continue the fault isolation procedure.

————— **END OF TASK** —————

806. Altitude Less Than 200 (Right) Fault - Fault Isolation

A. Description

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (1) This task is for these maintenance messages:

- (a) 32-62006 ALT R LT 200 FLT
- (b) 32-62106 ALT R LT 200 FLT
- (c) 32-62206 ALT R LT 200 FLT

SIA ALL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show when one of these conditions occur:

SIA ALL; AIRPLANES WITH PSEU -6

- (a) Maintenance message 32-62006 will be set if the right signal on the flight control computer shows that the airplane altitude is more than 200 feet with the airplane landing or on the ground.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

EFFECTIVITY
SIA ALL

32-61 TASKS 805-806

D633A103-SIA

Page 229
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- (b) Maintenance message 32-62106 will be set if the right signal on the flight control computer shows that the airplane altitude is less than 200 feet with the airplane in the air for more than two minutes.
- (c) Maintenance message 32-62206 will be set during the LRU replacement test if the right signal on the flight control computer shows that the airplane altitude is more than 200 feet and the left signal on the flight control computer shows that the airplane altitude is less than 200 feet.

SIA ALL

B. Possible Causes

- (1) Wiring problem
- (2) Flight control computer (FCC) B, M1876
- (3) Radio Altimeter Transmitter/Receiver, M1735 (1) or M1736 (2)
- (4) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do a test to determine if there are FCC faults. Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.
 - (a) If this fault exists: FCC-B (J1A-G03), then do the Fault Isolation Procedure below.
 - (b) If there is a radio altimeter output problem or other FCC problem, then do the fault isolation referenced in the BITE procedure.
 - (c) If there are no FCC faults, then continue.
- (2) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the PSEU and wiring:
 - (a) Remove the flight control computer (FCC) B. To remove the computer, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
 - (b) Examine the connectors and sockets for damage and unwanted material.
 - (c) Show the input status for connector D10984 pin 43 on the PSEU BITE display.

NOTE: If you need instructions on how to show the input status, see this task: (32-09 TASK 821).

EFFECTIVITY
SIA ALL

32-61 TASK 806

D633A103-SIA

Page 230
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (d) If the status of pin 43 is GND, then do this test of the PSEU:
 - 1) Remove the connector D10984 from the PSEU.
 - 2) Examine the connector and socket for damage and unwanted material.
 - 3) Show the input status for connector D10984 pin 43 again.
 - 4) If the status of the pin is GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation Below.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Repair the wiring between the PSEU and FCC.
 - b) Do the Repair Confirmation Below.
- (e) If the status of pin 43 is NO GND, then continue.
- (f) Ground pin G3 on the FCC connector D10137A with a jumper wire.
- (g) If the status of pin 43 is NO GND, then do this test of the PSEU:
 - 1) Remove the connector D10984 from the PSEU.
 - 2) Examine the connector and socket for damage and unwanted material.
 - 3) Ground pin 43 on the PSEU connector D10984 with a jumper wire.
 - 4) Show the input status for connector D10984 pin 43 again.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation Below.
 - 6) If the status of the pin is GND, then do these steps:
 - a) Repair the wiring between the PSEU and FCC.
 - b) Do the Repair Confirmation Below.
- (h) If the status of pin 43 is GND, then continue.
- (2) Do this test of the FCC:
 - (a) Do an exchange test of the FCC. Do this task: FCC Exchange Check, 22-11 TASK 820.
 - (b) Do the Initial Evaluation again.
 - (c) If the fault is now active for FCC-A, then do these steps:
 - 1) Install a new flight control computer. To install the computer, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - 2) Do the Repair Confirmation below.
 - (d) If the fault is still active for FCC-B, then do these steps:

EFFECTIVITY
SIA ALL

D633A103-SIA

32-61 TASK 806

Page 231
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) Examine the FCC connector D10137A pin G3 and socket for damage or a pushed back pin.
- 2) Repair any damage that you find
- (e) If the fault is no longer active, then you had an intermittent fault.

G. Repair Confirmation

- (1) Do this test to see if the fault is still active:
 - (a) If it is necessary, re-connect the connector on the PSEU.
 - (b) If it is necessary, re-install the FCC. To install the FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - (c) Simulate an altitude greater than 200 feet. Do this task: Radio Altitude Simulation Test, AMM TASK 34-33-00-700-801.
 - (d) Return the airplane altitude to its usual condition.
 - (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.
 - 2) If you find the maintenance message, then continue the fault isolation procedure.

————— **END OF TASK** —————

809. Landing Gear Lever Position Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-62007 LEVER DN FAULT
 - (b) 32-62008 LEVER UP FAULT
- SIA ALL; AIRPLANES WITH PSEU -5 OR -6**
 - (c) 32-62107 LEVER DN FAULT
 - (d) 32-62108 LEVER UP FAULT
- (2) These maintenance messages show a fault with the landing gear lever position sensors.
 - (a) Maintenance message number 32-62007 will be set if the lever down sensor indicate that the lever is neither down nor up and the main landing gear is down and locked.
 - (b) Maintenance message number 32-62107 will be set and latch in the PSEU if the lever down sensor shows that the lever is down and gear is up and locked.
 - (c) Maintenance message number 32-62008 will be set if the gear lever switch does not agree with the position of the main landing gear. This fault will latch in the PSEU if the lever up switch does not show that the lever is in the up position and the main landing gear is in the up and locked condition.
 - (d) Maintenance message number 32-62108 will be set if the gear lever switch does not agree with the position of the main landing gear. This fault will be set if the gear lever switch shows that the lever is both in the up and down position when the main landing gear is in the down and locked condition.

SIA ALL

EFFECTIVITY
SIA ALL

32-61 TASKS 806-809

D633A103-SIA

Page 232
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

B. Possible Causes

- (1) Landing Gear Control Lever Module, M1952
- (2) Wiring problem
- (3) Proximity Switch Electronics Unit (PSEU), M02061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI

D. Related Data

- (1) SSM 32-30-00
- (2) SSM 32-61-11
- (3) WDM 32-64-11

E. Initial Evaluation

- (1) Do this test with the Landing Gear Control Lever Switch in the DOWN position:
 - (a) Put the Landing Gear Control Lever in the DOWN position.
 - (b) Show the input status for these Landing Gear Control Lever Switch inputs on the PSEU BITE display:

NOTE: If you need instructions on how to show the input status, see this task: (32-09 TASK 821).

 - 1) D10982 pin 1
 - 2) D10982 pin 6
 - (c) If the status of pin 1 is NO GND, then do the Fault Isolation Procedure below.
 - (d) If the status of pin 6 is GND, then do the Fault Isolation Procedure below.
 - (e) If the status of pin 1 is GND and the status of pin 6 is NO GND, then continue.
- (2) Do this test with the Landing Gear Control Lever Switch in the UP position:



WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the nose and main landing gear. This is the task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) Put the Landing Gear Control Lever in the UP position.
- (c) Show the input status for these Landing Gear Control Lever Switch inputs on the PSEU display:
 - 1) D10982 pin 1
 - 2) D10982 pin 6
- (d) If the status of pin 1 is GND, then do the Fault Isolation Procedure below.
- (e) If the status of pin 6 is NO GND, then do the Fault Isolation Procedure below.

EFFECTIVITY
SIA ALL

32-61 TASK 809

D633A103-SIA

Page 233
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (f) If the status of pin 1 is NO GND and the status of pin 6 is GND, then there was an intermittent fault.

F. Fault Isolation Procedure



MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the nose and main landing gear. This is the task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) If the initial evaluation failed with the lever in the DOWN position, then do this test:
 - (a) Disconnect connector D11990 from the Landing Gear Control Lever Module.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Move the Landing Gear Control Lever to the DOWN position.
 - (d) Use a multimeter, STD-1231 to measure for continuity between these pins:

P2-3 Landing Gear Panel

Landing Gear Control Lever Module, M1952 D11990	Landing Gear Control Lever Module, M1952 D11990
pin 1	pin 2

- 1) If there is no continuity, then do these steps.
 - a) Replace the Landing Gear Control Lever Module. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - b) Do the Repair Confirmation at the end of this task.
<1> If the repair confirmation is not satisfactory, then continue.
 - 2) If there is continuity, then continue.
- (3) If the initial evaluation failed with the lever in the UP position, then do this test:
- (a) Remove the connector D11990 from the Landing Gear Control Lever Module.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Move the Landing Gear Control Lever to the UP or OFF position.
 - (d) Use a multimeter, STD-1231 to measure for continuity between pins 1 and 3 on the Landing Gear Control Lever Module.

P2-3 Landing Gear Panel

Landing Gear Control Lever Module, M1952 D11990	Landing Gear Control Lever Module, M1952 D11990
pin 1	pin 3

EFFECTIVITY
SIA ALL

32-61 TASK 809



737-600/700/800/900 FAULT ISOLATION MANUAL

- 1) If there is no continuity, then do these steps.
 - a) Replace the Landing Gear Control Lever Module. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - b) Do the Repair Confirmation at the end of this task.
<1> If the repair confirmation is not satisfactory, then continue.
 - 2) If there is continuity, then continue.
- (4) Do this check of the wiring:
- (a) Use a multimeter, STD-1231 to measure for continuity between pin 1 on the connector D11990 and structure ground.

P2-3 Landing Gear Panel

Landing Gear Control Lever Module, M1952 D11990	Landing Gear Control Lever Module, M1952 D11990
pin 1	Ground

- (b) If there is no continuity, then do these steps:
 - 1) Repair the wiring between the connector and structure ground.
 - 2) Re-connect connector D11990 to the Landing Gear Control Lever Module.
 - 3) Do the Repair Confirmation at the end of this task.
 - (c) If there is continuity, then continue.
- (5) Do this test of the Proximity Sensor Electronics Unit (PSEU):
- (a) Disconnect connector D10982 from the PSEU.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Show the input status for these Landing Gear Control Lever Switch inputs on the PSEU display:
 - 1) D10982 pin 1
 - 2) D10982 pin 6
 - (d) If the status of either pin is GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
 - (e) If the status of both pins is NO GND, then continue.
 - (f) Ground pins 1 and 6 on the PSEU with jumpers connected to structure ground.

EFFECTIVITY
SIA ALL

32-61 TASK 809

D633A103-SIA

Page 235
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (g) Show the input status for these Landing Gear Control Lever Switch inputs on the PSEU display:
 - 1) D10982 pin 1
 - 2) D10982 pin 6
- (h) If the status of either pin is NO GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
- (i) If the status of both pins is GND, then continue.
- (6) Repair the wiring between the PSEU and Landing Gear Control Lever Module.
 - (a) Re-connect the connectors on the PSEU and Landing Gear Control Lever Module.
 - (b) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the PSEU:
 - (a) Put the Landing Gear Control Lever in the UP position.
 - (b) Put the Landing Gear Control Lever in the DOWN position.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE. This is the task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.

————— **END OF TASK** —————

810. Landing Gear Position Light Fault (System 1) - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66001 L GRN LT 1 FAULT
 - (b) 32-66002 NOSE GRN LT 1 FLT
 - (c) 32-66003 R GRN LT 1 FLT
 - (d) 32-66004 L RED LT 1 FLT
 - (e) 32-66005 NOSE RED LT 1 FLT
 - (f) 32-66006 R RED LT 1 FLT
- (2) These maintenance messages show a fault with the landing gear indicator lights on the landing gear module. Each light has a corresponding fault message.

B. Possible Causes

- (1) Landing gear module, P2-3
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

EFFECTIVITY
SIA ALL

32-61 TASKS 809-810

D633A103-SIA

Page 236
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5

D. Related Data

- (1) (SSM 32-61-11)
- (2) (SSM 33-18-24)
- (3) (WDM 32-64-11)
- (4) (WDM 33-18-24)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the switch light:
 - (a) For maintenance message 32-66001, push the left gear green light on the landing gear module.
 - (b) For maintenance message 32-66002, push the nose gear green light on the landing gear module.
 - (c) For maintenance message 32-66003, push the right gear green light on the landing gear module.
 - (d) For maintenance message 32-66004, push the left gear red light on the landing gear module.
 - (e) For maintenance message 32-66005, push the nose gear red light on the landing gear module.
 - (f) For maintenance message 32-66006, push the right gear red light on the landing gear module.
- (2) If the light does not come on, then do these steps:
 - (a) Replace the indicator light.
 - (b) Push the indicator again.
 - (c) If the light comes on, then you corrected the fault.
 - (d) If the light does not come on, then do these steps:
 - 1) Remove the connector D11732 from the landing gear module. Do the applicable steps in (AMM TASK 32-31-11-020-801) to remove the connector.
 - 2) For maintenance messages 32-66001, 32-66002, and 32-66003, measure the voltage between pin 21 on the connector and ground.
 - 3) For maintenance messages 32-66004, 32-66005, and 32-66006, measure the voltage between pin 26 on the connector and ground.

EFFECTIVITY
SIA ALL

32-61 TASK 810

D633A103-SIA

Page 237
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 4) If you measure 16 or 28 VDC at the pin then do these steps:
 - a) Replace the landing gear module. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - b) Push the master dim and test switch.
 - c) If the light comes on, then you corrected the fault.
- 5) If you do not measure 16 or 28 VDC at the pin, then do a wiring check between these pins on connector D11732 and the applicable circuit breaker:

Table 204

MAINTENANCE MESSAGE	CIRCUIT BREAKER	P2-3 CONNECTOR
32-66001	C317	
32-66002	P6-3 F11	D11732
32-66003	term 1	-- pin 21
32-66004	C314	
32-66005	P6-3 E12	D11732
32-66006	term 1	-- pin 26

- 6) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the landing gear module.
 - c) Push the master dim and test switch.
 - d) If the light comes on, then you corrected the fault.
- (3) If the light comes on, then do these steps:
 - (a) Remove the connector D10982 from the PSEU.
 - (b) Measure the voltage between structure ground and the applicable pin:

Table 205

MAINTENANCE MESSAGE	PSEU D10982
32-66001	pin 34
32-66002	pin 36
32-66003	pin 26
32-66004	pin 59
32-66005	pin 8
32-66006	pin 25

- (c) If you measure 16 or 28 VDC at the pin, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:

EFFECTIVITY
SIA ALL

32-61 TASK 810

D633A103-SIA

Page 238
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
 - (d) If you do not measure 16 or 28 VDC at the pin, then continue.
 - (4) Do this wiring test between the PSEU and landing gear module:
 - (a) Remove the connector D11732 from the landing gear module. Do the applicable steps in (AMM TASK 32-31-11-020-801) to remove the connector.
 - (b) Do a check of the wiring between these pins:

Table 206

MAINTENANCE MESSAGE	PSEU CONNECTOR D10982		P2-3 CONNECTOR D11732
32-66001	pin 34	--	pin 23
32-66002	pin 36	--	pin 9
32-66003	pin 26	--	pin 22
32-66004	pin 59	--	pin 19
32-66005	pin 8	--	pin 30
32-66006	pin 25	--	pin 31

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the landing gear module.
 - 3) Re-connect the connector on the PSEU.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.

————— **END OF TASK** —————

811. Landing Gear Position Green Light Fault (System 2) - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66011 L GRN LT 2 FAULT
 - (b) 32-66012 NOSE GRN LT 2 FLT
 - (c) 32-66013 R GRN LT 2 FLT
- (2) These maintenance messages show a problem with the Landing Gear Position Lights on the P5 Overhead Panel. Each Light is associated with a maintenance message.

B. Possible Causes

- (1) Indicator Light
- (2) Switch Light
- (3) Proximity Switch Electronics Unit (PSEU), M2061

EFFECTIVITY
SIA ALL

32-61 TASKS 810-811

D633A103-SIA

Page 239
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (4) Wiring

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	13	C01179	INDICATOR MASTER DIM SECT 7

D. Related Data

- (1) SSM 32-61-12
- (2) SSM 33-18-42
- (3) WDM 32-64-12
- (4) WDM 33-18-42

E. Initial Evaluation

- (1) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show on the EXISTING FAULTS Display, then there was an intermittent problem.
 - (b) If the maintenance message shows on the EXISTING FAULTS Display, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the Switch Light:
 - (a) For maintenance message 32-66011, push the Left Gear Green Light on the P5 Overhead Panel.
 - (b) For maintenance message 32-66012, push the Nose Gear Green Light on the P5 Overhead Panel.
 - (c) For maintenance message 32-66013, push the Right Gear Green Light on the P5 Overhead Panel.
- (2) If the Light does not come ON, then do these steps:
 - (a) Replace the Indicator Light.
 - (b) Push the indicator again.
 - (c) If the Light comes ON, then you corrected the problem.
 - (d) If the Light does not come ON, then do these steps:
 - 1) Measure the voltage at pin 1 on the Light Switch Socket (WDM 33-18-42).
 - 2) If you measure 16 or 28V DC at the pin, then do these steps:
 - a) Replace the Switch Light.
 - b) Push the Switch Light.
 - c) If the Light comes ON, then you corrected the problem.
 - 3) If you do not measure 16 or 28 VDC at the pin, then do a wiring check between these pins:

EFFECTIVITY
SIA ALL

32-61 TASK 811

D633A103-SIA

Page 240
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Table 207

MAINTENANCE MESSAGE	CIRCUIT BREAKER		SWITCH LIGHT
	C1179		
	P6-3 F13		L482
32-66011	term 1	--	pin 1
	C1179		
	P6-3 F13		L1001
32-66012	term 1	--	pin 1
	C1179		
	P6-3 F13		L481
32-66013	term 1	--	pin 1

- 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Push the Switch Light.
 - c) If the Light comes ON, then you corrected the problem.
- (3) If the Light comes ON, then do these steps:
 - (a) Remove the connector, D10984, from the PSEU (WDM 32-64-12).
 - (b) Measure the voltage between structure ground and the applicable pin:

Table 208

MAINTENANCE MESSAGE	PSEU D10984
32-66011	pin 32
32-66012	pin 7
32-66013	pin 26

- (c) If you measure 16 or 28V DC at the pin, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - a) If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.
 - (d) If you do not measure 16 or 28V DC at the pin, then continue.
- (4) Do a wiring check between the PSEU and Switch Light as follows:

EFFECTIVITY
SIA ALL

32-61 TASK 811

D633A103-SIA

Page 241
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Table 209

MAINTENANCE MESSAGE	PSEU CONNECTOR D10984		SWITCH LIGHT
			L482
32-66011	pin 32	--	pin 2
			L1001
32-66012	pin 7	--	pin 2
			L481
32-66013	pin 26	--	pin 2

- (a) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - a) If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.

END OF TASK

812. Landing Gear Position Red Light Fault (System 2) - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
- (a) 32-66014 L RED LT 2 FLT
 - (b) 32-66015 NOSE RED LT 2 FLT
 - (c) 32-66016 R RED LT 2 FLT
- (2) These maintenance messages show a problem with the Landing Gear Position Fault Lights on the P5 Overhead Panel. Each Light is associated with a maintenance message.

B. Possible Causes

- (1) Indicator Light
- (2) Landing Gear Module, P2-3
- (3) Wiring
- (4) Proximity Switch Electronics Unit (PSEU), M2061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C00317	INDICATOR MASTER DIM SECT 5

D. Related Data

- (1) SSM 32-61-12
- (2) SSM 33-18-42
- (3) WDM 32-64-12

EFFECTIVITY
SIA ALL

32-61 TASKS 811-812

D633A103-SIA

Page 242
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

(4) WDM 33-18-42

E. Initial Evaluation

- (1) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show on the EXISTING FAULTS Display, then there was an intermittent problem.
 - (b) If the maintenance message shows on the EXISTING FAULTS Display, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the Switch Light:
 - (a) For maintenance message 32-66014, push the Left Gear Red Light on the Landing Gear Module.
 - (b) For maintenance message 32-66015, push the Nose Gear Red Light on the Landing Gear Module.
 - (c) For maintenance message 32-66016, push the Right Gear Red Light on the Landing Gear Module.
- (2) If the Light does not come ON, then do these steps:
 - (a) Replace the Indicator Light.
 - (b) Push the indicator again.
 - (c) If the Light comes ON, then you corrected the problem.
 - (d) If the Light does not come ON, then do these steps:
 - 1) Remove the connector, D11732, from the Landing Gear Module (WDM 33-18-42) (AMM TASK 32-31-11-020-801).
 - 2) Measure the voltage between pin 26 on the connector and ground.
 - 3) If you measure 16 or 28V DC at the pin, then do these steps:
 - a) Replace the Landing Gear Module. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - b) Push the Master Dim and Test Switch.
 - c) If the Light comes ON, then you corrected the problem.
 - 4) If you do not measure 16 or 28V DC at the pin, then do a wiring check between these pins:

Table 210

MAINTENANCE MESSAGE	CIRCUIT BREAKER	P2-3 CONNECTOR
32-66014	C314	
32-66015	P6-3 E12	D11732
32-66016	term 1	-- pin 26

- 5) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

EFFECTIVITY
SIA ALL

32-61 TASK 812

D633A103-SIA

Page 243
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- b) Re-connect the connector on the Landing Gear Module.
 - c) Push the Master Dim and Test Switch.
 - d) If the Light comes ON, then you corrected the problem.
- (3) If the Light comes ON, then do these steps:
- (a) Remove the connector, D10984, from the PSEU (WDM 32-64-12).
 - (b) Measure the voltage between structure ground and the applicable pin:

Table 211

MAINTENANCE MESSAGE	PSEU D10984
32-66014	pin 16
32-66015	pin 8
32-66016	pin 25

- (c) If you measure 16 or 28V DC at the pin, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - a) If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.
 - (d) If you do not measure 16 or 28V DC at the pin, then continue.
- (4) Do a wiring check between the PSEU and Landing Gear Module:
 - (a) Remove the connector, D11732, from the Landing Gear Module (AMM TASK 32-31-11-020-801).
 - (b) Do a check of the wiring between these pins:

Table 212

MAINTENANCE MESSAGE	PSEU CONNECTOR D10984		P2-3 CONNECTOR D11732
32-66014	pin 16	--	pin 4
32-66015	pin 8	--	pin 13
32-66016	pin 25	--	pin 25

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the Landing Gear Module.
 - 3) Re-connect the connector on the PSEU.
 - 4) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

EFFECTIVITY
SIA ALL

32-61 TASK 812

D633A103-SIA

Page 244
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- a) If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.

————— **END OF TASK** —————

813. Nose Steering Relay Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
(a) 32-06016 NGS RLY FLT
(2) This maintenance message shows a fault with an air/ground relay output.

B. Possible Causes

- (1) Wiring problem
(2) System 2 air/ground relay, R596
(3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C01355	LANDING GEAR AIR/GND SYS 2

D. Related Data

- (1) (SSM 32-31-12)
(2) (WDM 32-31-12)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
(a) If you do not find the maintenance message, then there was an intermittent fault.
(b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do these steps to replace the system 2 air/ground relay:
(a) Replace the relay.
(b) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
(c) If you do not find the maintenance message, then you corrected the fault.
(d) If you find the maintenance message, then continue.
(2) Do this check for power to the relay:
(a) Remove the relay R596 from the J20 panel.
(b) Examine the connectors and sockets for damage and unwanted material.
(c) Measure the voltage between pin X1 on the relay socket and structure ground.
(d) If you do not measure 28 VDC at the pin, then do these steps:
1) Do a wiring check between these pins of the circuit breaker C314 and connector D11026 for the relay R596:

EFFECTIVITY
SIA ALL

32-61 TASKS 812-813

D633A103-SIA

Page 245
Jun 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

C314 P6-3 E12

term 1 pin X1

D11026

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the relay.
 - c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - d) If you do not find the maintenance message, then you corrected the fault.
- (e) If you measure 28 VDC at the pin, then continue.

- (3) Do this wiring check between the relay and PSEU:

- (a) Remove the connector D11140 from the PSEU.
- (b) Do a check for continuity between these pins of the connector D11026 for the relay R596 and connector D11140 for the PSEU:

D11026

pin X2 pin 24

D11140

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.

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

- (4) Do these steps to replace the PSEU:

- (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (b) Do the post installation test in the PSEU installation procedure.
- (c) If the test operates correctly, then you corrected the fault.

————— **END OF TASK** —————

815. Flap Landing Warning Switch Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-62009 LDG FLAP A FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 32-62109 LDG FLAP A FAULT

SIA ALL

- (c) 32-62010 LDG FLAP B FAULT

EFFECTIVITY
SIA ALL

32-61 TASKS 813-815

D633A103-SIA

Page 246
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (d) 32-62110 LDG FLAP B FAULT

SIA ALL

- (e) 32-62014 LDG FLAP DISAGREE

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show a disagreement between the flap landing warning switch and air/ground mode. One of these conditions exist:
- (a) For maintenance message 32-62009 the flap landing warning switch indicates that landing flaps A is not in a landing configuration when the airplane is landing.
 - (b) For maintenance message 32-62109 the flap landing warning switch indicates that landing flaps A is in a landing configuration when the airplane is in the air for more than two minutes and is not landing.
 - (c) For maintenance message 32-62010 the flap landing warning switch indicates that landing flaps B is not in a landing configuration when the airplane is landing.
 - (d) For maintenance message 32-62110 the flap landing warning switch indicates that landing flaps B is in a landing configuration when the airplane is in the air for more than two minutes and is not landing.
 - (e) For maintenance message 32-62014 these inputs to the PSEU: LANDING FLAPS A and LANDING FLAPS B do not agree.

SIA ALL

B. Possible Causes

- (1) Flap landing warning switch, S138
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do this test of the flap position switch in the UP position:
- (a) Put the flaps in the FLAP UP position. Do this task: Leading Edge Flaps and Slats Retraction, AMM TASK 27-81-00-860-804.
 - (b) Show the input status for these flap position inputs on the PSEU display:
NOTE: If you need instructions on how to show the input status, review task: (32-09 TASK 821).
 - 1) D10984 pin 48
 - 2) D10984 pin 49

EFFECTIVITY
SIA ALL

32-61 TASK 815

D633A103-SIA

Page 247
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (c) If the status of either pin is GND, then do the Fault Isolation Procedure - Flaps Up below.
- (d) If the status of both pins is NO GND, then continue.
- (2) Do this test of the flap position switch in the DOWN position:
 - (a) Put the flaps in the fully down FLAP DOWN position. To do this, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.
 - (b) Show the input status for these flap position inputs on the PSEU display:
 - 1) D10984 pin 48
 - 2) D10984 pin 49
 - (c) If the status of either pin is NO GND, then do the Fault Isolation Procedure - Flaps Down below.
 - (d) If the status of both pins is GND, then you had an intermittent fault.

NOTE: The switch S138 is adjusted to actuate (provide ground) at between 10 and 15 units Flaps Down.

 - 1) Return the flaps to their usual condition.

F. Fault Isolation Procedure - Flaps Up (Switch S138 is in Open Position)

- (1) Do this test of the flap landing warning switch:
 - (a) Disconnect the D46040P connector.
 - (b) Examine the connector and pins for damage.
 - (c) Show the input status for these flap position inputs on the PSEU display:

NOTE: If you need instructions on how to show the input status, review task: (Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure, 32-09 TASK 821).

 - 1) D10984 pin 48
 - 2) D10984 pin 49
 - (d) If status of both pins are NO GND, replace S138 Flap Landing Gear Switch.
 - (e) If PSEU returns GND for either input, then continue.
- (2) Do this test of the PSEU:
 - (a) Disconnect connector D10984 from the PSEU.
 - (b) Examine the connector and pins for damage.
 - (c) Show the input status for the flap position inputs on the PSEU display:
 - 1) D10984 pin 48
 - 2) D10984 pin 49
 - (d) If the status of either pin is GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Re-connect the connector to the flap landing warning switch.
 - 3) Do the post installation test in the PSEU installation procedure.
 - 4) If the test operates correctly, then you corrected the fault.



**737-600/700/800/900
FAULT ISOLATION MANUAL**

G. Fault Isolation Procedure - Flaps Down (Switch S138 is in Closed Position)

- (1) Do this test of the flap landing warning switch:
 - (a) Disconnect the D46040P connector from the switch.
 - (b) Examine the connector and pins for damage.
 - (c) Attach D46040P connector pins 8 and 10 to structure ground.
 - (d) Show the input status for these flap position inputs on the PSEU display:

NOTE: If you need instructions on how to show the input status, see this task: (Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure, 32-09 TASK 821).

 - 1) D10984 pin 48
 - 2) D10984 pin 49
 - (e) If the PSEU returns GND, then do these steps:
 - 1) Replace the flap landing warning switch. These are the tasks:
 - Flap Landing Warning Switch Removal, AMM TASK 31-51-01-000-801
 - Flap Landing Warning Switch Installation, AMM TASK 31-51-01-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (f) If the PSEU returns NO GND for either input, then continue.
- (2) Do this test of the PSEU:
 - (a) Disconnect connector D10984 from the PSEU.
 - (b) Examine the connector and pins for damage.
 - (c) Ground D10984 pins 48 and 49 on the PSEU with jumpers attached to structure ground.
 - (d) Show the input status for the flap position inputs on the PSEU display:
 - 1) D10984 pin 48
 - 2) D10984 pin 49
 - (e) If the status of either pin is NO GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Re-connect the connector to the flap landing warning switch.
 - 3) Do the post installation test in the PSEU installation procedure.
 - 4) If the test operates correctly, then you corrected the fault.
 - (f) If the status of both pins is NO GND, then do these steps:
 - 1) Repair the wiring between the PSEU and flap landing warning switch.
 - 2) Re-connect connector D10984 to the PSEU.
 - 3) Re-connect the connector to the flap landing warning switch.
 - 4) Do the Repair Confirmation at the end of this task.



**737-600/700/800/900
FAULT ISOLATION MANUAL**

H. Repair Confirmation

- (1) Do this test of the flap position switch:
 - (a) Put the flaps in the fully down FLAP DOWN position. Do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.
 - (b) Put the flaps in the FLAP UP position. Do this task: Leading Edge Flaps and Slats Retraction, AMM TASK 27-81-00-860-804.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.

———— **END OF TASK** ————

816. Landing Warning Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66018 LDG WARN FAULT
- (2) This maintenance message shows a problem with the aural warning module.

B. Possible Causes

- (1) Aural warning module, M315
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check for power to the aural warning module:
 - (a) Remove the connector D940 from the aural warning module.
 - (b) Measure the voltage at pin 5 of the connector.
 - (c) If you do not measure 28 VDC at the pin, then do these steps:
 - 1) Do a check for continuity between these pins of the circuit breaker C451 and connector D940 of the aural warning module:

EFFECTIVITY
SIA ALL

32-61 TASKS 815-816

D633A103-SIA

Page 250
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

C451 P6 D18	D940
term 1	pin 5

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the aural warning module.
 - c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - d) If you do not find the maintenance message, then you corrected the fault.
- (d) If you measure 28 VDC at the pin, then continue.
- (2) Replace the aural warning module, M315.
 - (a) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (b) If you do not find the maintenance message, then you corrected the fault.
 - (c) If you find the maintenance message, then continue.
- (3) Do this wiring check for the aural warning module:
 - (a) Remove the connector D940 from the aural warning module.
 - (b) Remove the connector D10984 from the PSEU.
 - (c) Do a check for continuity between these pins of connector D940 and D10984:

D940	D10984
pin 2	pin 53

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-connect the connector on the aural warning module.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
- (4) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
SIA ALL

32-61 TASK 816

D633A103-SIA

Page 251
Jun 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

818. PSEU Dispatch Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66007 DISPATCH 1 FAULT
 - (b) 32-66010 NO DISP 1 FAULT
 - (c) 32-66017 DISPATCH 2 FAULT
 - (d) 32-66020 NO DISP 2 FAULT
- (2) These maintenance messages indicate a problem with the Flight Recorder and Mach Airspeed Warning Module.
 - (a) For maintenance message 32-66007, the PSEU does not sense the expected load on the DISPATCH FAULT A output.
 - (b) For maintenance message 32-66010, the PSEU does not sense the expected load on the NO DISPATCH FAULT A output.
 - (c) For maintenance message 32-66017, the PSEU does not sense the expected load on the DISPATCH FAULT B output.
 - (d) For maintenance message 32-66020, the PSEU does not sense the expected load on the NO DISPATCH FAULT B output.

B. Possible Causes

- (1) Flight Recorder and Mach Airspeed Warning Module, P5-19
- (2) Wiring
- (3) Auxiliary Dim and Test Module, M1456
- (4) Resistor, R744
- (5) Circuit breaker, C1180
- (6) PSEU, M2061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
E	14	C00316	INDICATOR MASTER DIM SECT 4
F	14	C01180	INDICATOR MASTER DIM SECT 8

D. Related Data

- (1) SSM 32-61-21
- (2) SSM 31-52-75
- (3) SSM 33-18-42
- (4) WDM 32-64-21
- (5) WDM 31-52-75
- (6) WDM 33-18-42

EFFECTIVITY
SIA ALL

32-61 TASK 818

D633A103-SIA

Page 252
Feb 15/2022



737-600/700/800/900 FAULT ISOLATION MANUAL

E. Initial Evaluation

- (1) Cycle this circuit breaker to reset the P5-19 Logic:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4

- (2) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show in the EXISTING FAULTS, then there was an intermittent problem.
 - (b) If the maintenance message shows in the EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Replace the Flight Recorder and Mach Airspeed Warning Module, P5-19.
 - (a) Do the Repair Confirmation at the end of this task.
- (2) Do this wiring check between the P5-19 Module and the PSEU:
 - (a) Remove the connector D483 from the P5-19 Module.
 - (b) For maintenance message 32-66007, remove the connector D11138 from the PSEU.
 - (c) For maintenance message 32-66010, remove the connector D10982 from the PSEU.
 - (d) For maintenance message 32-66017, remove the connector D10988 from the PSEU.
 - (e) For maintenance message 32-66020, remove the connector D11140 from the PSEU.
 - (f) Examine the connector and socket for damage and unwanted material.
 - (g) Do a check for continuity between these pins:

Table 213

FAULT	P5-19 MODULE D483		PSEU
			D11138
32-66007	pin 39	--	pin 23
			D10982
32-66010	pin 35	--	pin 14
			D10988
32-66017	pin 39	--	pin 8
			D11140
32-66020	pin 35	--	pin 19

- (h) For maintenance messages 32-66010 and 32-66020, do a check for continuity between these pins on the PSEU and PSEU Fault Light:

Table 214

FAULT	PSEU FAULT LIGHT		PSEU
			D10982
32-66010	pin 2	--	pin 14

EFFECTIVITY
SIA ALL

32-61 TASK 818

D633A103-SIA

Page 253
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

Table 214 (Continued)

FAULT	PSEU FAULT LIGHT	PSEU
		D11140
32-66020	pin 2	pin 19
(i) If you find a problem with the wiring, then do these steps: 1) Repair the wiring. 2) Re-connect the connectors on the PSEU. 3) Re-connect the connector on the P5-19 Module. 4) Do the Repair Confirmation at the end of this task. (j) If you do not find a problem with the wiring, then continue. (k) Re-connect the connectors on the PSEU. (l) Re-connect the connector on the P5-19 Module. (3) Replace the Auxiliary Dim and Test Module, M1456. This is the task: Master Dim and Test System - Module Replacement, AMM TASK 33-18-00-960-806. (a) Do the Repair Confirmation at the end of this task. (4) For maintenance messages 32-66007 or 32-66017, do this check of the Resistor R744 and associated wiring (WDM 32-64-21): (a) Measure the Resistance between the two terminals on the Resistor Module. (b) If the Resistance is not between 40 and 60 K-ohms, then do these steps: 1) Replace the Resistor. 2) Do the Repair Confirmation at the end of this task. (c) If the Resistance is between 40 and 60 K-ohms, then continue. (d) Remove the connector D483 from the P5-19 Module. (e) Do a check for continuity between these pins:		

Table 215

RESISTOR MODULE

P5 MODULE

pin A29

--

P5-19 D483

pin 39

L1331

pin B29

--

pin 1

- (f) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the connector on the P5-19 Module.
 - 3) Do the Repair Confirmation at the end of this task.
- (g) If you do not find a problem with the wiring, then continue.
- (h) Re-connect the connector on the P5-19 Module.
- (5) For maintenance messages 32-66007 or 32-66017, do this check of the circuit breaker C01180 and associated wiring (WDM 32-64-21, WDM 33-18-42):

EFFECTIVITY
SIA ALL

32-61 TASK 818

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 254
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (a) Get access to the circuit breaker terminals.
- (b) Do a check for continuity between the two terminals on the circuit breaker.
- (c) If there is not continuity, then do these steps:
 - 1) Replace this circuit breaker:
 - a) This is the circuit breaker:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	14	C01180	INDICATOR MASTER DIM SECT 8

- 2) Do the Repair confirmation at the end of this task.
- (6) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show in the EXISTING FAULTS, then you corrected the problem.
 - (b) If the maintenance message still shows in the EXISTING FAULTS, then continue the Fault Isolation Procedure at the subsequent step.

———— **END OF TASK** ————

822. Landing Warning Inhibit Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-62011 LDG WARN INHB FLT
- (2) This maintenance message shows a problem with the horn reset switch.

B. Possible Causes

- (1) Horn reset switch, S77
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

EFFECTIVITY
SIA ALL

32-61 TASKS 818-822

D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Page 255
Feb 15/2022



**737-600/700/800/900
FAULT ISOLATION MANUAL**

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.

NOTE: This fault can be caused if the horn reset switch is pushed for greater than 5 seconds. The fault will reset 5 seconds after the switch is released but the PSEU light will remain lit until the PSEU light is reset.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do these steps to replace the horn reset switch:
 - (a) Replace the horn reset switch, S77.
 - (b) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (c) If you do not find the maintenance message, then you corrected the fault.
 - (d) If you find the maintenance message, then continue.
 - (2) Do this wiring check for the horn reset switch:
 - (a) Remove the horn reset switch.
 - (b) Remove the connector D10984 from the PSEU.
 - (c) Do a check for continuity between these pins:

HORN RESET SWITCH	PSEU D10984
pin 3	pin 52
pin 4	ground
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-install the horn reset switch.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.
 - (e) If you do not find a problem with the wiring, then continue.
 - (f) Re-install the horn reset switch.
- (3) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

————— **END OF TASK** —————

EFFECTIVITY
SIA ALL

32-61 TASK 822

D633A103-SIA

Page 256
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

823. Altitude Less Than 800 Feet Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

(a) 27-62003 ALT L LT 800 FLT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 27-62103 ALT L LT 800 FLT

(c) 27-62203 ALT L LT 800 FLT

SIA ALL

(d) 27-62004 ALT R LT 800 FLT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(e) 27-62104 ALT R LT 800 FLT

(f) 27-62204 ALT R LT 800 FLT

SIA ALL

(g) 27-65001 ALT L LT 800

(h) 27-65002 ALT R LT 800

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(2) These maintenance messages show a disagreement between the altitude and air/ground mode.

SIA ALL; AIRPLANES WITH PSEU -6

(a) Maintenance message 27-62003 will be set when the left signal on the flight control computer shows the airplane altitude is more than 800 feet and the airplane is landing or on the ground.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(b) Maintenance message 27-62103 will be set when the airplane has landed and the left signal on the flight control computer did not indicate altitude is more than 800 ft while the airplane was in the air and it has been at least 2 minutes between takeoff and landing.

(c) Maintenance message 27-62203 will be set LRU replacement when the left signal on the flight control computer shows that the airplane altitude is more than 800 feet and the right signal on the flight control computer shows that the airplane altitude is less than 800 feet.

SIA ALL; AIRPLANES WITH PSEU -6

(d) Maintenance message 27-62004 will be set when the right signal on the flight control computer shows the airplane altitude is more than 800 feet and the airplane is landing or on the ground.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(e) Maintenance message 27-62104 will be set when the airplane has landed and the right signal on the flight control computer did not indicate altitude is more than 800 ft while the airplane was in the air and it has been at least 2 minutes between takeoff and landing.

(f) Maintenance message 27-62204 will be set LRU replacement when the right signal on the flight control computer shows that the airplane altitude is more than 800 feet and the left signal on the flight control computer shows that the airplane altitude is less than 800 feet.

EFFECTIVITY
SIA ALL

32-61 TASK 823

D633A103-SIA

Page 257
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- (g) Maintenance message 27-65001 will set when the left signal from the flight control computer to the PSEU has either failed open or closed during the current flight leg or during speedbrake test.
- (h) Maintenance message 27-65002 will set when the right signal from the flight control computer to the PSEU has either failed open or closed during the current flight leg or during speedbrake test.

SIA ALL

B. Possible Causes

- (1) Wiring problem
- (2) FCC, M1875 (A) or M1876 (B)
- (3) Radio Altimeter Transmitter/Receiver, M1735 (1) or M1736 (2)
- (4) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

- (1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 27-62-21)
- (2) (WDM 27-62-21)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the FCC:
 - (a) Do the EXISTING FAULTS test on the FCC BITE. Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

NOTE: For maintenance message 27-62003, 27-62103, 27-62203 or 27-65001, do the test on the FCC A. For maintenance message 27-62004, 27-62104, 27-62204 or 27-65002, do the test on the FCC B.

SIA ALL

- (b) If you find maintenance messages, then do these steps:
 - 1) Do the FIM procedures referenced by the messages.
 - 2) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 3) If you do not find the maintenance message, then you corrected the fault.

EFFECTIVITY
SIA ALL

32-61 TASK 823

D633A103-SIA

Page 258
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- (c) If you do not find maintenance messages, then continue.
- (2) Do this wiring check between the PSEU and FCC:

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message 27-62003, 27-62103, 27-62203 or 27-65001, remove the FCC A.
- (b) For maintenance message 27-62004, 27-62104, 27-62204 or 27-65002, remove the FCC B.

SIA ALL

- (c) To remove the FCC, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
- (d) Remove the connector D10986 from the PSEU.
- (e) Examine the connectors and sockets for damage and unwanted material.
- (f) If you removed the FCC A, do a check for continuity between these pins:

FCC A	PSEU
D10135A	D10982
pin C1	pin 17

- (g) If you removed the FCC B, do a check for continuity between these pins:

FCC B	PSEU
D10137A	D10984
pin C1	pin 17

- (h) If you find a problem with the wiring, then do these steps:
- 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-install the FCC. To install the FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.
- (i) If you did not find a problem with the wiring, then continue.
- (j) Re-install the FCC. To install the FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
- (3) Do these steps to replace the PSEU:
- (a) Replace the PSEU, M2061. These are the tasks:
- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (b) Do the post installation test in the PSEU installation procedure.
- (c) If the test operates correctly, then you corrected the fault.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

32-61 TASK 823

D633A103-SIA

Page 259
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

824. Ground Spoiler Pressure Fault - Fault Isolation

A. Description

(1) This task is for these maintenance messages:

- (a) 31-52008 GS PRESS A FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 31-52108 GS PRESS A FAULT
- (c) 31-52208 GS PRESS A FAULT

SIA ALL

- (d) 31-52009 GS PRESS B FAULT

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (e) 31-52109 GS PRESS B FAULT
- (f) 31-52209 GS PRESS B FAULT

SIA ALL

- (g) 31-53001 GS PRESS A GT 750
- (h) 31-53002 GS PRESS B GT 750
- (i) 31-55001 GS PRESS A
- (j) 31-55002 GS PRESS B

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

(2) These maintenance messages show a problem with the ground spoiler pressurization.

- (a) Maintenance messages 31-52008 and 31-52009 show that the ground spoiler is pressurized in the air.
- (b) Maintenance messages 31-52108 and 31-52109 show that the ground spoiler is not pressurized when commanded during landing.
- (c) Maintenance messages 31-52208 and 31-52209 show that ground spoiler pressure A and B disagree during LRU replacement test.
- (d) Maintenance messages 31-53001 and 31-53002 are not faults. These are the cause of the last takeoff warning.
- (e) Maintenance messages 31-55001 and 31-55002 show the input from the pressure switch did not change state since the last takeoff.

SIA ALL

B. Possible Causes

- (1) Fractured Ground Spoiler Interlock Valve Cable
- (2) Auto speed brake actuator rod
- (3) Auto speed brake lever actuator, M359
- (4) Loose connector, D1084
- (5) Ground spoiler up pressure switch, S1049
- (6) Wiring problem
- (7) Proximity switch electronics unit (PSEU), M02061

EFFECTIVITY
SIA ALL

D633A103-SIA

32-61 TASK 824

Page 260
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) BITE Diagram (32-61 TASK SUPPORT Figure 301)
- (2) SSM 27-62-21
- (3) SSM 31-53-11
- (4) WDM 27-62-21
- (5) WDM 31-53-11

E. Initial Evaluation

- (1) Do this test of the ground spoiler up pressure switch:
 - (a) Do this test with the ground spoilers in the down position:
 - 1) Show the input status for these pressure switch outputs on the PSEU display:
NOTE: If you need instructions on how to show the input status, see this task: (32-09 TASK 821).
 - a) D10986 pin 14
 - b) D10986 pin 29
 - 2) Make sure that the status of pin 14 is NO GND.
 - 3) Make sure that the status of pin 29 is GND.
 - 4) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
 - 5) If the status of the pins are correct, then continue.
 - (b) Do this test with the ground spoilers in the up position:



WARNING

MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- 1) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.
- 2) Make sure the airplane is on its landing gear or compress the right main gear strut a minimum of 5 inches.
NOTE: This will open the ground spoiler interlock valve.
- 3) Make sure that the flap lever is set to the FLAP 1 detent.
- 4) Slowly move the speed brake lever to the UP position.
- 5) Make sure the ground spoilers extend.
- 6) Show the input status for these pressure switch outputs on the PSEU display:

EFFECTIVITY
SIA ALL

32-61 TASK 824

D633A103-SIA

Page 261
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

- a) D10986 pin 14
- b) D10986 pin 29
- 7) Make sure pin 14 is GND.
- 8) Make sure pin 29 is NO GND.
- 9) Do this task: Speed Brake Hydraulic Systems A and B - Pressure Removal, AMM TASK 27-62-00-800-802.
- 10) If the status of the pins are correct, then there was an intermittent fault.
- 11) If the status of the pins are not correct, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you find a problem with the Ground Spoiler Interlock Valve Cable, then do these steps:
 - (a) Replace the Ground Spoiler Interlock Valve Cable, these are the tasks:
 - AMM TASK 27-62-51-000-801
 - AMM TASK 27-62-51-400-801
 - (b) Do the Repair Confirmation at the end of this task.
- (2) Check the adjustment of the auto speed brake actuator rod:
 - (a) If the auto speed brake actuator rod is not adjusted correctly, adjust the auto speed brake actuator rod ends. To adjust them, do this task: Auto Speed Brake Actuator Installation, AMM TASK 27-62-31-400-801.

NOTE: If this adjustment is near the limits, the auto speed brake actuator will possibly not fully retract each time. This can cause the SPEED BRAKE DO NOT ARM light to come on. Also, this can cause the actuator to not engage the retract limit switch. This will cause the motor to run on and can damage the actuator or trip the C440 Auto Speedbrake circuit breaker.
 - (b) Do the Repair Confirmation at the end of this task.
 - 1) If the Repair Confirmation is not satisfactory, then continue.
- (3) Replace the auto speed brake lever actuator, M359. These are the tasks:
 - Auto Speed Brake Actuator Removal, AMM TASK 27-62-31-000-801
 - Auto Speed Brake Actuator Installation, AMM TASK 27-62-31-400-801
 - (a) Do the Repair Confirmation at the end of this task.
 - 1) If the Repair Confirmation is not satisfactory, then continue.
- (4) Check the D1084 connector for looseness.
 - (a) Disconnect and reconnect connector D1084 to the auto speedbrake lever actuator, M359.
 - (b) Do the Repair Confirmation at the end of this task.
 - 1) If the Repair Confirmation is not satisfactory, then continue.
- (5) Do this test of the pressure switch:
 - (a) Disconnect the connector from the pressure switch.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Do this test of pin 1 on the connector:
 - 1) Show the input status for connector D10986 pin 14 on the PSEU display.
 - 2) Make sure that the input status is NO GND.
 - 3) Ground pin 1 with a jumper wire.

EFFECTIVITY
SIA ALL

32-61 TASK 824

D633A103-SIA

Page 262
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 4) Make sure that the input status is GND.
 - 5) If the test does not operate correctly, then do the test of the PSEU below.
 - 6) If the test operates correctly, then continue.
- (d) Do this test of pin 3 on the connector:
- 1) Show the input status for connector D10986 pin 29 on the PSEU display.
 - 2) Make sure that the input status is NO GND.
 - 3) Ground pin 3 with a jumper wire.
 - 4) Make sure that the input status is GND.
 - 5) If the test operates correctly, then do these steps:
 - a) Replace the switch, S1049.
 - b) Do the Repair Confirmation at the end of this task.
 - 6) If the test does not operate correctly, then continue.
- (6) Do this test of the PSEU:
- (a) Remove the connector D10986 from the PSEU.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Do this test of pin 14 on the connector:
 - 1) Show the input status for connector D10986 pin 14 on the PSEU display.
 - 2) Make sure that the input status is NO GND.
 - 3) Ground pin 14 with a jumper wire.
 - 4) Make sure that the input status is GND.
 - 5) If the test does not operate correctly, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the connector to the pressure switch.
 - c) Do the Repair Confirmation steps below.
 - 6) If the test operates correctly, then continue.
 - (d) Do this test of pin 29 on the connector:
 - 1) Show the input status for connector D10986 pin 29 on the PSEU display.
 - 2) Make sure that the input status is NO GND.
 - 3) Ground pin 29 with a jumper wire.
 - 4) Make sure that the input status is GND.
 - 5) If the test does not operate correctly, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801

EFFECTIVITY
SIA ALL

32-61 TASK 824

D633A103-SIA

Page 263
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- b) Re-connect the connector to the pressure switch.
- c) Do the Repair Confirmation steps below.
- 6) If the test operates correctly, then continue.
- (7) Do this check of the wiring between the PSEU and pressure switch:
 - (a) Do a check of the wiring between these pins:

**PRESSURE
SWITCH S1049
D11730**

pin 1	.....	pin 14
pin 2	.....	ground
pin 3	.....	pin 29

**PSEU
D10986**

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-connect the connector on the pressure switch.
 - 4) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the ground spoiler up pressure switch:
 - (a) If it is necessary, re-connect the connectors on the PSEU and ground spoiler up pressure switch.
 - (b) Operate the ground spoilers:



WARNING

MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- 1) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.
- 2) Make sure the airplane is on its landing gear or compress the right main gear strut a minimum of 5 inches.

NOTE: This will open the ground spoiler interlock valve.
- 3) Make sure that the flap lever is set to the FLAP 1 detent.
- 4) Slowly move the speed brake lever to the UP position.
- 5) Make sure the ground spoilers extend.
- 6) Slowly move the speed brake lever to the DOWN position.
- 7) Make sure the ground spoilers come down.
- 8) Do this task: Speed Brake Hydraulic Systems A and B - Pressure Removal, AMM TASK 27-62-00-800-802.
- (c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

EFFECTIVITY
SIA ALL

32-61 TASK 824

D633A103-SIA

Page 264
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- 1) If you do not find the maintenance message, then you corrected the fault.

END OF TASK

825. Ground Spoiler Interlock Valve Closed Sensor Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 31-51001 GSBV CL FAULT
 - 1) Message 31-51001 is set when the Ground Spoiler Interlock Valve CLOSED Sensor indicates that the valve is not closed and the airplane is in the air.

SIA ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 31-51101 GSBV CL FAULT
 - 1) Message 31-51101 is set when the Ground Spoiler Interlock Valve CLOSED Sensor indicates that the valve is closed and the airplane is on the ground.

SIA ALL

- (2) This maintenance message indicates a problem with the Ground Spoiler Interlock Valve CLOSED Sensor.

B. Possible Causes

- (1) Fractured Ground Spoiler Interlock Valve Cable
- (2) Defective/Out of Adjustment Ground Spoiler Interlock Valve CLOSED Sensor, S1050
- (3) Wiring
- (4) Proximity Switch Electronics Unit (PSEU), M2061
- (5) Ground Spoiler Interlock Valve Out of Adjustment

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) WDM 31-53-11

E. Initial Evaluation

- (1) Do a check of the effective gap of the Ground Spoiler Interlock Valve CLOSED Proximity Sensor. This is the task: Ground Spoiler Interlock Valve Proximity Sensor Functional Test, AMM TASK 27-62-61-400-806.
 - (a) If the maintenance message does not show, then there was an intermittent problem.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you find a problem with the Ground Spoiler Interlock Valve Cable, then do these steps:
 - (a) Replace the Ground Spoiler Interlock Valve Cable, these are the tasks:
 - Ground Spoiler Interlock Valve Cable Removal, AMM TASK 27-62-51-000-801

EFFECTIVITY
SIA ALL

32-61 TASKS 824-825

D633A103-SIA

Page 265
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

- Ground Spoiler Interlock Valve Cable Installation, AMM TASK 27-62-51-400-801
- (b) Do the Repair Confirmation at the end of this task.
- (2) Verify that the Ground Spoiler Interlock Valve CLOSED Sensor Target fully contacts the Ground Spoiler Interlock Valve Close Sensor, S1050.
 - (a) If the Target does not fully contact the Proximity Sensor then do the adjustment procedure in this task: Ground Spoiler Interlock Valve Proximity Sensor Installation, AMM TASK 27-62-61-400-803.
 - (b) Do the Repair Confirmation at the end of this task.
- (3) Replace the Ground Spoiler Interlock Valve CLOSED Sensor, S1050. These are the tasks:
 - Ground Spoiler Interlock Valve Proximity Sensor Removal, AMM TASK 27-62-61-000-802
 - Ground Spoiler Interlock Valve Proximity Sensor Installation, AMM TASK 27-62-61-400-803
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Do this wiring check between the PSEU and the Interlock Valve CLOSED Sensor (WDM 31-53-11):
 - (a) Remove the connector from the Pressure Switch.
 - (b) Remove the connector D11142 from the PSEU.
 - (c) Examine the connectors and sockets for damage and unwanted material.
 - (d) Do a check for continuity between these pins:

VLV CLOSED

SNSR

S1050

pin 1	.....	pin 20
pin 2	.....	pin 8

PSEU

D11142

S1050

pin 4 ground

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-connect the connector on the Valve CLOSED Sensor.
 - 4) Do the Repair Confirmation at the end of this task.
- (f) If you did not find a problem with the wiring, then continue.
- (g) Re-connect the connector on the Valve CLOSED Sensor.
- (5) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (6) Do the Ground Spoiler Interlock Valve Adjustment, AMM TASK 27-62-00-820-803.
 - (a) Do the Repair Confirmation at the end of this task.

EFFECTIVITY
SIA ALL

32-61 TASK 825

D633A103-SIA

Page 266
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

G. Repair Confirmation

- (1) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show in the EXISTING FAULTS, then you corrected the problem.
 - (b) If the maintenance message shows in the EXISTING FAULTS, then continue the Fault Isolation Procedure at the subsequent step.

————— **END OF TASK** —————

SIA ALL; AIRPLANES WITH PSEU -6

826. Altitude Less Than 200 Feet and Less Than 800 Feet Fault

A. Description

- (1) This task is for this maintenance messages:
 - (a) 32-62777 L/R ALT FAIL
- (2) This maintenance messages shows a disagreement between the altitude and air/ground mode.
 - (a) Maintenance message 32-62777 will be set if all of these occur:
 - The left signal on the flight control computer shows that the airplane altitude is more than 200 feet.
 - The right signal on the flight control computer shows that the airplane altitude is more than 200 feet.
 - The left signal on the flight control computer shows that the airplane altitude is more than 800 feet.
 - The right signal on the flight control computer shows that the airplane altitude is more than 800 feet.
 - The airplane is landing or on the ground.

B. Possible Causes

- (1) Wiring problem
- (2) Flight Control Computer (FCC) A, M1875 and Flight Control Computer (FCC) B, M1876
- (3) Radio Altimeter Transmitters/Receivers, M1735 (1) and M1736 (2)
- (4) Proximity Switch Electronics unit (PSEU), M02061

C. Circuit Breakers

- (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 27-62-21)
- (2) (SSM 32-61-21)
- (3) (WDM 27-62-21)
- (4) (WDM 32-64-21)

EFFECTIVITY
SIA ALL

32-61 TASKS 825-826

D633A103-SIA

Page 267
Oct 15/2021



737-600/700/800/900 FAULT ISOLATION MANUAL

SIA ALL; AIRPLANES WITH PSEU -6 (Continued)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the FCC:
 - (a) Do the EXISTING FAULTS test on the FCC BITE. Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.
 - (b) If you find maintenance messages, then do these steps:
 - 1) Do the FIM procedures referenced by the messages.
 - 2) Do the Repair Confirmation below.
- (2) Do this wiring check between the PSEU and FCC:
 - (a) Remove the two flight control computers, A and B.
 - 1) For each FCC do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
 - (b) Remove the connector D10982 from the PSEU.
 - (c) Examine the connectors and sockets for damage and unwanted material.

NOTE: Examination of the connectors and sockets should include pins D10135A, D10982, D10137A, D10984 and D10982.
 - (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the Repair Confirmation below.
- (3) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - 1) If the test operates correctly, then you corrected the fault.
 - 2) If the test shows the maintenance message, then do the Repair Confirmation below.
 - 3) Repeat the post installation test of the PSEU. Do this task: Proximity Switch Electronics Unit (PSEU) - Operational Test, AMM TASK 32-09-10-710-801.

G. Repair Confirmation

- (1) Do this test to see if the fault is still active:
 - (a) If necessary, re-connect the connector D10982 from the PSEU.
 - (b) If necessary, re-install each of the flight control computers, A and B. For each FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - (c) Simulate and altitude of more than 800 feet. Do this task: Radio Altitude Simulation Test, AMM TASK 34-33-00-700-801.

EFFECTIVITY
SIA ALL

32-61 TASK 826

D633A103-SIA

Page 268
Oct 15/2021



**737-600/700/800/900
FAULT ISOLATION MANUAL**

SIA ALL; AIRPLANES WITH PSEU -6 (Continued)

- (d) Return the airplane altitude to its usual condition.
- (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.
 - 2) If you find the maintenance message, then go back to the fault isolation procedure.

———— **END OF TASK** ————

EFFECTIVITY
SIA ALL

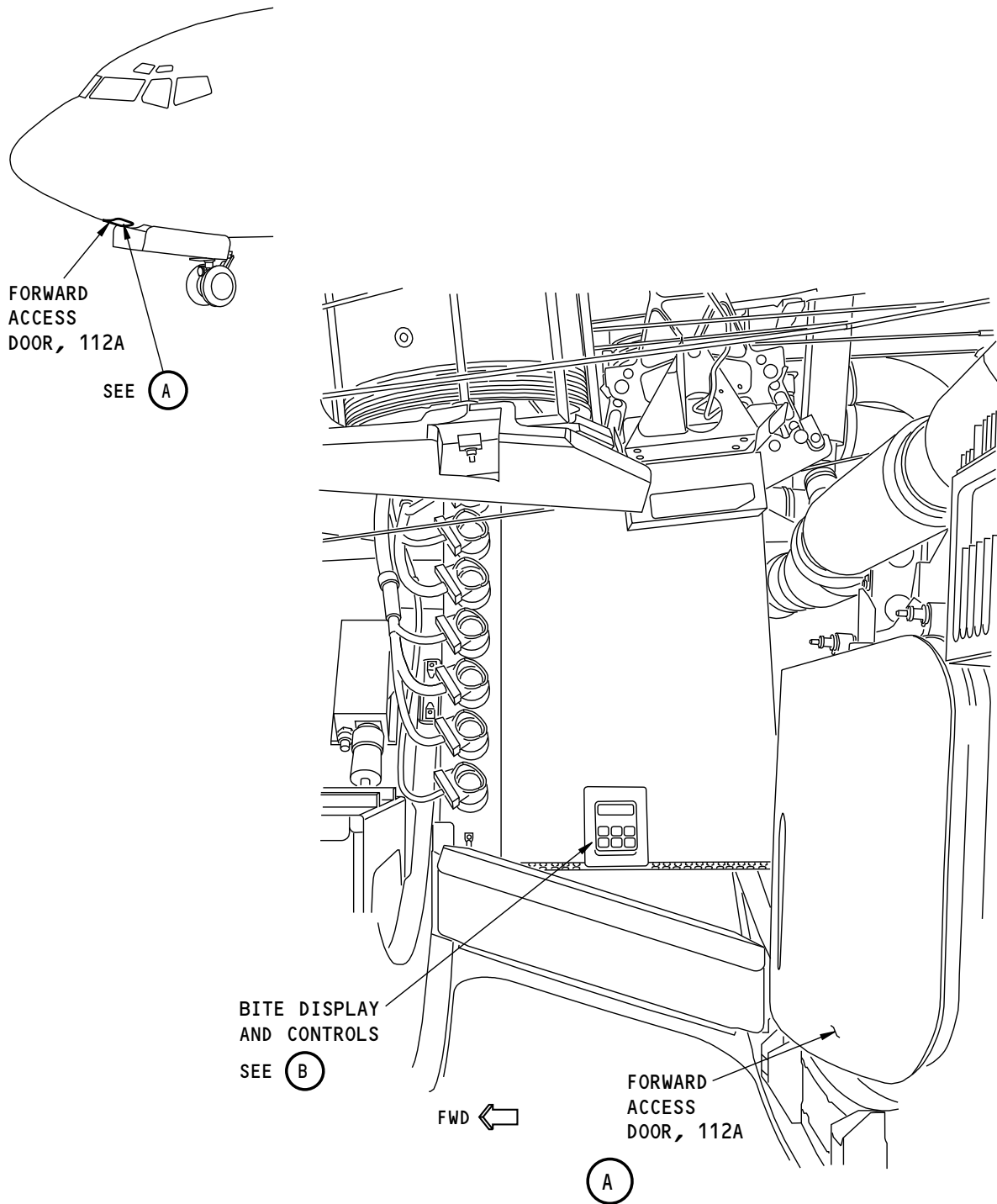
D633A103-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

32-61 TASK 826

Page 269
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



G56901 S0006743861_V1

Proximity Switch Electronics Unit (PSEU) Component Location
Figure 301/32-61-00-990-801 (Sheet 1 of 2)

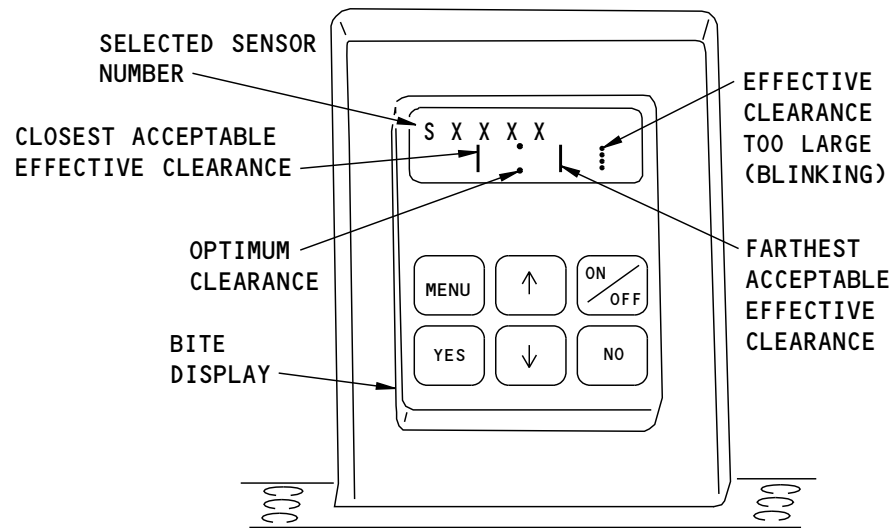
EFFECTIVITY
SIA ALL

32-61 TASK SUPPORT

D633A103-SIA

Page 301
 Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



BITE DISPLAY

(B)

G56903 S0006743862_V1

Proximity Switch Electronics Unit (PSEU) Component Location
Figure 301/32-61-00-990-801 (Sheet 2 of 2)

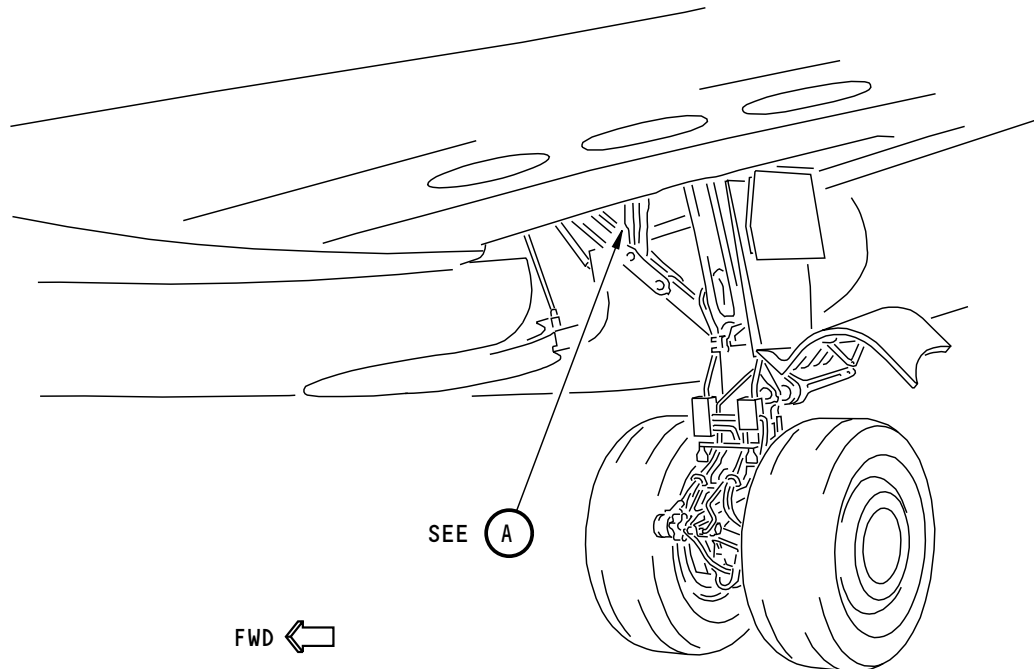
EFFECTIVITY
SIA ALL

32-61 TASK SUPPORT

D633A103-SIA

Page 302
Oct 15/2021

 BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



G56910 S0006743863_V1

Main Landing Gear Down-and-Locked Sensor Component Location
Figure 302/32-61-00-990-802 (Sheet 1 of 2)

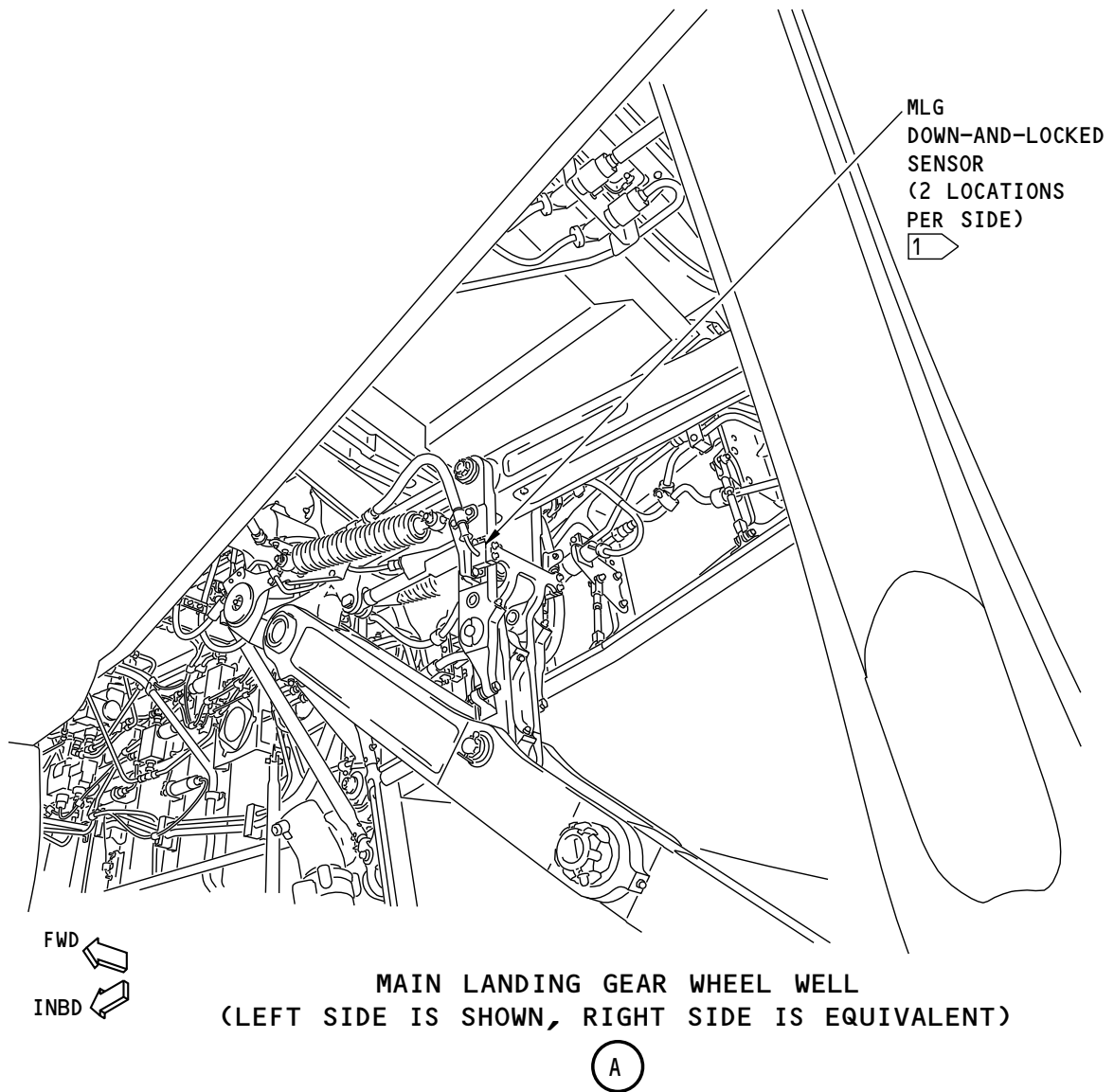
EFFECTIVITY
SIA ALL

32-61 TASK SUPPORT

D633A103-SIA

Page 303
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



1	SYSTEM NO.	SENSOR NO.	MLG	LOCATION
	1	S0071	L	FWD
	1	S0073	R	FWD
	2	S0301	R	AFT
	2	S0302	L	AFT

G56923 S0006743864_V1

Main Landing Gear Down-and-Locked Sensor Component Location
Figure 302/32-61-00-990-802 (Sheet 2 of 2)

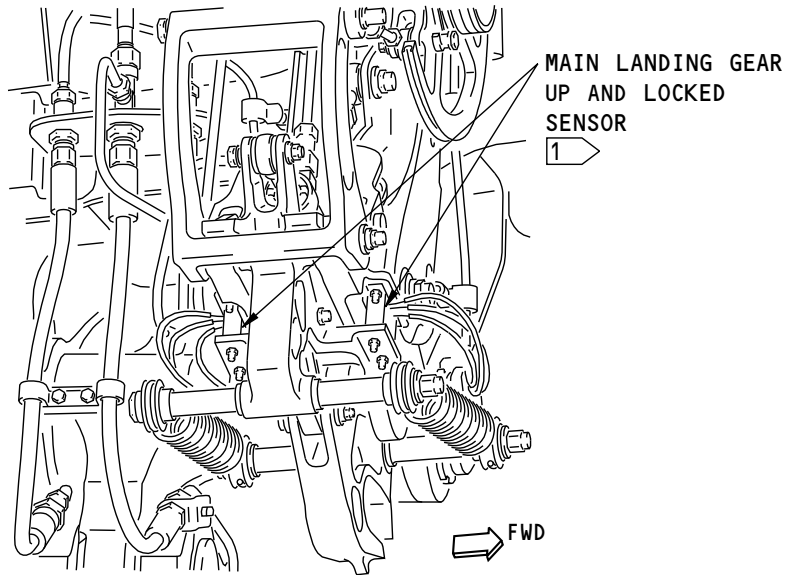
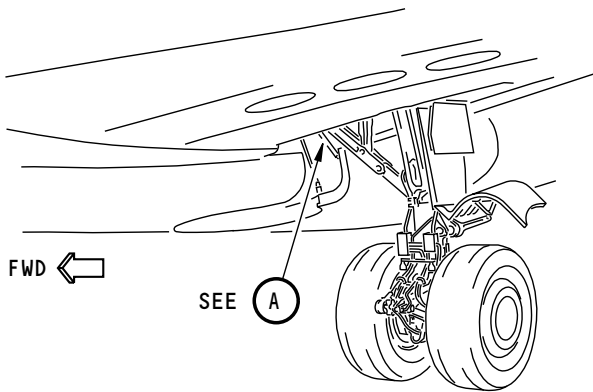
EFFECTIVITY
SIA ALL

32-61 TASK SUPPORT

D633A103-SIA

Page 304
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



LEFT MAIN LANDING GEAR UPLOCK
(RIGHT MAIN LANDING GEAR UPLOCK IS EQUIVALENT)

(A)

SYSTEM NO.	SENSOR NO.	MLG	LOCATION
1	S72	L	FWD
2	S1016	L	AFT
1	S74	R	FWD
2	S1017	R	AFT

G56931 S0006743865_V1

Main Landing Gear Up-and-Locked Sensor Component Location
Figure 303/32-61-00-990-803

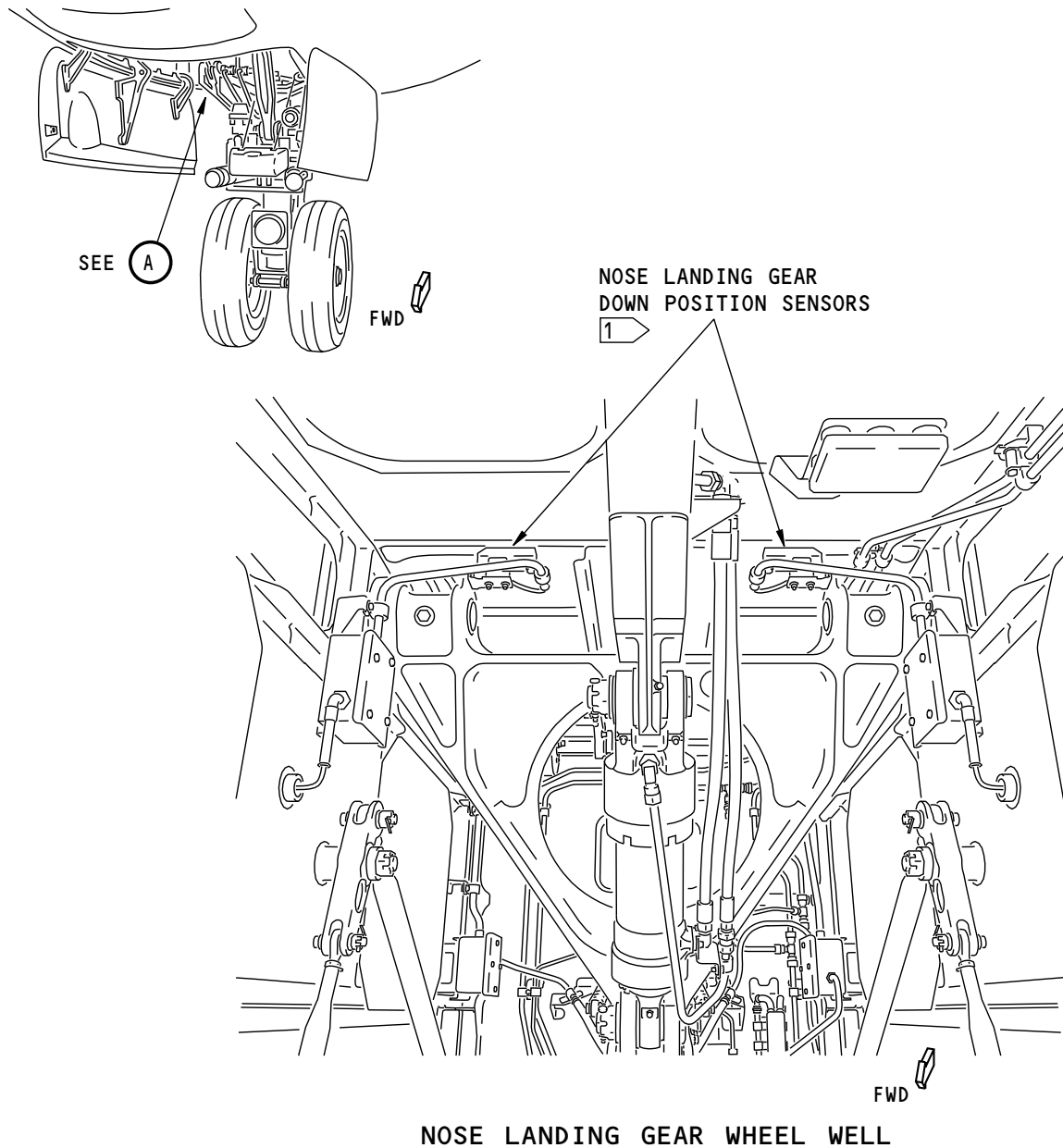
EFFECTIVITY
SIA ALL

32-61 TASK SUPPORT

D633A103-SIA

Page 305
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



SYSTEM NO.	SENSOR NO.	LOCATION
1	S845	L
2	S853	R

G58096 S0006743866_V1

Nose Landing Gear Down Position Sensor Component Location
Figure 304/32-61-00-990-804

EFFECTIVITY
SIA ALL

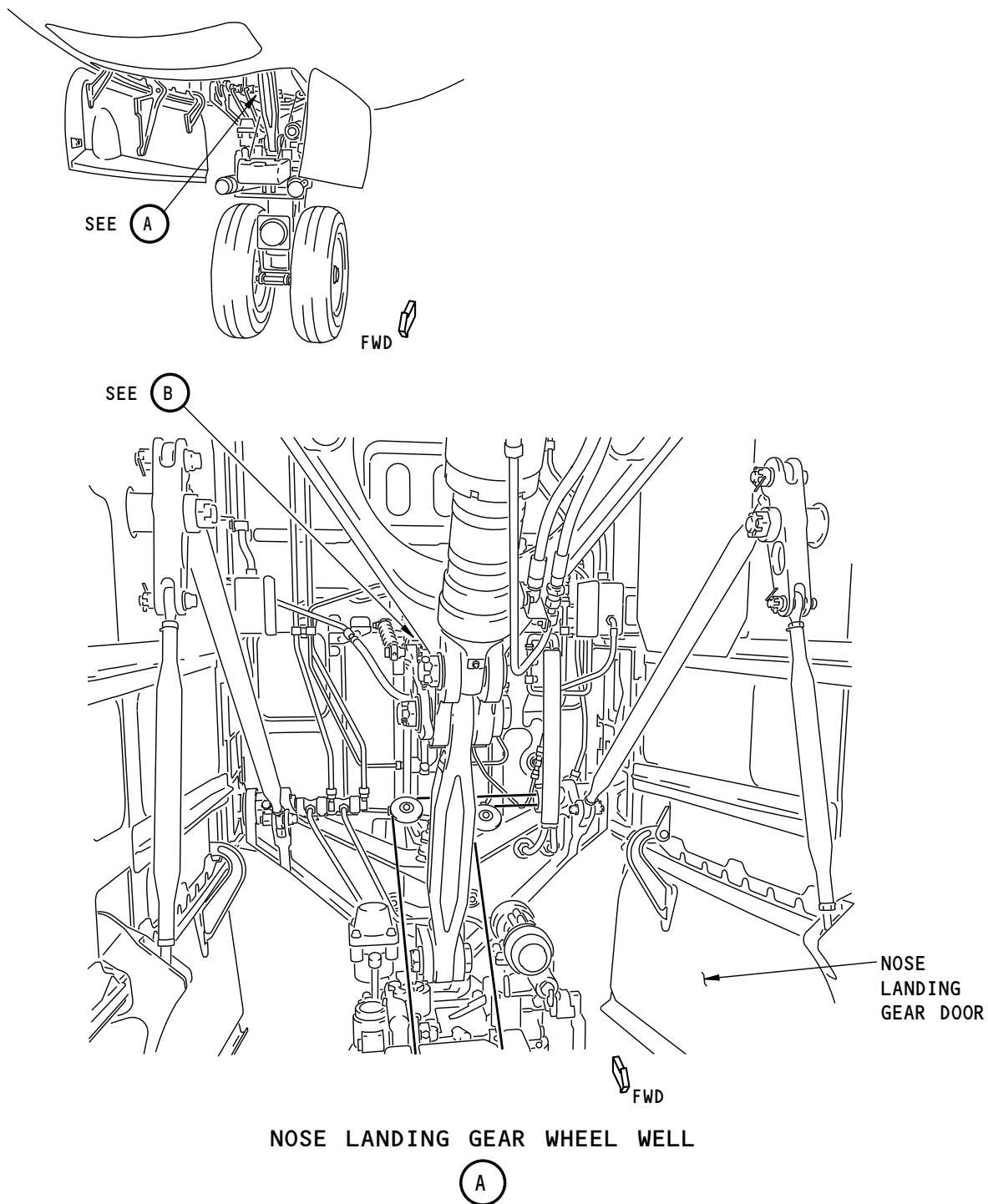
32-61 TASK SUPPORT

D633A103-SIA

Page 306
 Oct 15/2021



737-600/700/800/900
FAULT ISOLATION MANUAL



G58097 S0006743867_V1

Nose Landing Gear Lock Sensor Component Location
Figure 305/32-61-00-990-805 (Sheet 1 of 2)

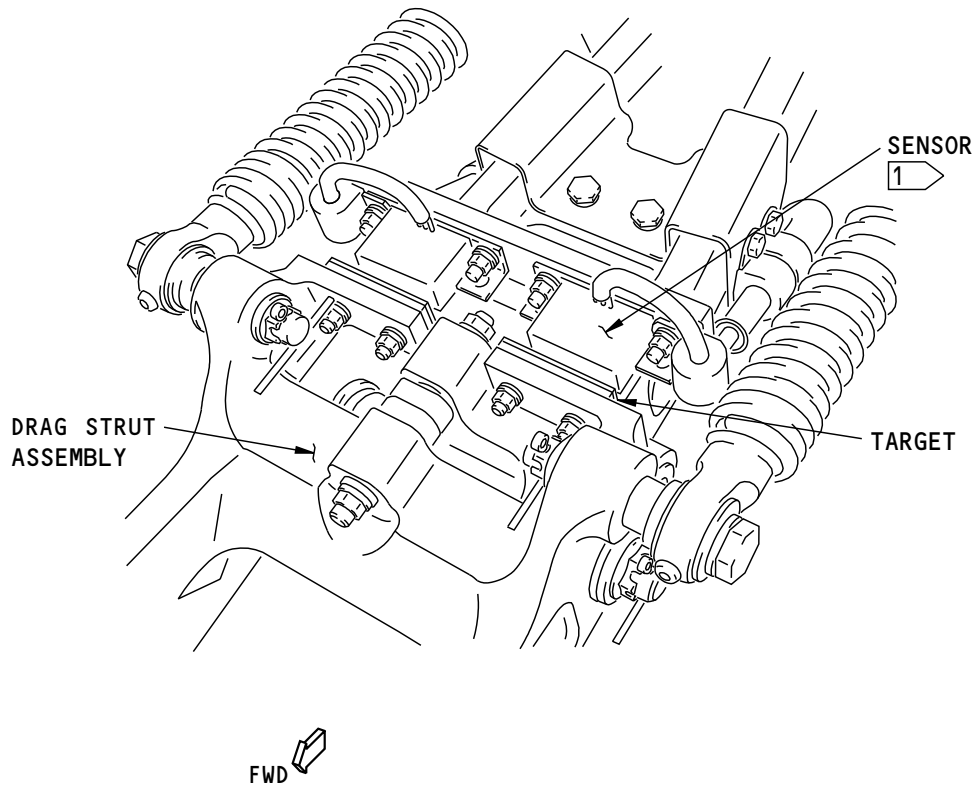
EFFECTIVITY
SIA ALL

32-61 TASK SUPPORT

D633A103-SIA

Page 307
Oct 15/2021

BOEING
737-600/700/800/900
FAULT ISOLATION MANUAL



(B)

SYSTEM NO.	SENSOR NO.	LOCATION
1	S846	L
2	S854	R

G58098 S0006743868_V1

Nose Landing Gear Lock Sensor Component Location
Figure 305/32-61-00-990-805 (Sheet 2 of 2)

EFFECTIVITY
SIA ALL

32-61 TASK SUPPORT

D633A103-SIA

Page 308
Oct 15/2021