CHAPTER

75

AIR

(GE90-100 SERIES ENGINES)

777-200/300
AIRCRAFT MAINTENANCE MANUAL

CHAPTER 75
AIR

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

75-EFFECTIVE PAGES

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AIR - MAINTENANCE PRACTICES

1. General

A. This procedure has one task:

(1) Non LRU air tubes or ducts inspection.

TASK 75-00-00-212-801-H01

2. Non LRU Air Tubes or Air Ducts Inspection

(Figure 201)

A. General

(1) This task provides the instructions on how to examine the non-LRU air tubes or air ducts.

(2) Engine air tubes or air ducts (with the exception of pneumatic supply ducts covered in AMM Chapter 36) are not considered Line Replaceable Units (LRU). They are normally installed only in a shop environment. If you disturb the engine air tubes or air ducts installation while you do modifications or other on-wing engine maintenance then you must refer to the engine manufacturer's shop manual to make sure proper installation of the engine air tubes or air ducts.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-00-00-700-801-H01	Test No. 1 - Pneumatic Leak Test (P/B 501)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Consumable Materials

Reference	Description	Specification
G50163 [C10-217]	Tape - Reinforced Silicone Stretchtape - RL 6000SA	

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(Continued)

Number	Name/Location
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the Inspection

SUBTASK 75-00-00-010-009-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Non LRU Air Tubes or Air Ducts Inspection

SUBTASK 75-00-00-211-001-H00

(1) Do a visual check of the HPTCC air cooling duct for evidence of broken, cracked or split segments.

(a) Broken, cracked or split segments are not permitted, replace or repair the HPTCC cooling air duct.

1) Replace the HPTCC cooling air duct as follows:

a) Loosen and remove the hose clamps [10] on each end of the HPTCC air cooling duct [20].

b) Remove the HPTCC air cooling duct [20].

c) Install protective covers on the HPT air manifold openings.

d) When you are ready to install the replacement or repaired HPTCC cooling air duct, remove the protective covers.

e) Put a hose clamp [10] on each end of the new or repaired HPTCC air cooling duct [20].

f) Put the ends of the HPTCC air cooling duct [20] over the end of the manifold and the end of the HPT air manifold

g) Attach the HPTCC air cooling duct [20] to the two manifolds with the hose clamps [10].

h) Tighten the hose clamp [10] to 32-38 pound-inches (3.6-4.3 Newton-meters).

i) Remove the excess hose clamp [10] strap that is more than 0.5 inch (12.7 mm) from the hose clamp housing.

2) Repair the HPTCC air cooling duct as follows:

a) Attach both ends of the HPTCC air cooling duct [20] in the correct position.

b) Put a wrap of RL 6000SA tape, G50163 [C10-217] on the damaged section as follows:

<1> Apply tape in a spiral fashion and make an overlap of each spiral by 25 percent.

<2> Cover all of the damaged section of the HPTCC air cooling duct [20].

c) Do an inspection in the next aircraft service for loose, missing or damaged RTV tape.

<1> If you find loose, missing or damaged RTV tape, do the repair procedure again.

SUBTASK 75-00-00-211-002-H00

(2) Do a visual check of the CCC flex joint [22] for indication of wear marks.

(a) Wear marks, tears and cracks fully through the material or more than 25 percent of the thickness are not permitted. Replace or repair the CCC flex joint [22].

1) Replace the CCC flex joint [22]as follows:

a) Loosen and remove the hose clamps [21] on each end of the CCC flex joint [22].

b) Remove the CCC flex joint [22].

c) Install protective covers on the air tube and the CCC air tube openings.

d) When you are ready to install the replacement or repaired CCC flex joint [22], remove the protective covers.

e) Put a hose clamp [21] on each end of the new or repaired CCC flex joint [22].

f) Put the ends of the CCC flex joint [22]over the end of the by-pass valve air tube and the end of the CCC air tube.

g) Attach CCC flex joint [22] to the two manifolds with the hose clamps [21].

h) Tighten the hose clamp [21] to 32-38 pound-inches (3.6-4.3 Newton-meters).

i) Remove the excess hose clamp [21] strap that is more than 0.5 inch (12.7 mm) from the hose clamp housing.

2) Repair the CCC flex joint [22] as follows:

a) Attach both ends of the CCC flex joint [22] in the correct position.

b) Put a wrap of RL 6000SA tape, G50163 [C10-217] on the damaged section as follows:

<1> Apply tape in a spiral fashion and make an overlap of each spiral by 25 percent.

<2> Cover all of the damaged section of the CCC flex joint [22].

c) Do an inspection in the next aircraft service for loose, missing or damaged RTV tape.

<1> If you find loose, missing or damaged RTV tape, do the repair procedure again.

SUBTASK 75-00-00-212-001-H01

(3) Do a visual check of all air tubes or air ducts after installation:

(a) Look for signs of air leaks by the E-seals.

1) If you see signs of air leaks, remove the air tubes or air ducts.

a) Make sure that there is no damage on the E-seals.

b) Align the air tubes or air ducts and join the connection correctly.

c) Reinstall the air tubes or air ducts.

(b) Look for cracks in the air tubes or air ducts.

1) If you see cracks, replace the air tubes or air ducts.

(c) Look for dents or bends on the air tubes or air ducts.

1) If you see dents or bends that are damaged beyond repairs, replace the air tubes or air ducts.

(d) Make sure that the air tubes or air ducts are not loose.

NOTE: Verify that all items such as couplings, clamps, blockends, bolts, nuts, flanges, brackets, lockwires, and safety lockwires that were loosened or removed are tightened or reinstalled correctly.

NOTE: The LPTACC duct was designed to have wrinkles. This will make the removal and installation easier.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 75-00-00-410-009-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

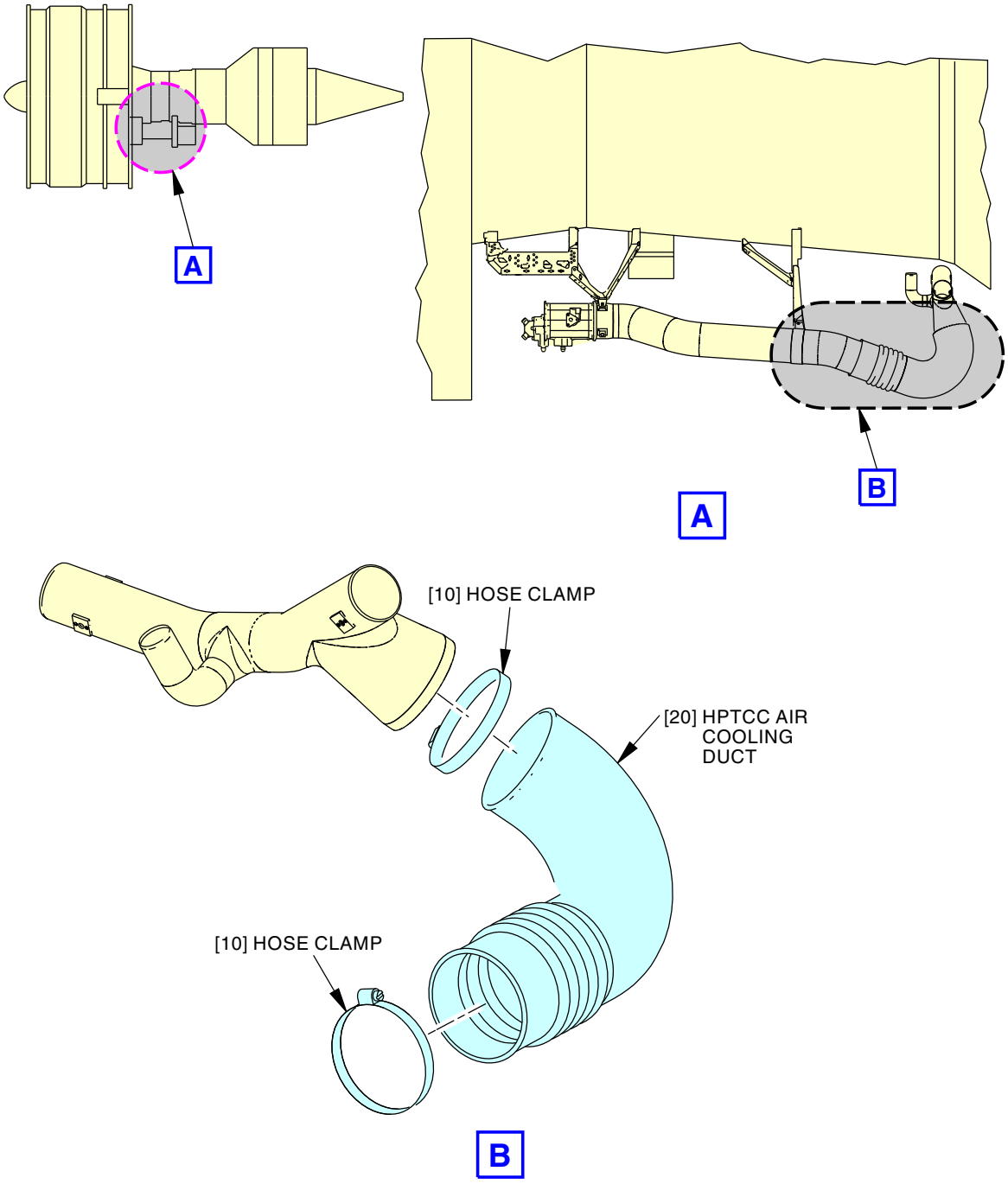
I. Non-LRU Air Tubes or Air Ducts Post Inspection Test

SUBTASK 75-00-00-790-001-H01

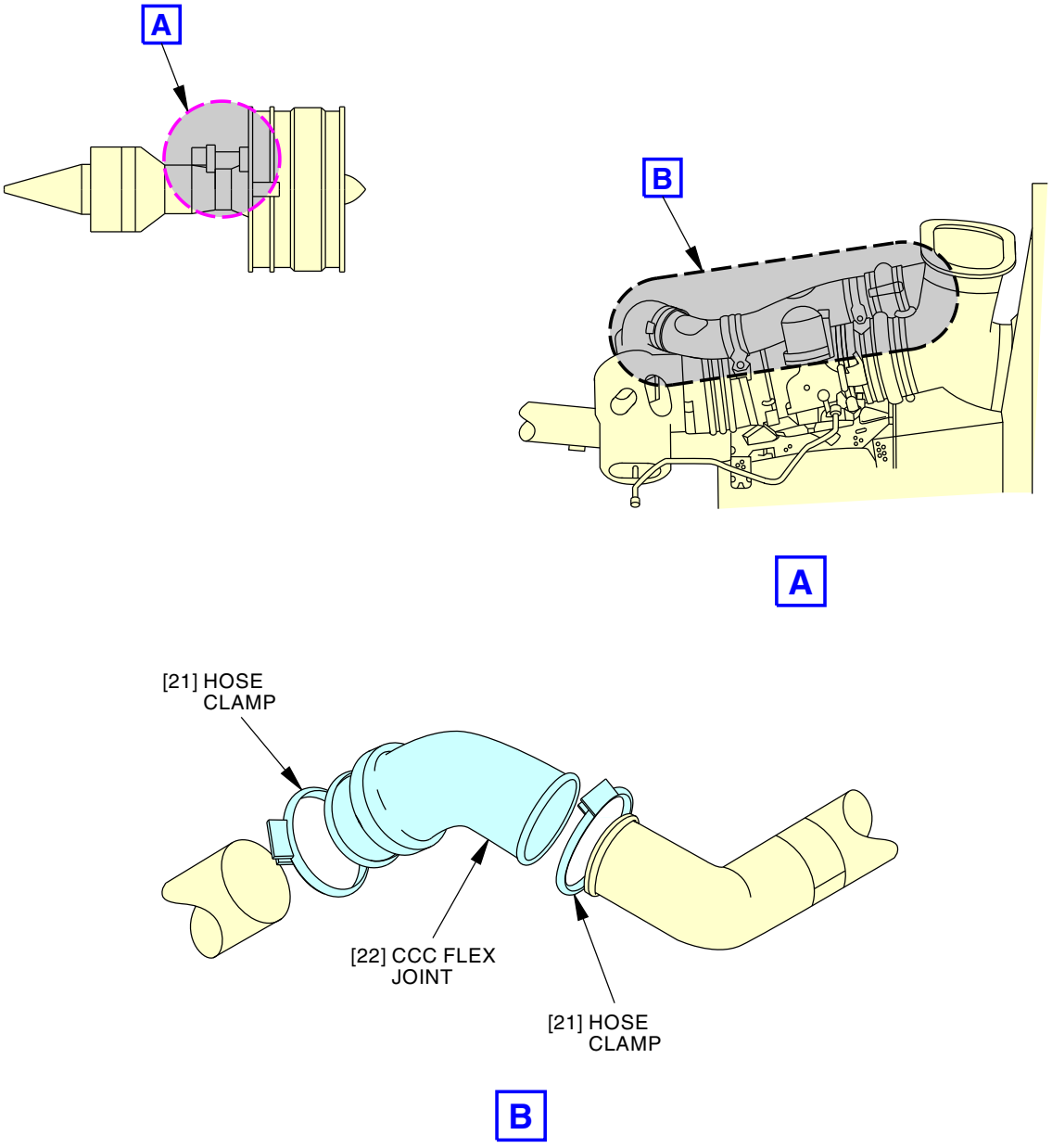
(1) Do an idle leak test (TASK 71-00-00-700-801-H01).

NOTE: An idle leak test is recommended with the appropriate measures taken to detect leaks. This may include the wrapping of pneumatic duct joints with aluminum foil or the use of a snoop detector, if the conventional leak test does not detect the leaks.

——— END OF TASK ———



Non-LRU Air Tubes or Air Ducts Inspection
Figure 201/75-00-00-990-806-H00 (Sheet 1 of 2)



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Non-LRU Air Tubes or Air Ducts Inspection
Figure 201/75-00-00-990-806-H00 (Sheet 2 of 2)

AIR - DDG MAINTENANCE PROCEDURES

1. General

A. This procedure has the maintenance tasks for the Master Minimum Equipment List (MMEL) maintenance requirements as shown in the Dispatch Deviations Guide (DDG).

B. This inspection is applicable to the PRE GE SB 75-0022 and POST GE SB 75-0022 where the CCC valve is disable and not removed. The CCC valve and the CCC feedback switch can be deleted by GE SB 75-0022.

C. This procedure has eight maintenance tasks. There are four tasks that prepare the airplane for flight with the CCC, the LPTACC or the LPCAI valve deactivated (inoperative). There are four tasks that prepare the airplane for flight with the CCC, the LPTACC, the S/TB or the LPCAI valve re-activated.

(1) MMEL 75-10-1 (DDG) Preparation - Low Pressure Compressor Anti-Ice Valve Inoperative

(2) MMEL 75-10-1 (DDG) Restoration - Low Pressure Compressor Anti-Ice Valve Inoperative

ARO ALL PRE SB 777-GE100-75-0022

(3) MMEL 75-23-2 (DDG) Preparation - Core compartment Cooling Valves Inoperative

(4) MMEL 75-23-2 (DDG) Restoration - Core Compartment Cooling Valves Inoperative

ARO ALL

(5) MMEL 75-24-1 (DDG) Preparation - Low Pressure Turbine Active Clearance Control Valve Inoperative

(6) MMEL 75-24-1 (DDG) Restoration - Low Pressure Turbine Active Clearance Control Valve Inoperative

(7) MMEL 75-33-1 (DDG) Preparation - Start/Transient Bleed Valve Inoperative

(8) MMEL 75-33-1 (DDG) Restoration - Start/Transient Bleed Valve Inoperative.

TASK 75-00-00-040-806-H01

2. MMEL 75-10-1 (DDG) Preparation - Low Pressure Compressor Anti-Ice Valve Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Low Pressure Compressor Anti-Ice Valve inoperative.

(2) EICAS Status Messages

(a) ENG LPC AI VALVE L

(b) ENG LPC AI VALVE R

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)

(Continued)

Reference	Title
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-00-00-010-010-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-00-00-860-003-H01

(2) Make sure the shut off valve is in the closed position Figure 901

(a) If the shut off valve is not in the closed position, lift the locking pin and rotate the locking pin to the closed position.

SUBTASK 75-00-00-410-010-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

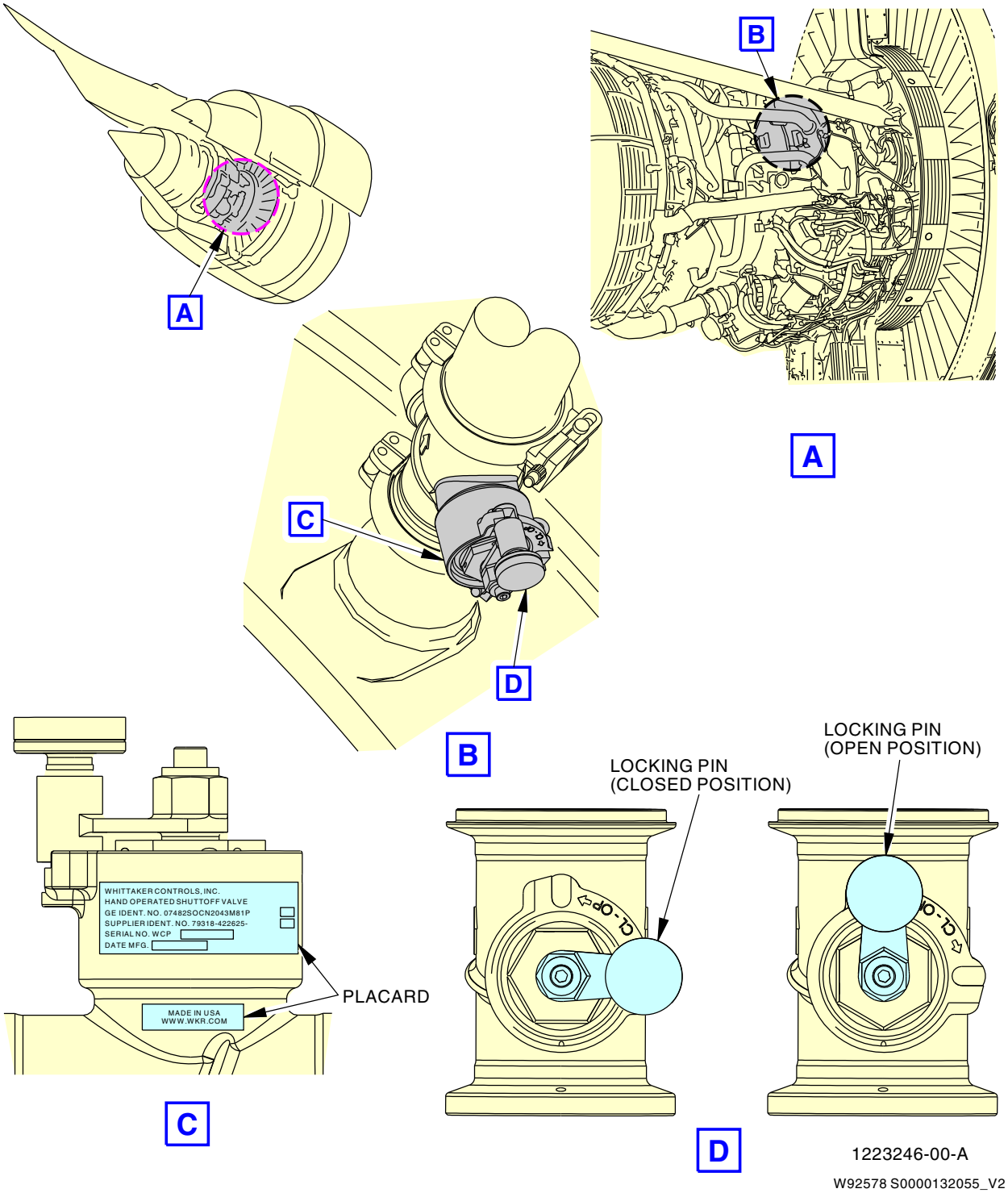
1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

END OF TASK



LPCAI Shut Off Valve Deactivation
Figure 901/75-00-00-990-805-H01

TASK 75-00-00-440-806-H01

3. MMEL 75-10-1 (DDG) Restoration - Low Pressure Compressor Anti-Ice Valve Inoperative

A. General

(1) This task put the airplane back to its usual condition after operation with the Low Pressure Compressor Anti-Ice Valve inoperative.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
422	Inlet Cowl - Right Engine

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-00-00-010-011-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-00-00-440-005-H01

(2) Lift the locking pin and rotate the locking pin to the open position Figure 901.

SUBTASK 75-00-00-740-005-H01

(3) Go to the Mat and find the EICAS status message, ENG LPC AI VALVE L or R (FIM EICAS MESSAGE LIST).

(a) Find the fault code and the correlated maintenance message numbers on the MAT.

SUBTASK 75-00-00-810-009-H01

(4) Go to the Fault Code Index in the FIM and find the fault code (the first two digits of the fault code are the FIM chapter).

(a) For each correlated maintenance message, find the maintenance message number to the right side of the fault code.

(b) Find the task number on the same line as the maintenance message number.

SUBTASK 75-00-00-810-010-H01

(5) Go and do the steps in the FIM task.

SUBTASK 75-00-00-410-011-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(6) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———

TASK 75-00-00-040-801-H01

4. MMEL 75-23-2 (DDG) Preparation - Core Compartment Cooling Valve Inoperative

(Figure 902)

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Core Compartment Cooling Valve Inoperative.

(2) EICAS Status Messages

(a) ENG CCC VALVE L

(b) ENG CCC VALVE R

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
75-23-01-000-801-H01	Core Compartment Cooling (CCC) Valve Removal (P/B 401)
75-23-01-400-801-H01	Core Compartment Cooling (CCC) Valve Installation (P/B 401)
75-23-02-000-801-H01	Core Compartment Cooling (CCC) Valve Feedback Switch Removal (P/B 401)
75-23-02-400-801-H01	Core Compartment Cooling (CCC) Valve Feedback Switch Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-00-00-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-00-00-210-001-H01

(2) Make sure that the CCC valve is in the open position.

(a) If the CCC valve is not in the open position, turn the valve shaft until the position indicator points to the open position.

(b) If you cannot turn the valve shaft until the position indicator points to the open position, or if you can not pull the lock out knob outward and turn it to the locked position, do the steps that follow:

1) Remove the six screws [1] and six washers [2] from the housing cover [3].

2) Remove the housing cover [3].

3) While you turn the valve shaft, use a screwdriver to pry or move part of the valve actuation linkages that are binding or bent to prevent the valve from moving.

a) If you are not able to turn the valve shaft until the position indicator points to the open position, continue with the steps below.

b) Install the housing cover [3] with the six crews [1] and six washers [2].

<1> Tighten the six screws [1] to 17.0 - 20.0 pound-inches (1.91 - 2.26 Newton-meters).

SUBTASK 75-00-00-010-012-H01

(3) Do the steps that follow only if you could not complete the steps above.

(a) Do this task: Core Compartment Cooling (CCC) Valve Removal, TASK 75-23-01-000-801-H01.

(b) Do this task: Core Compartment Cooling (CCC) Valve Feedback Switch Removal, TASK 75-23-02-000-801-H01.

(c) Visually make sure that the CCC valve is stuck open at 70 degrees.

1) You can push on the valve vane and turn the valve shaft to open the valve if necessary until the position indicator points to the open position.

(d) If the valve is stuck at least 70 degrees in the open position.

1) Do this task: Core Compartment Cooling (CCC) Valve Feedback Switch Installation, TASK 75-23-02-400-801-H01.

2) Do this task: Core Compartment Cooling (CCC) Valve Installation, TASK 75-23-01-400-801-H01.

(e) If the valve is not stuck at least 70 degrees in the open position, continue with the steps that follow:

1) Remove the six screws [1] and six washers [2] from the housing cover [3].

2) Remove the housing cover [3].

3) Loosen the screw [16] and washer [17] from the cam [18].

4) Remove the four mounting screws [19].

5) Disconnect the valve body from the actuator.

6) Remove the three screws [4] and three washers [5] from the bearing retainer [6].

a) Remove the bearing retainer [6].

7) Remove the nut [7], washer [8], and bearing [9] from the left shaft [10].

8) Remove the nut [11], washer [12], key [13], and screw [14] from the vane [15].

9) Remove the shaft [10] from the valve body.

10) Keep the nut [11], washer [12], key [13], screw [14], and the vane [15] in the storage.

NOTE: These items must be returned with the CCC valve for the repair at a valve overhaul facility.

11) Install the shaft [10] into the valve body.

12) Install the bearing [9] on the shaft [10].

13) Install the washer [8] through the bearing [9] and on the shaft [10].

14) Install the nut [7] on the shaft [10].

a) Tighten the nut [7] to the maximum as possible or 180.0 - 200.0 pound-inches (20.34 - 22.59 Newton-meters).

15) Install the three washers [5] and the three screws [4] to the bearing cap [6].

a) Tighten the three screws [4] to 17.0 - 20.0 pound-inches (1.91 - 2.26 Newton-meters).

16) Install the actuator into the valve body.

17) Install the four mounting screws [19].

a) Tighten the four screws [19] to 41.0 - 46.0 pound-inches (4.63 - 5.19 Newton-meters).

18) Tighten the screw [16] to 27.0 - 32.0 pound-inches (3.05 - 3.62 Newton-meters).

19) Install the housing cover [3] with the six screws [1] and six washers [2].

a) Tighten the six screws [1] to 17.0 - 20.0 pound-inches (1.91 - 2.26 Newton-meters).

20) Do this task: Core Compartment Cooling (CCC) Valve Feedback Switch Installation, TASK 75-23-02-400-801-H01.

21) Do this task: Core Compartment Cooling (CCC) Valve Installation, TASK 75-23-01-400-801-H01.

SUBTASK 75-00-00-040-001-H01

(4) Pull the lock-out knob outward, and turn it clockwise to the locked position.

SUBTASK 75-00-00-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(5) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

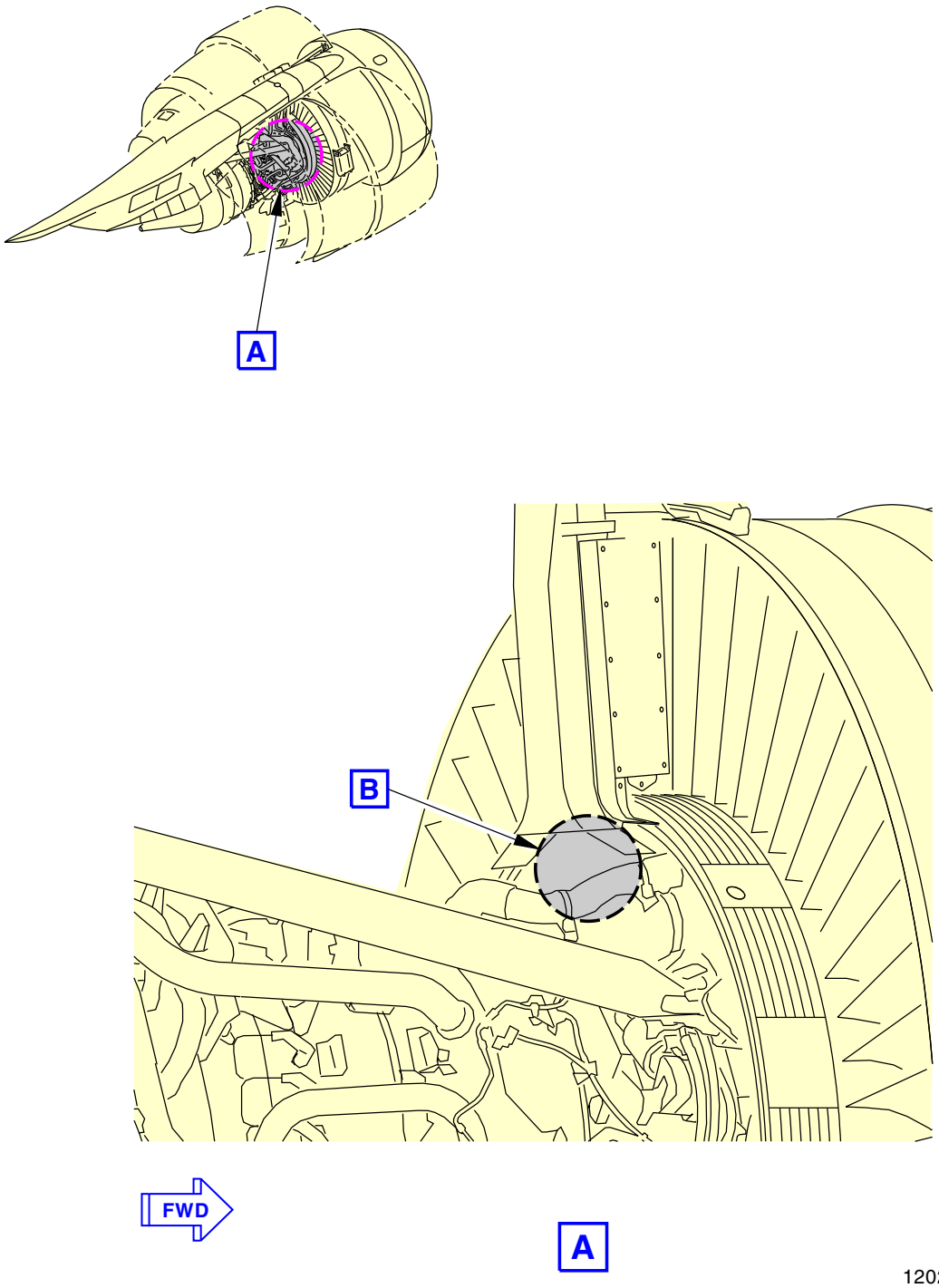
1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

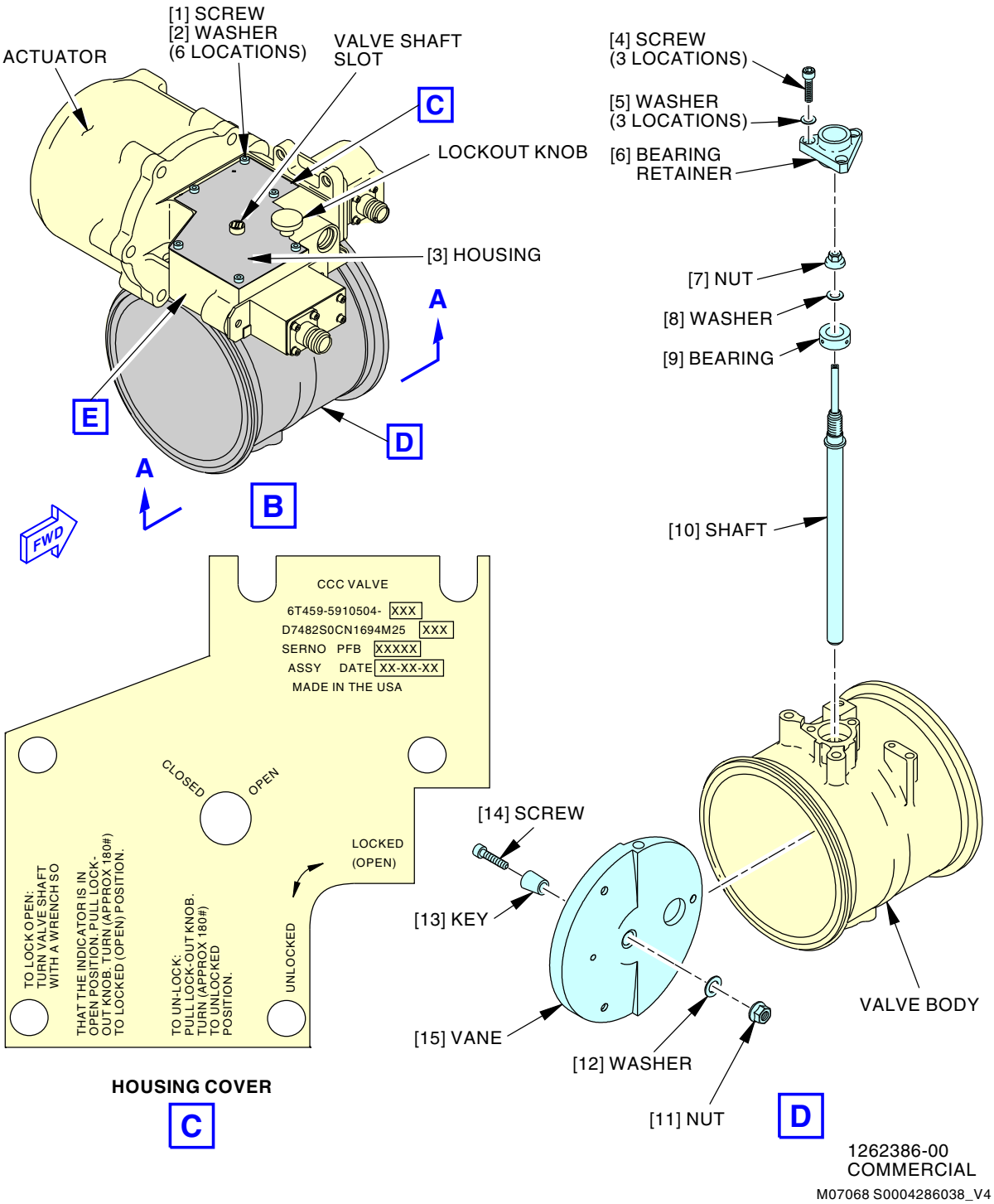
(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

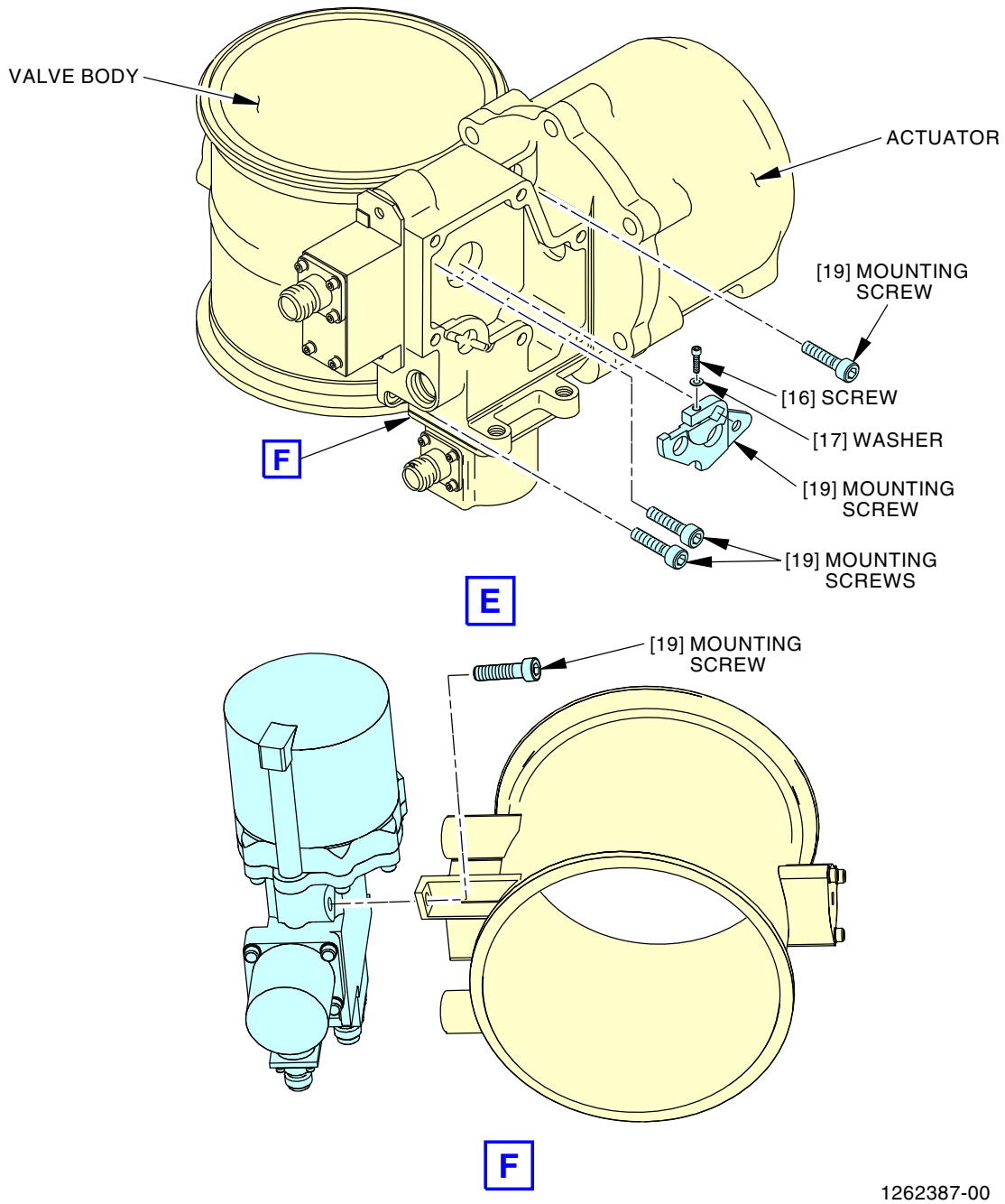
END OF TASK



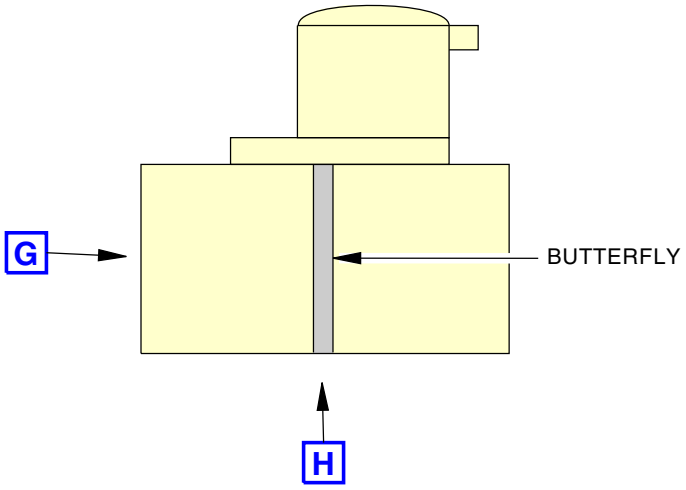
Core Compartment Cooling Valve Deactivation
Figure 902/75-00-00-990-801-H01 (Sheet 1 of 4)



Core Compartment Cooling Valve Deactivation
Figure 902/75-00-00-990-801-H01 (Sheet 2 of 4)



Core Compartment Cooling Valve Deactivation
Figure 902/75-00-00-990-801-H01 (Sheet 3 of 4)



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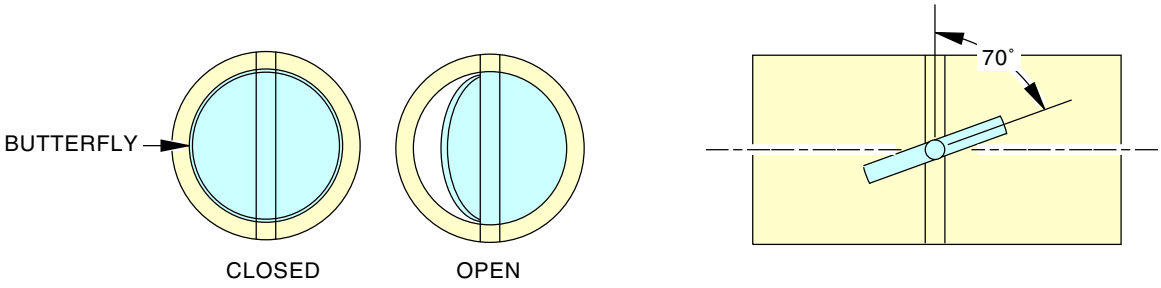

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Core Compartment Cooling Valve Deactivation
Figure 902/75-00-00-990-801-H01 (Sheet 4 of 4)

TASK 75-00-00-440-801-H01

5. MMEL 75-23-2 (DDG) Restoration - Core Compartment Cooling Valve Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Core Compartment Cooling Valve Inoperative.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-00-00-010-002-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-00-00-440-001-H01

(2) Pull the lock-out knob outward, and turn it counterclockwise to the unlocked position (Figure 902).

SUBTASK 75-00-00-740-001-H01

(3) Go to the Mat and find the EICAS status message, ENG CCC VALVE L or R (FIM EICAS MESSAGE LIST).

(a) Find the fault code and the correlated maintenance message numbers on the MAT.

SUBTASK 75-00-00-810-001-H01

(4) Go to the Fault Code Index in the FIM and find the fault code (the first two digits of the fault code are the FIM chapter).

(a) For each correlated maintenance message, find the maintenance message number to the right side of the fault code.

(b) Find the task number on the same line as the maintenance message number.

SUBTASK 75-00-00-810-002-H01

(5) Go to the task in the FIM and do the steps in the task.

SUBTASK 75-00-00-410-002-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(6) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

END OF TASK

TASK 75-00-00-040-803-H01

6. MMEL 75-24-1 (DDG) Preparation - Low Pressure Turbine Active Clearance Control Valve Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Low Pressure Turbine Active Clearance Control Valve Inoperative.

(2) EICAS Status Messages

(a) ENG LPTACC VALVE L

(b) ENG LPTACC VALVE R

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
75-24-01-000-801-H01	Low Pressure Turbine Active Clearance Control (LPTACC) Valve Removal (P/B 401)
75-24-01-400-801-H01	Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-00-00-010-005-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-00-00-860-002-H01

(2) Make sure the LPTACC valve is in the closed position (Figure 903).

(a) If the LPTACC valve is not in the closed position, turn the shaft at the top of the valve in the clockwise direction until the position indicator points to the closed position.

(b) Do the steps that follow:

1) If you can not turn the valve shaft until the position indicator points to the closed position, or

2) If you can not pull the locknut knob outward and turn it to the locked position.

a) Do this task: Low Pressure Turbine Active Clearance Control (LPTACC) Valve Removal, TASK 75-24-01-000-801-H01.

b) Make sure that the LPTACC valve is open no more than 15 degrees

NOTE: You can push on the valve butterfly and turn the valve shaft to close the LPTACC valve.

c) Do this task: Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation, TASK 75-24-01-400-801-H01.

SUBTASK 75-00-00-040-003-H01

(3) Pull the lock-out knob outward and turn it clockwise to the locked position.

SUBTASK 75-00-00-410-005-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

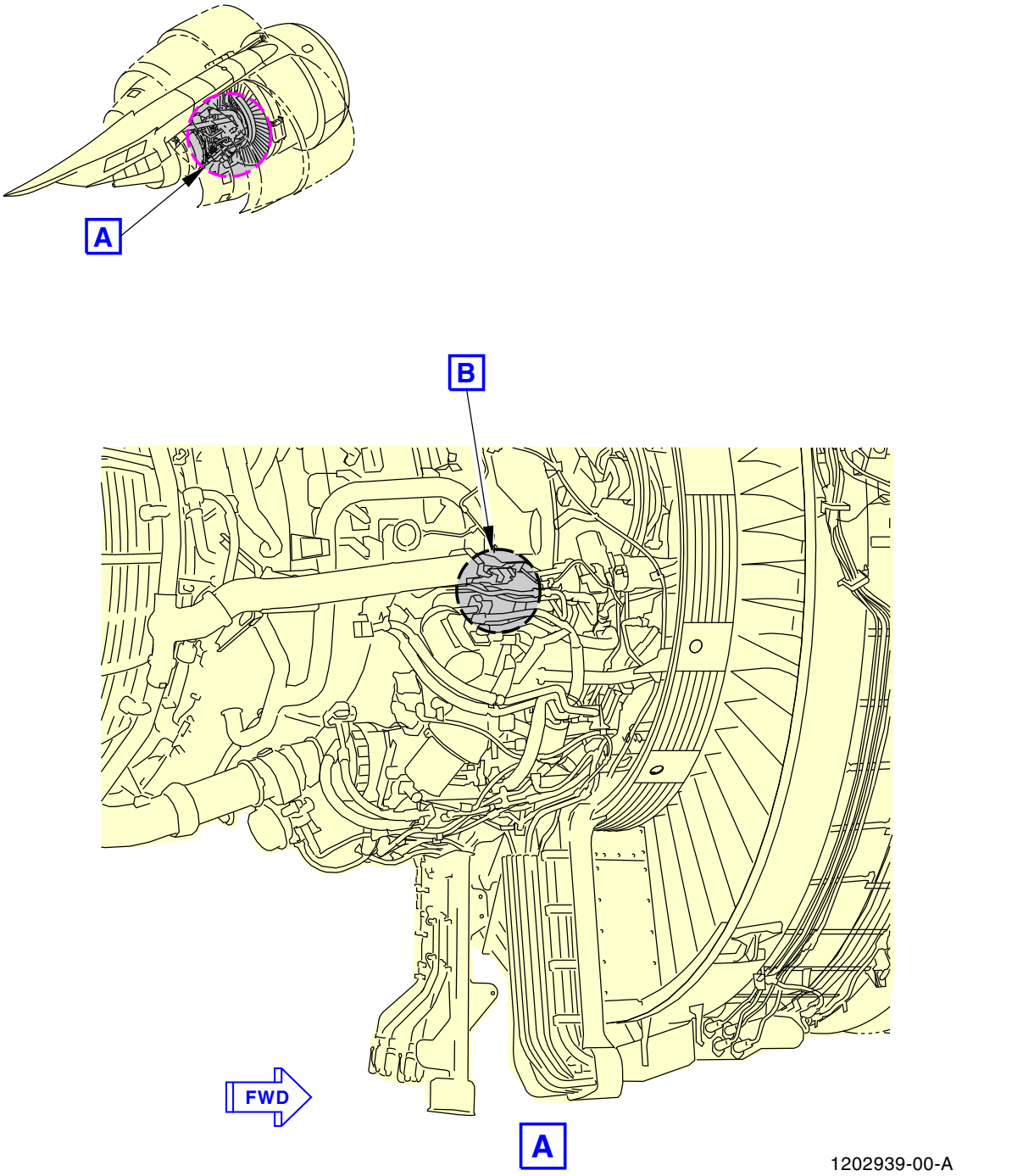
1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

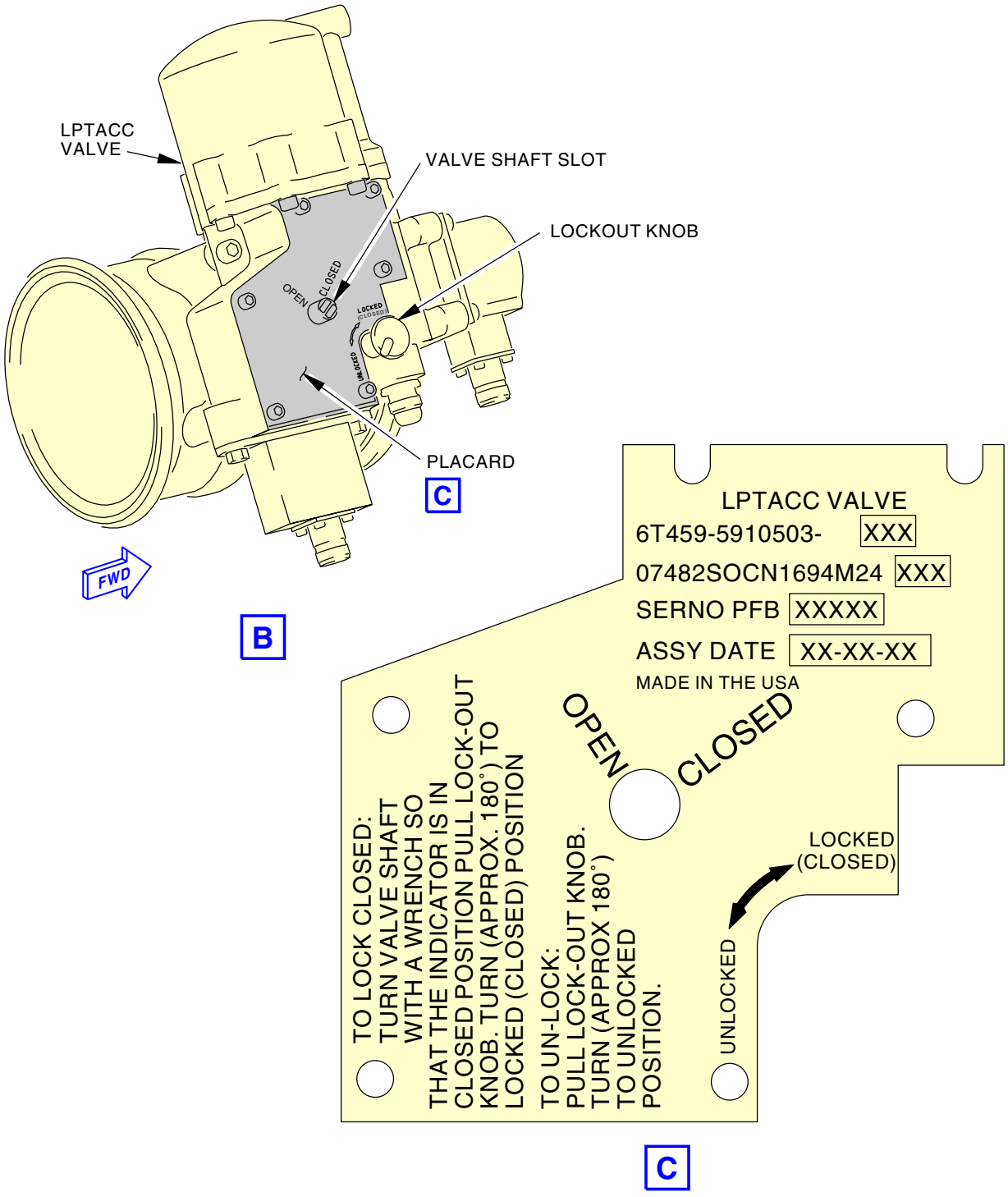
(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

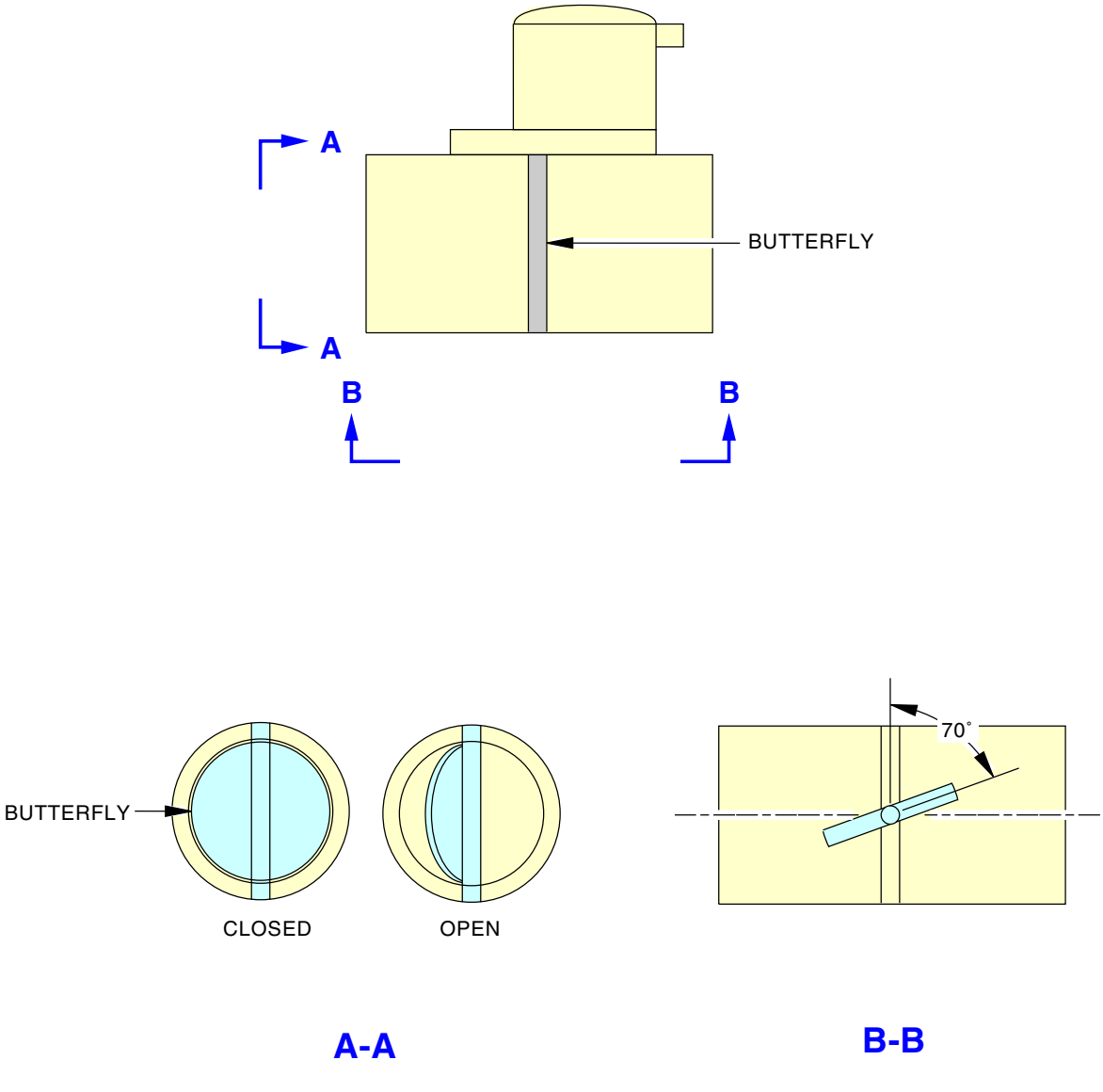
——— END OF TASK ———



LPTACC Valve Deactivation
Figure 903/75-00-00-990-803-H01 (Sheet 1 of 3)



LPTACC Valve Deactivation
Figure 903/75-00-00-990-803-H01 (Sheet 2 of 3)



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LPTACC Valve Deactivation
Figure 903/75-00-00-990-803-H01 (Sheet 3 of 3)

TASK 75-00-00-440-803-H01

7. MMEL 75-24-1 (DDG) Restoration - Low Pressure Turbine Active Clearance Control Valve Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Low Pressure Turbine Active Clearance Control Valve Inoperative.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-00-00-010-006-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-00-00-440-003-H01

(2) Pull the lock-out knob outward, turn it counterclockwise to the unlocked position, and release the knob (Figure 903).

SUBTASK 75-00-00-740-003-H01

(3) Go to the Mat and find the EICAS status message, ENG LPTACC VALVE L or R (FIM EICAS MESSAGE LIST).

(a) Find the fault code and the correlated maintenance message numbers on the MAT.

SUBTASK 75-00-00-810-005-H01

(4) Go to the Fault Code Index in the FIM and find the fault code (the first two digits of the fault code are the FIM chapter).

(a) For each correlated maintenance message, find the maintenance message number to the right side of the fault code.

(b) Find the task number on the same line as the maintenance message number.

SUBTASK 75-00-00-810-006-H01

(5) Go to the task in the FIM and do the steps in the task.

SUBTASK 75-00-00-410-006-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(6) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———

TASK 75-00-00-040-805-H01

8. MMEL 75-33-1 (DDG) Preparation - Start/Transient Bleed Valve Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Start/Transient Bleed (S/TB) Valve Inoperative.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-00-00-010-008-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(e) For the left thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

SUBTASK 75-00-00-210-002-H01

(2) Make sure the S/TB valve is in the closed position.

(a) Look at the position valve indicator to see if the valve is in the open or closed position.

NOTE: The indicator extends through a hole in the placard, which is located on the valve actuator

(b) If the S/TB valve is not in the closed position, slowly turn the valve shaft hex clockwise until the position indicator shows that the valve is closed.

NOTE: The valve shaft hex is located between the valve actuator and the valve body. Do not apply more than 200 pound-inches (22.6 Newton-meters) to turn the valve shaft hex.

SUBTASK 75-00-00-040-004-H01

(3) Lock the S/TB valve in the closed position:

(a) Remove the lockout pin from the stowed position.

NOTE: The lockout pin is located near the placard.

(b) Install the lockout pin into the locked position.

(c) Tighten the lockout pin to approximately 30.0 pound-inches (3.4 Newton-meters).

SUBTASK 75-00-00-410-007-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Do these tasks in sequence to safely close the left thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———

TASK 75-00-00-440-805-H01

9. MMEL 75-33-1 (DDG) Restoration - Start/Transient Bleed Valves Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Start/Transient Bleed (S/TB) Valve Inoperative.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-00-00-010-007-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(e) For the left thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

SUBTASK 75-00-00-440-004-H01

(2) Remove the lockout pin from the locked position.

NOTE: The lockout pin is located near the placard.

(a) Put the lockout pin in the stowed position.

(b) Tighten the lockout pin to approximately 30 pound-inches (3.4 Newton-meters).

SUBTASK 75-00-00-740-004-H01

(3) Go to the Mat and find the EICAS status message, ENG START BLEED L or R (FIM EICAS MESSAGE LIST).

(a) Find the fault code and the correlated maintenance message numbers on the MAT.

SUBTASK 75-00-00-810-007-H01

(4) Go to the Fault Code Index in the FIM and find the fault code (the first two digits of the fault code are the FIM chapter).

(a) For each correlated maintenance message, find the maintenance message number to the right side of the fault code.

(b) Find the task number on the same line as the maintenance message number.

SUBTASK 75-00-00-810-008-H01

(5) Go to the task in the FIM and do the steps in the task.

SUBTASK 75-00-00-410-008-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(6) Do these tasks in sequence to safely close the left thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———

ENGINE COOLING SYSTEM - INSPECTION/CHECK

TASK 75-20-00-210-801-H01

1. Engine Cooling System Inspection

A. General

(1) This procedure provides the instructions on how to examine the engine cooling system.

(2) This inspection is applicable to the PRE GE SB 75-0022 and POST GE SB 75-0022 where the CCC valve is disable and not removed. The CCC valve and the CCC feedback switch can be deleted by GE SB 75-0022.

(3) This procedure will examine the parts that follow:

(a) The core compartment cooling valve (referred to as the CCC valve)

(b) The CCC valve feedback switch

(c) The low pressure turbine active clearance control valve (referred to as the LPTACC valve)

(d) The LPTACC valve feedback switch

(e) The high pressure turbine active clearance control valve (referred to as the HPTACC valve)

(f) The low pressure compressor anti-ice valve (referred to as the LPCAI valve).

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
75-21-01-000-801-H01	Low Pressure Compressor Anti-Ice (LPCAI) Valve Removal (P/B 401)
75-21-01-400-801-H01	Low Pressure Compressor Anti-Ice (LPCAI) Valve Installation (P/B 401)
75-23-01-000-801-H01	Core Compartment Cooling (CCC) Valve Removal (P/B 401)
75-23-01-400-801-H01	Core Compartment Cooling (CCC) Valve Installation (P/B 401)
75-23-02-000-801-H01	Core Compartment Cooling (CCC) Valve Feedback Switch Removal (P/B 401)
75-23-02-400-801-H01	Core Compartment Cooling (CCC) Valve Feedback Switch Installation (P/B 401)
75-24-01-000-801-H01	Low Pressure Turbine Active Clearance Control (LPTACC) Valve Removal (P/B 401)
75-24-01-400-801-H01	Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation (P/B 401)
75-24-02-000-801-H01	Low Pressure Turbine Active Clearance Control (LPTACC) Valve Feedback Switch Removal (P/B 401)
75-24-02-400-801-H01	Low Pressure Turbine Active Clearance Control (LPTACC) Valve Feedback Switch Installation (P/B 401)
75-24-04-000-801-H01	High Pressure Turbine Active Clearance Control (HPTACC) Valve Removal (P/B 401)

(Continued)

Reference	Title
75-24-04-400-801-H01	High Pressure Turbine Active Clearance Control (HPTACC) Valve Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Engine Cooling System Inspection

SUBTASK 75-20-00-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-20-00-210-001-H01

(2) Examine the CCC valve:

NOTE: The CCC valve can be deleted by GE SB 75-0022.

(a) Look for signs of air leaks by the E-seals.

1) If you see signs of air leaks, replace the E-seals (TASK 75-23-01-000-801-H01 and TASK 75-23-01-400-801-H01).

(b) Look for cracks in the CCC valve.

1) If you see cracks, replace the CCC valve (TASK 75-23-01-000-801-H01 and TASK 75-23-01-400-801-H01).

(c) Look for dents in the CCC valve.

1) If you see dents, replace the CCC valve (TASK 75-23-01-000-801-H01 and TASK 75-23-01-400-801-H01).

(d) Make sure the electrical connectors are not loose.

SUBTASK 75-20-00-210-002-H01

(3) Examine the CCC valve feedback switch:

NOTE: The CCC valve feedback switch can be deleted by GE SB 75-0022

(a) Look for cracks in the mounting flange of the feedback switch.

1) If you see cracks, replace the CCC valve feedback switch (TASK 75-23-02-000-801-H01 and TASK 75-23-02-400-801-H01).

(b) Make sure the electrical connector is not loose.

SUBTASK 75-20-00-210-003-H01

(4) Examine the LPTACC valve:

(a) Look for signs of air leaks from the E-seals.

1) If you see signs of air leaks, replace the E-seals (TASK 75-24-01-000-801-H01 and TASK 75-24-01-400-801-H01).

(b) Look for cracks in the LPTACC valve.

1) If you see cracks, replace the LPTACC valve (TASK 75-24-01-000-801-H01 and TASK 75-24-01-400-801-H01).

(c) Look for dents in the LPTACC valve.

1) If you see dents, replace the LPTACC valve (TASK 75-24-01-000-801-H01 and TASK 75-24-01-400-801-H01).

(d) Make sure the electrical connector is not loose.

SUBTASK 75-20-00-210-004-H01

(5) Examine the LPTACC valve feedback switch:

(a) Look for cracks in the mounting flange of the feedback switch.

1) If you see cracks, replace the LPTACC valve feedback switch (TASK 75-24-02-000-801-H01 and TASK 75-24-02-400-801-H01).

(b) Make sure the electrical connector is not loose.

SUBTASK 75-20-00-210-005-H01

(6) Examine the HPTACC valve:

(a) Look for signs of fuel leaks.

1) If you see signs of fuel leaks, replace the seals (TASK 75-24-04-000-801-H01 and TASK 75-24-04-400-801-H01).

(b) Look for signs of air leaks from the E-seals.

1) If you see signs of air leaks, replace the E-seals (TASK 75-24-04-000-801-H01 and TASK 75-24-04-400-801-H01).

(c) Look for cracks in the HPTACC valve.

1) If you see cracks, replace the HPTACC valve (TASK 75-24-04-000-801-H01 and TASK 75-24-04-400-801-H01).

(d) Look for dents in the HPTACC valve.

1) If you see dents, replace the HPTACC valve (TASK 75-24-04-000-801-H01 and TASK 75-24-04-400-801-H01).

(e) Make sure the electrical connector is not loose.

SUBTASK 75-20-00-210-006-H01

(7) Examine the LPCAI valve:

(a) Look for signs of fuel leaks.

1) If you see signs of fuel leaks, replace the seals (TASK 75-21-01-000-801-H01 and TASK 75-21-01-400-801-H01).

(b) Look for signs of air leaks from the E-seals.

1) If you see signs of air leaks, replace the E-seals (TASK 75-21-01-000-801-H01 and TASK 75-21-01-400-801-H01).

(c) Look for cracks in the LPCAI valve.

1) If you see cracks, replace the LPCAI valve (TASK 75-21-01-000-801-H01 and TASK 75-21-01-400-801-H01).

(d) Look for dents in the LPCAI valve.

1) If you see dents, replace the LPCAI valve (TASK 75-21-01-000-801-H01 and TASK 75-21-01-400-801-H01).

(e) Make sure the electrical connector is not loose.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 75-20-00-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———

LOW PRESSURE COMPRESSOR ANTI-ICE (LPCAI) VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the low pressure compressor anti-ice (LPCAI) valve

(2) The installation of the low pressure compressor anti-ice (LPCAI) valve.

TASK 75-21-01-000-801-H01

2. Low Pressure Compressor Anti-Ice (LPCAI) Valve Removal

A. General

(1) This task is the removal procedure of the low pressure compressor anti-ice valve (referred to as the LPCAI valve).

(2) The LPCAI valve is at the 12:00 o'clock position on the engine fan booster case.

(3) You must open the right and left thrust reverser to get access to the LPCAI valve.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
30-21-06-000-804-001	Engine Anti-Ice Duct Removal (P/B 401)
70-00-04-000-802-H01	E, C, and W Metal Seal Removal (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
75-23-01-000-801-H01	Core Compartment Cooling (CCC) Valve Removal (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the LPCAI Valve Removal

SUBTASK 75-21-01-860-005-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-21-01-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-21-01-860-001-H01

(3) Do these steps to make sure the fuel control valve and the spar valve stay in the closed position:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

1) Install a DO-NOT-OPERATE tag on the FUEL CONTROL switch.

(b) Push the STAT switch on the display select panel of the glareshield (P55).

1) Make sure you do not see the applicable ENG FUEL VALVE L(R) or FUEL SPAR VALVE L(R) status messages.

(c) For the applicable engines, open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

G. Low Pressure Compressor Anti-Ice (LPCAI) Valve Removal

SUBTASK 75-21-01-010-002-H01

(1) Do this task: Core Compartment Cooling (CCC) Valve Removal, TASK 75-23-01-000-801-H01.

SUBTASK 75-21-01-010-003-H01

(2) Remove the stub tube [32] from the air manifold [30] as follows Figure 402:

(a) Loosen the hose clamp [31] and remove the stub tube [32] from the air manifold [30].

SUBTASK 75-21-01-010-004-H01

(3) Do this task: Engine Anti-Ice Duct Removal, TASK 30-21-06-000-804-001.

SUBTASK 75-21-01-020-001-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(4) Use teflon-jawed pliers, STD-664 to disconnect the valve B electrical connector [9] and the valve A electrical connector [10] from the LPCAI valve [2] (Figure 401).

SUBTASK 75-21-01-020-002-H01

(5) Disconnect the fuel tube [3] from the LPCAI valve [2].

SUBTASK 75-21-01-030-001-H01

(6) Disconnect the fuel tube [4] from the LPCAI valve [2].

SUBTASK 75-21-01-030-002-H01

(7) Disconnect the fuel tube [6] from the LPCAI valve [2].

SUBTASK 75-21-01-020-003-H01

(8) Remove the LPCAI valve [2] from the forward anti-ice tube [1] and aft anti-ice tube [5] as follows:

(a) Remove the V-band clamp [21], V-band clamp [17] and V-band clamp [18].

(b) Remove the three bolts [12] that attach the forward support bracket [11] to the engine.

1) Remove the forward anti-ice tube [1] with the forward support bracket [11] still attached.

(c) Remove the three bolts [8] from the LPCAI valve [2] and remove the LPCAI valve [2]

(d) Remove the E-seal [22] from the forward anti-ice tube [1].

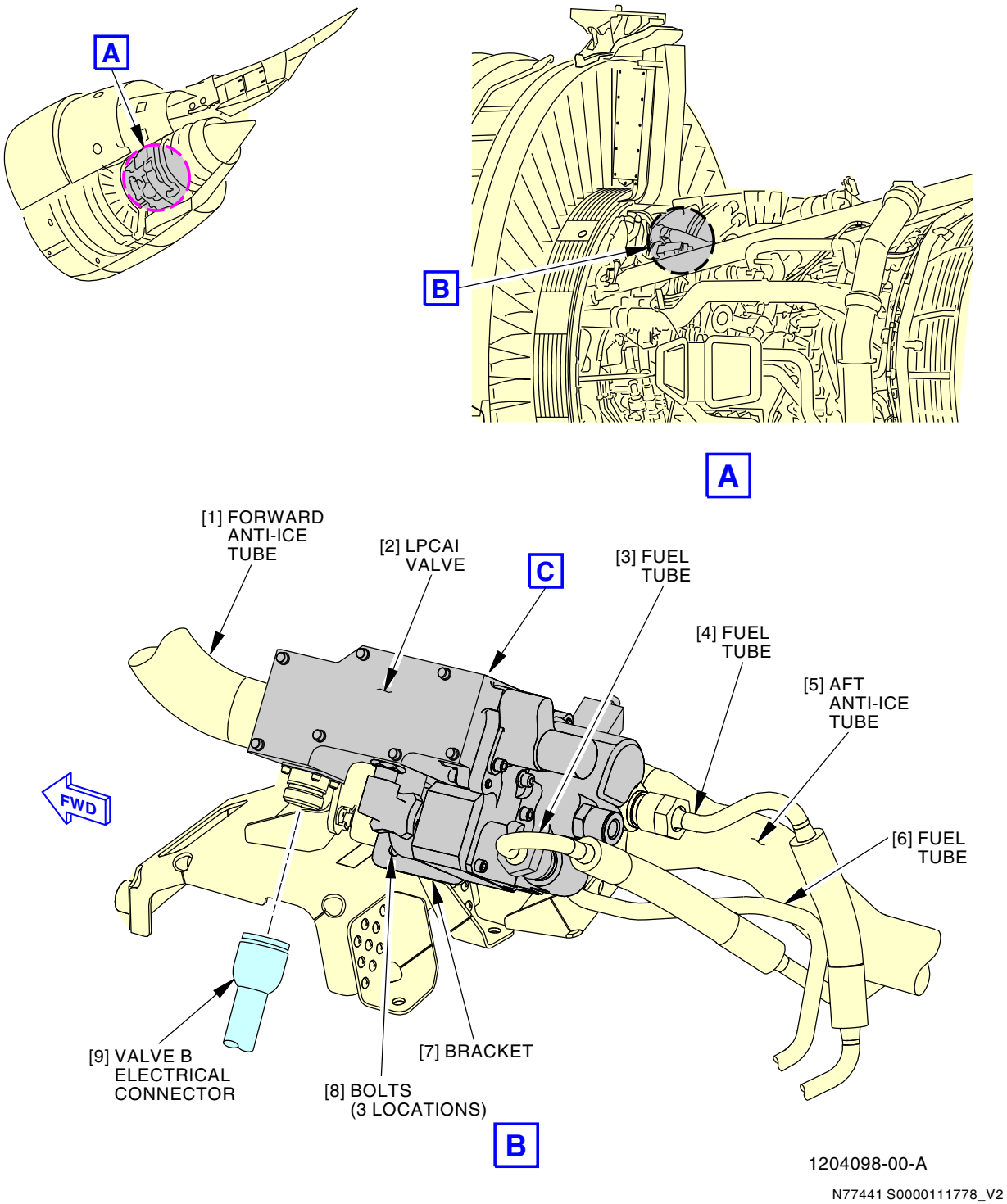
(e) Remove the E-Seal [16] and the E-Seal [19] from the LPCAI valve [2].

(f) Examine the E-seal [22], the E-Seal [16] and the E-Seal [19] for damage (TASK 70-00-04-000-802-H01).

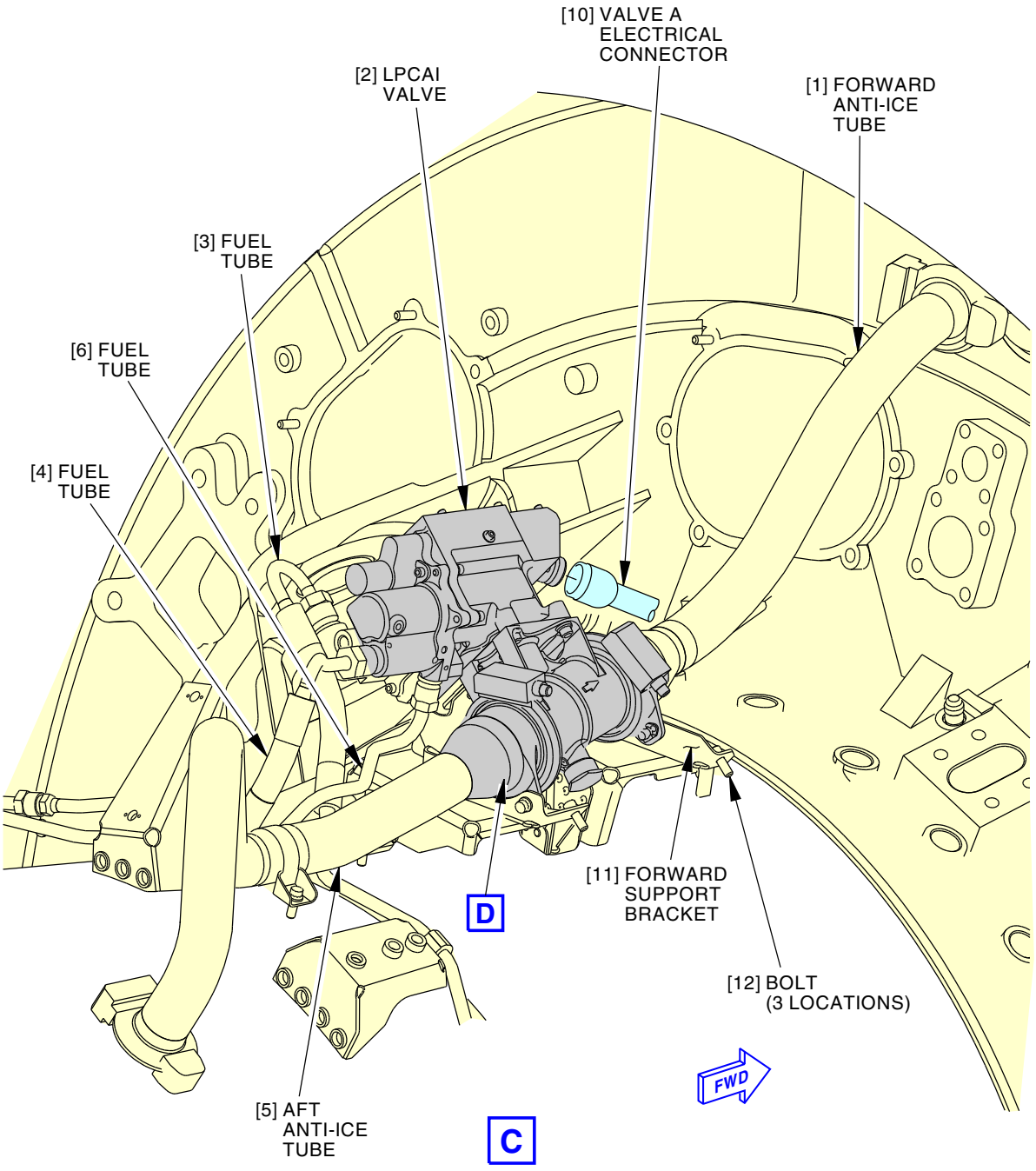
1) If you do not see damage, keep the E-seal [22], the E-Seal [16] and the E-Seal [19] for the installation task.

(g) Put the protective covers on the valve, ducts, tubes, fittings, electrical connectors, and the electrical receptacles.

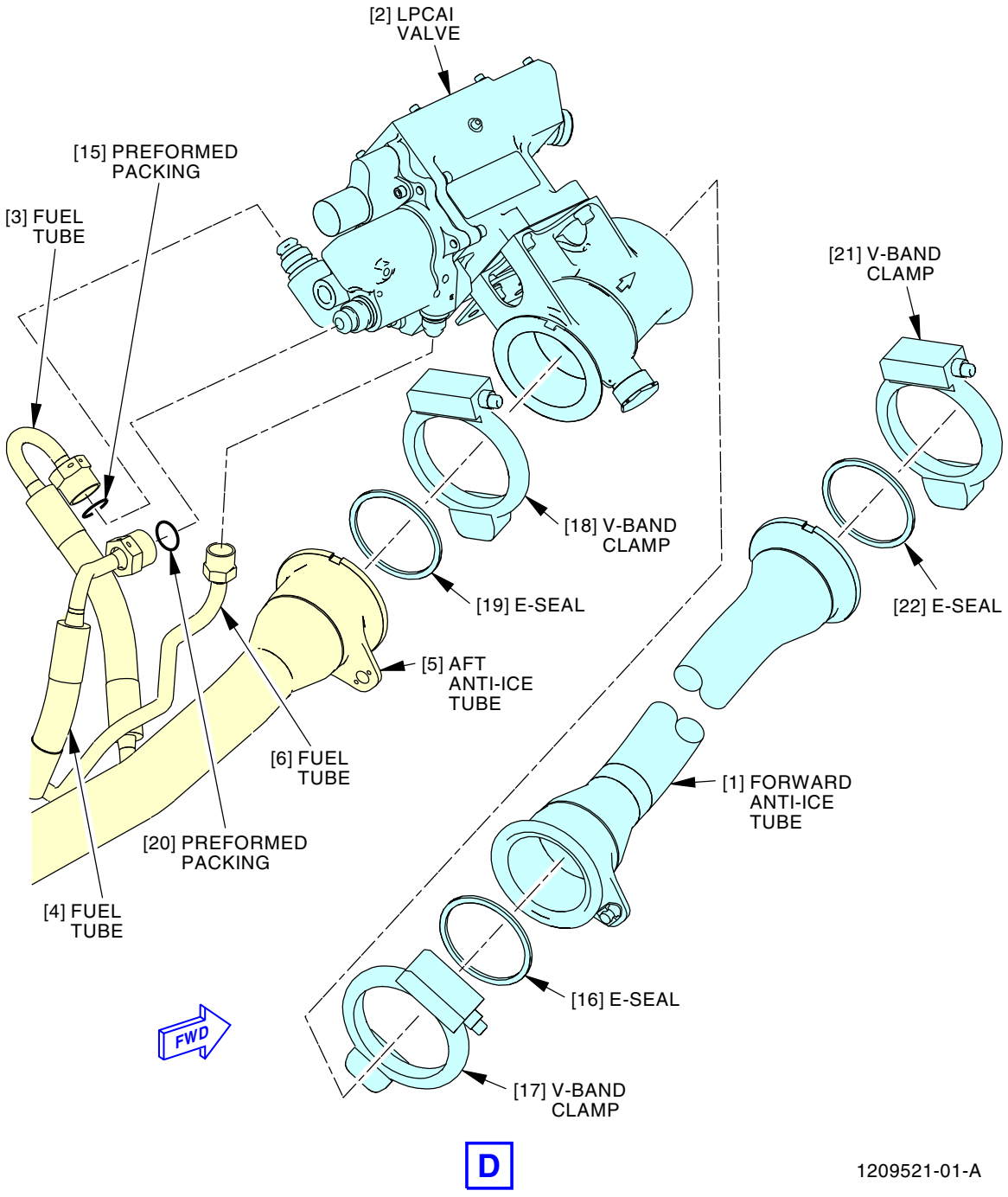
——— END OF TASK ———



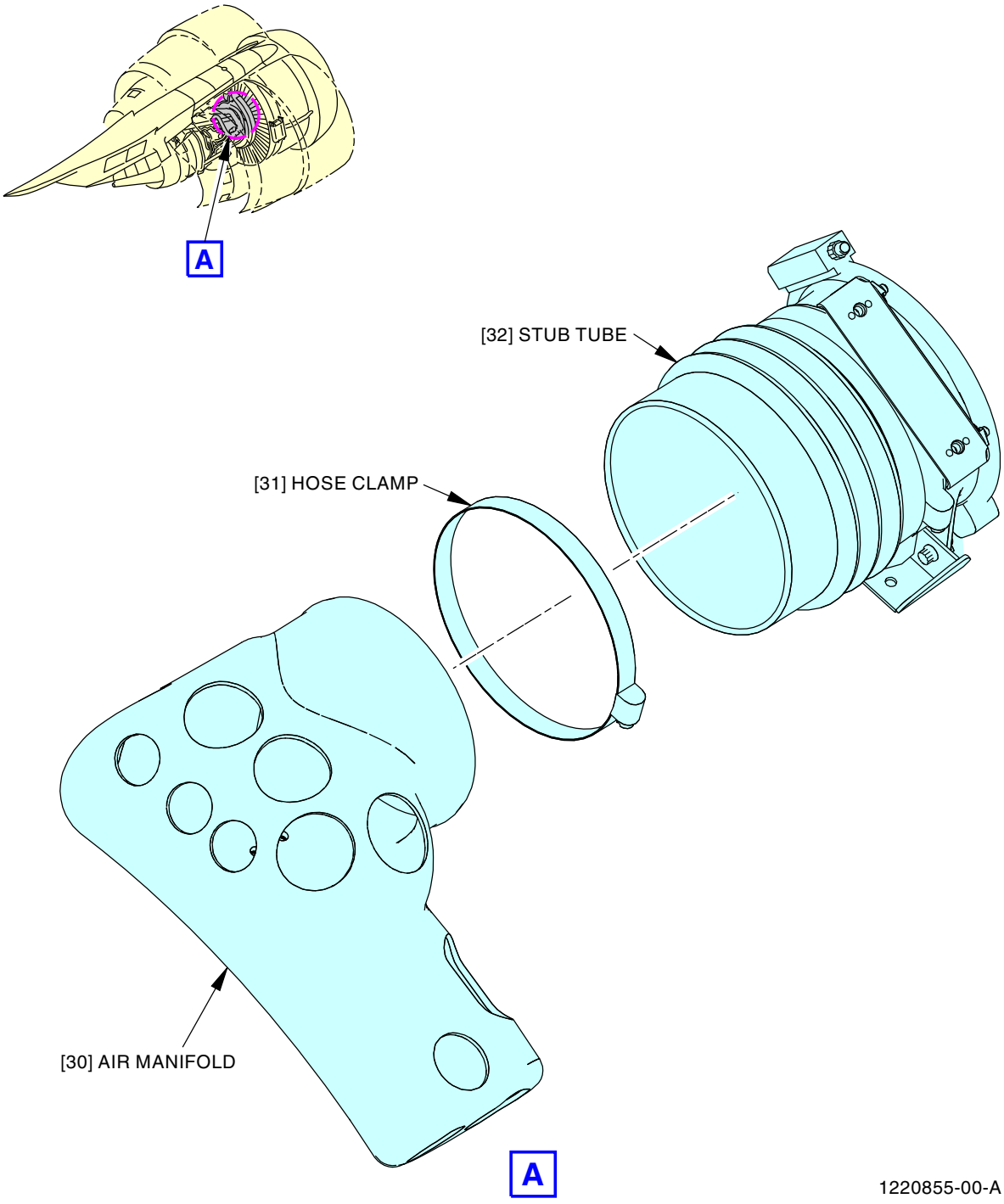
LPC Anti-Ice Valve Installation
Figure 401/75-21-01-990-801-H01 (Sheet 1 of 3)



LPC Anti-Ice Valve Installation
Figure 401/75-21-01-990-801-H01 (Sheet 2 of 3)



LPC Anti-Ice Valve Installation
Figure 401/75-21-01-990-801-H01 (Sheet 3 of 3)



Stub Tube Installation
Figure 402/75-21-01-990-802-H01

TASK 75-21-01-400-801-H01

3. Low Pressure Compressor Anti-Ice (LPCAI) Valve Installation

A. General

(1) This task is the installation procedure for the booster anti-ice valve (referred to as the LPCAI valve).

(2) The LPCAI valve is located at the 12:00 o'clock position on the engine fan booster case.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
30-21-06-400-804-001	Engine Anti-Ice Duct Installation (P/B 401)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
75-23-01-400-801-H01	Core Compartment Cooling (CCC) Valve Installation (P/B 401)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Consumable Materials

Reference	Description	Specification
D00231 [OMat 1011]	Oil - Engine Lubricating, Synthetic (AMM 12-13-01/301)	OMat 1011 / MIL-PRF-23699

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Low Pressure Compressor Anti-Ice (LPCAI) Valve Installation

SUBTASK 75-21-01-420-001-H01

(1) Remove the protective covers from all the ducts, valve, tubes, fittings, electrical connectors, and the electrical receptacles.

SUBTASK 75-21-01-420-002-H01

(2) Attach the LPCAI valve [2] to the aft anti-ice tube [5] and the forward anti-ice tube [1] as follows (Figure 401):

(a) Install the E-seal [22] on the forward anti-ice tube [1].

(b) Put the forward anti-ice tube [1] in its position.

(c) Loosely put the V-band clamp [21] in its position.

NOTE: Do not tighten the V-band clamp at this time.

(d) Install the E-Seal [16] and the E-Seal [19] on the LPCAI valve [2].

(e) Loosely put the V-band clamp [17] and the V-band clamp [18] on the LPCAI valve [2].

(f) Put the LPCAI valve [2] in position between the forward anti-ice tube [1] and the aft anti-ice tube [5].

1) Hold the LPCAI valve [2] in position and put the V-band clamp [17] on the forward anti-ice tube [1] and the LPCAI valve [2].

NOTE: Do not tighten the V-band clamp at this time.

2) Put the V-band clamp [18] on the aft anti-ice tube [5] and the LPCAI valve [2].

NOTE: Do not tighten the V-band clamp at this time.

(g) Install the three bolts [12] that attach the forward support bracket [11] to the engine.

1) Tighten the bolts [12] to 110.0-120.0 Pound-inches (12.4-13.6 Newton-meters).

(h) Install the three bolts [8] that attaches the LPCAI valve [2] to the bracket [7].

1) Tighten the bolts [8] to 110.0-120.0 Pound-inches (12.4-13.6 Newton-meters).

(i) Tighten the V-band clamp [21], the V-band clamp [17], and the V-band clamp [18] to 110.0-120.0 Pound-inches (12.4-13.6 Newton-meters) (TASK 70-51-00-910-801-H01).

SUBTASK 75-21-01-420-003-H01

(3) Connect the fuel tube [6] to the LPCAI valve [2] as follows:

(a) Connect the fuel tube [6] B-nut to the LPCAI valve [2].

1) Tighten the fuel tube [6] B-nut to 262.0-308.0 Pound-inches (29.6-34.8 Newton-meters).

SUBTASK 75-21-01-420-004-H01

(4) Connect the fuel tube [4] to the LPCAI valve [2] as follows:

(a) Examine the preformed packing [20] for damage.

1) If you found damaged, replace with a new preformed packing [20].

(b) Lubricate the preformed packing [20] with engine lubricating oil, D00231 [OMat 1011].

(c) Install the preformed packing [20] in the fuel tube [4] fitting.

(d) Connect the fuel tube [4] B-nut to the LPCAI valve [2].

1) Tighten fuel tube [4] B-nut to 460.0-540.0 Pound-inches (52.0-61.0 Newton-meters).

2) Safety cable the fuel tube [4] B-nut.

SUBTASK 75-21-01-420-006-H01

(5) Connect the fuel tube [3] to the LPCAI valve [2] as follows:

(a) Examine the preformed packing [15] for damage.

1) If you found damaged, replace with a new preformed packing [15].

(b) Lubricate the preformed packing [15] with engine lubricating oil, D00231 [OMat 1011].

(c) Install preformed packing [15] in the fuel tube [3] fitting.

(d) Connect the fuel tube [3] B-nut to the LPCAI valve [2].

1) Tighten the fuel tube [3] B-nut to 460.0-540.0 Pound-inches (52.0-61.0 Newton-meters).

2) Safety cable the fuel tube [3] B-nut.

SUBTASK 75-21-01-420-005-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(6) Use soft jawed pliers to connect the valve B electrical connector [9] and the valve A electrical connector [10] to the LPCAI valve [2] (TASK 70-00-01-400-807-H01).

SUBTASK 75-21-01-410-002-H01

(7) Do this task Engine Anti-Ice Duct Installation, TASK 30-21-06-400-804-001.

SUBTASK 75-21-01-410-003-H01

(8) Install the stub tube [32] you removed to get access the LPCAI valve [2] as follows Figure 402:

(a) Position the stub tube [32] on the air manifold [30]

1) Tighten the hose clamp [31] to 32.0-38.0 Pound inches (3.61-4.29 Newton-meters).

SUBTASK 75-21-01-410-004-H01

(9) Do this task: Core Compartment Cooling (CCC) Valve Installation, TASK 75-23-01-400-801-H01.

G. Put the Airplane Back to its Usual Condition

SUBTASK 75-21-01-860-002-H01

(1) Do these steps to put the fuel control valve and the spar valve to the serviceable condition:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

(b) For the applicable engine, remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

SUBTASK 75-21-01-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-21-01-860-004-H01

(3) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

H. Low Pressure Compressor Anti-Ice (LPCAI) Valve Test

SUBTASK 75-21-01-790-001-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

LOW PRESSURE COMPRESSOR ANTI-ICE (LPCAI) SHUT OFF VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks

(1) A removal of the low pressure compressor anti-ice shut off valve.

(2) An installation of the low pressure compressor anti-ice shut off valve.

TASK 75-21-02-000-801-H01

2. Low Pressure Compressor Anti-Ice (LPCAI) Shut Off Valve Removal

A. General

(1) This task provides the removal steps for the low pressure compressor anti-ice shut off valve (referred to as the LPCAI shut off valve).

(2) The LPCAI shut off valve is at the 1:00 position on the engine HPC stator extension case.

(3) You must open the right and left thrust reverser to get access to the LPCAI shut off valve.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-04-000-802-H01	E, C, and W Metal Seal Removal (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Prepare for the LPCAI Shut Off Valve Removal

SUBTASK 75-21-02-860-001-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE

(Continued)

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-21-02-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Low Pressure Compressor Anti-Ice (LPCAI) Shut Off Valve Removal

SUBTASK 75-21-02-020-001-H01

(1) Remove the LPCAI shut off valve [4] as follows Figure 401:

(a) Remove the V-band clamp [3] and the V-band clamp [5] that attach the LPCAI shut off valve [4] to the engine HPC stator extension case and the air tube [1].

(b) Remove the LPCAI shut off valve [4].

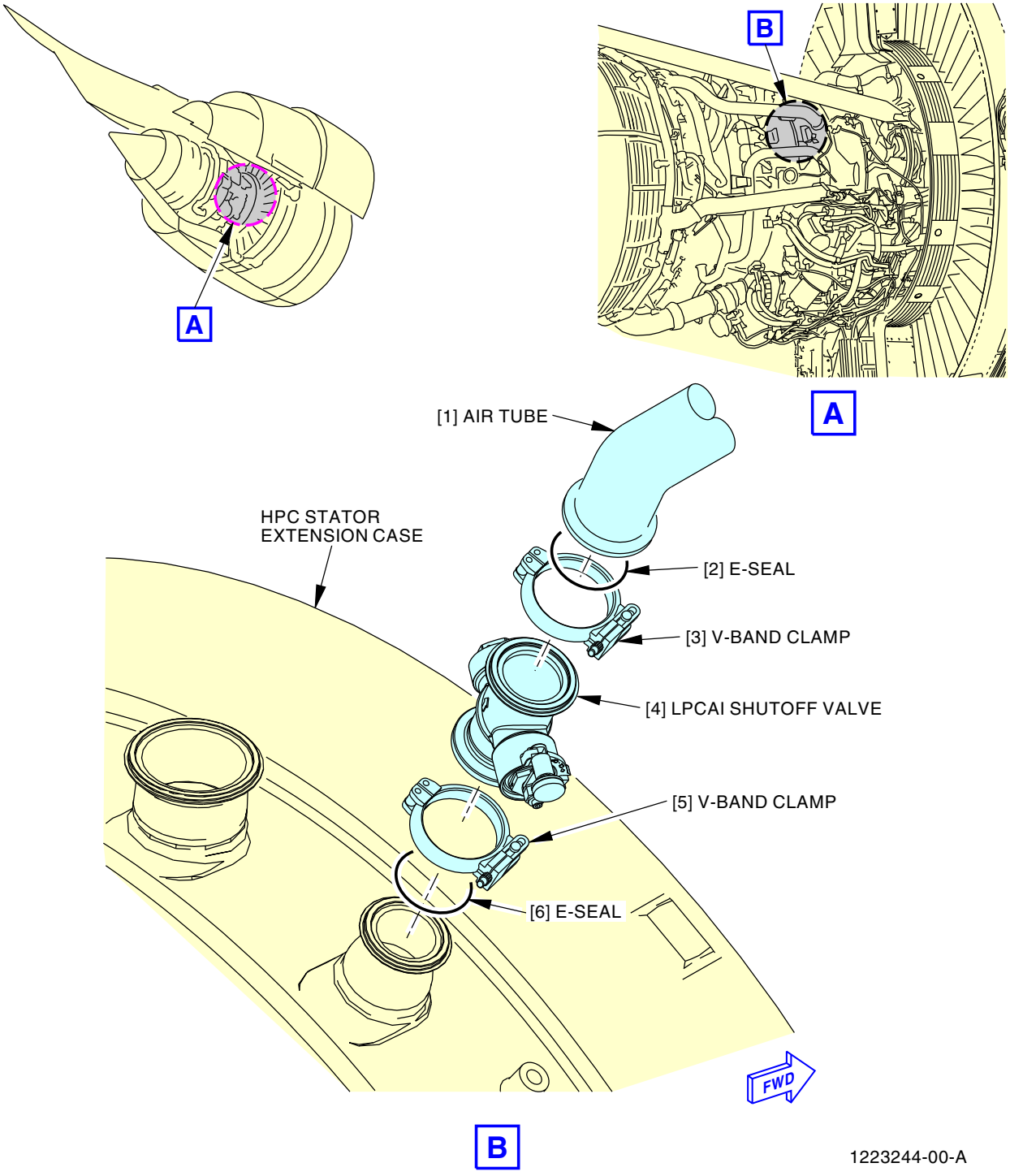
(c) Remove the E-Seal [2] and the E-Seal [6].

1) Do a visual check of the E-Seal [2] and the E-Seal [6] for damage (TASK 70-00-04-000-802-H01).

a) Keep the E-Seal [2] and the E-Seal [6] for the installation task if you do not see damage.

2) Put protective covers on the LPCAI shut off valve [4], the engine port, and the air tube [1].

——— END OF TASK ———



LPCAI Shut Off Valve Installation
Figure 401/75-21-02-990-801-H01

TASK 75-21-02-400-801-H01

3. Low Pressure Compressor Anti-Ice (LPCAI) Shut Off Valve Installation

A. General

(1) This task provides the installation steps for the low pressure compressor anti-ice shut off valve (referred to as the LPCAI shut off valve).

(2) The LPCAI shut off valve is at the 1:00 position on the engine HPC stator extension case.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Low Pressure Compressor Anti-Ice (LPCAI) Shut Off Valve Installation

SUBTASK 75-21-02-420-001-H01

(1) Remove the protective covers from the air tube [1], the LPCAI shut off valve [4] and the engine port.

SUBTASK 75-21-02-210-001-H01

(2) Make sure the locking pin on the LPCAI shut off valve [4] is in the open position.

SUBTASK 75-21-02-420-002-H01

(3) Attach the LPCAI shut off valve [4] to the air tube [1] and the HPC stator extension compressor case Figure 401.

(a) Install the E-Seal [2] and the E-Seal [6] on the air tube [1] and the LPCAI shut off valve [4].

(b) Put the LPCAI shut off valve [4] in position on the air tube [1] and the HPC stator extension compressor case.

(c) Hold the LPCAI shut off valve [4] and install the V-band clamp [5].

1) Push the retainer link over the opposite V-band half.

(d) Hold the LPCAI shut off valve [4] and install the V-band clamp [3].

1) Push the retainer link over the opposite V-band half.

(e) Hand tighten the nuts for the V-band clamp [3] and the V-band clamp [5].

(f) Tighten the nuts for the V-band clamp [3] and the V-band clamp [5] to 115-125 pound-inches (13.0-14.1 Newton-meters) (Instruction for Torque, TASK 70-51-00-910-801-H01).

F. Put the Airplane Back to its Usual Condition

SUBTASK 75-21-02-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-21-02-860-002-H01

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

END OF TASK

CORE COMPARTMENT COOLING (CCC) VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the core compartment cooling (CCC) valve

(2) An installation of the CCC valve.

TASK 75-23-01-000-801-H01

2. Core Compartment Cooling (CCC) Valve Removal

(Figure 401 (Sheet 1))

A. General

(1) This task provides the instructions on how to remove the Core Compartment Cooling (CCC) valve.

(2) You can use the applicable steps in this task to remove a deactivated CCC valve.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
36-11-01-000-806-004	Engine Duct Removal (P/B 401)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-00-04-000-802-H01	E, C, and W Metal Seal Removal (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
G50650 [C10-071]	Wire - Safety, 0.020 or 0.032 inch (0.508 or 0.813 mm) Diameter	SAE AS5685, AMS 5687, AMS 5689, AMS 5690
G51113 [C10-143]	Kit - Safety Cable Assembly	

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Prepare for the CCC Valve Removal

SUBTASK 75-23-01-010-004-H01

(1) Remove the HP/IP Manifold (TASK 36-11-01-000-806-004).

SUBTASK 75-23-01-860-002-H01

(2) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-23-01-010-001-H02

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(3) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

H. Core Compartment Cooling Valve Removal

SUBTASK 75-23-01-020-007-H01

(1) Remove the bolt [25] from the retaining strap [24] that attaches the air duct [15] to the support bracket [1].

SUBTASK 75-23-01-020-008-H01

(2) Remove the bolt [16] from the retaining strap [17] that attaches the air duct [15] to the support bracket [13].

SUBTASK 75-23-01-020-009-H01

(3) Remove the hose clamp [26].

(a) Remove the bolt [27].

SUBTASK 75-23-01-020-010-H01

(4) Remove the hose clamp [29].

(a) Remove the bolt [28].

SUBTASK 75-23-01-020-011-H01

(5) Remove the air duct [15].

SUBTASK 75-23-01-020-001-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(6) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [20] and electrical connector [22] from the CCC valve [8] (TASK 70-00-01-400-807-H01).

SUBTASK 75-23-01-020-002-H01

(7) Disconnect the air tube [21] B-nut from the solenoid [19].

ARO ALL POST SB 777-GE100-75-0042 AND PRE SB 777-GE100-75-0022

SUBTASK 75-23-01-020-012-H00

WARNING DO NOT USE AIR PRESSURE MORE THAN 25 PSIG TO CLEAN THE FILTER. DO NOT POINT THE AIRFLOW AT YOU OR OTHER PERSONS. AIR PARTICLES CAN CAUSE INJURY TO PERSONS.

(8) Remove the in-line filter [30] from the CCC valve [8] fitting. Clean or replace the in-line filter [30].

(a) If the in-line filter [30] is dirty or clogged, use dry, compressed air to remove contamination from the filter.

1) If the in-line filter [30] is clean, you can use the in-line filter [30] again.

(b) If you find damage to the in-line filter [30], replace the in-line filter [30].

ARO ALL PRE SB 777-GE100-75-0022

SUBTASK 75-23-01-020-004-H01

(9) Remove the CCC valve [8] from the stub tube [2] and the tube adapter [14] as follows:

(a) Remove the bolt [3] and the bolt [23] that attach the aft bracket [4] to the base bracket [5].

(b) Loosen the bolt [10] and the bolt [18] that attach the forward bracket [9] to the base bracket [5].

(c) Remove the V-band clamp [6] that attach the CCC valve [8] to the stub tube [2] (TASK 70-00-04-000-802-H01).

(d) Remove the V-band clamp [11] that attach the CCC valve [8] to the tube adapter [14] (TASK 70-00-04-000-802-H01).

(e) Move the aft bracket [4] and stub tube [2] aft.

(f) Make sure the locating pin on the stub tube [2] is disengaged in the slot in the aft end of the CCC valve [8].

(g) Lift the CCC valve [8] away from the stub tube [2] and the tube adapter [14].

(h) Remove the E-seal [7] and the E-Seal [12] from the CCC valve [8].

(i) Examine the E-seal [7] and E-Seal [12] for damage (TASK 70-00-04-000-802-H01).

1) Keep the E-seal [7] and the E-Seal [12] for the installation task if you do not see damage.

ARO ALL POST SB 777-GE100-75-0039 AND PRE SB 777-GE100-75-0043 AND PRE SB 777-GE100-75-0022

SUBTASK 75-23-01-020-013-H00

(10) Remove the CCC V fire blanket [31] or CCC V fire blanket [32] as follows (See Figure 402):

(a) Remove the safety wire, G50650 [C10-071] or safety cable assembly kit, G51113 [C10-143] at the four locations indicated.

(b) Remove the CCC V fire blanket [31] or CCC V fire blanket [32].

ARO ALL (POST SB 777-GE100-75-0039 OR POST SB 777-GE100-75-0043) AND PRE SB 777-GE100-75-0022

SUBTASK 75-23-01-020-014-H00

(11) Remove the CCC V fire blanket [33] and CCC V fire blanket [34] as follows (See Figure 402):

(a) Remove the safety wire, G50650 [C10-071] or safety cable assembly kit, G51113 [C10-143] at the four locations indicated.

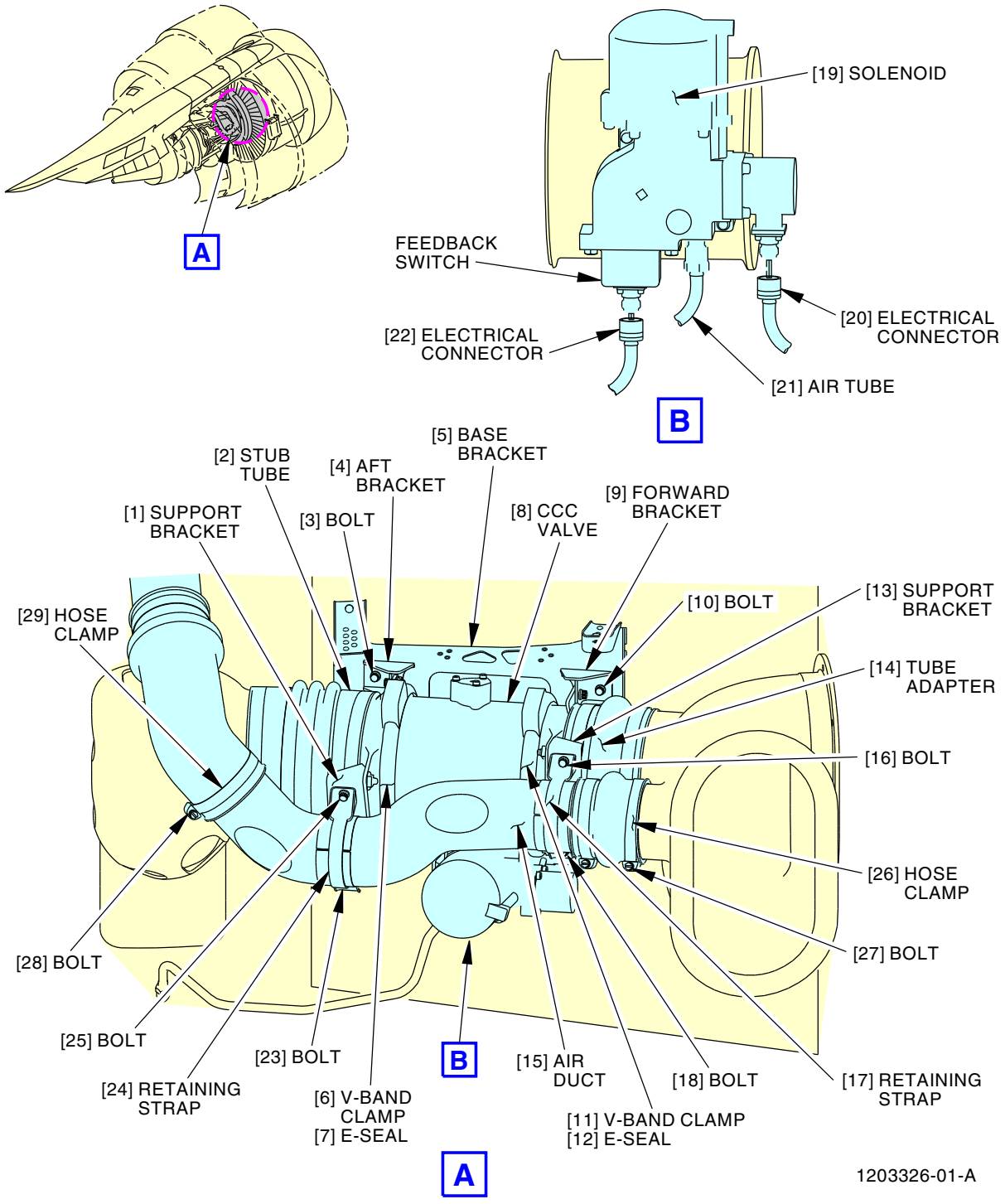
(b) Remove the CCC V fire blanket [33] and CCC V fire blanket [34].

ARO ALL PRE SB 777-GE100-75-0022

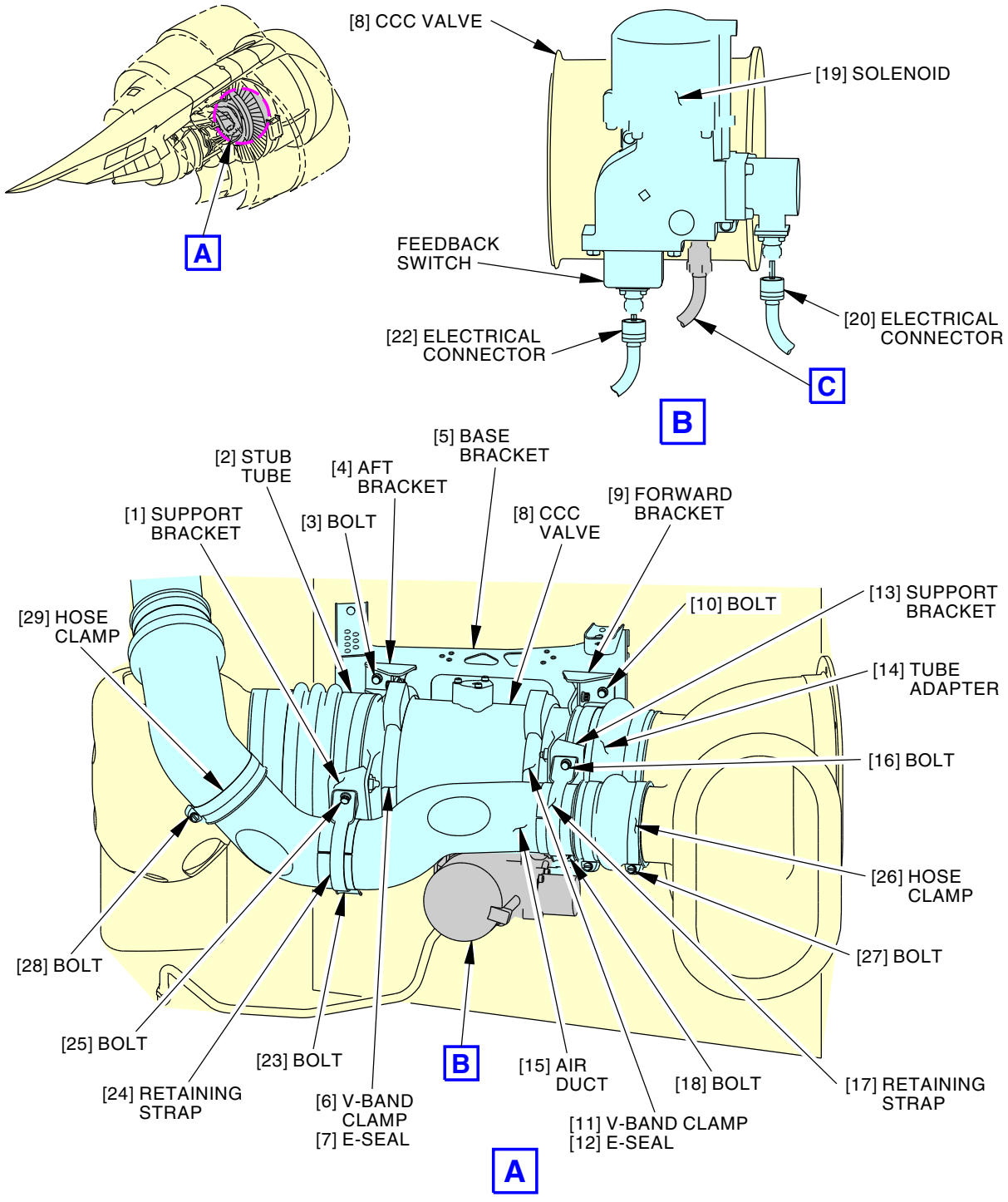
SUBTASK 75-23-01-020-005-H01

(12) Install protective covers on the electrical connectors, the receptacles, the stub tube [2], the tube adapter [14], the CCC valve [8] and the air tube [21] fitting.

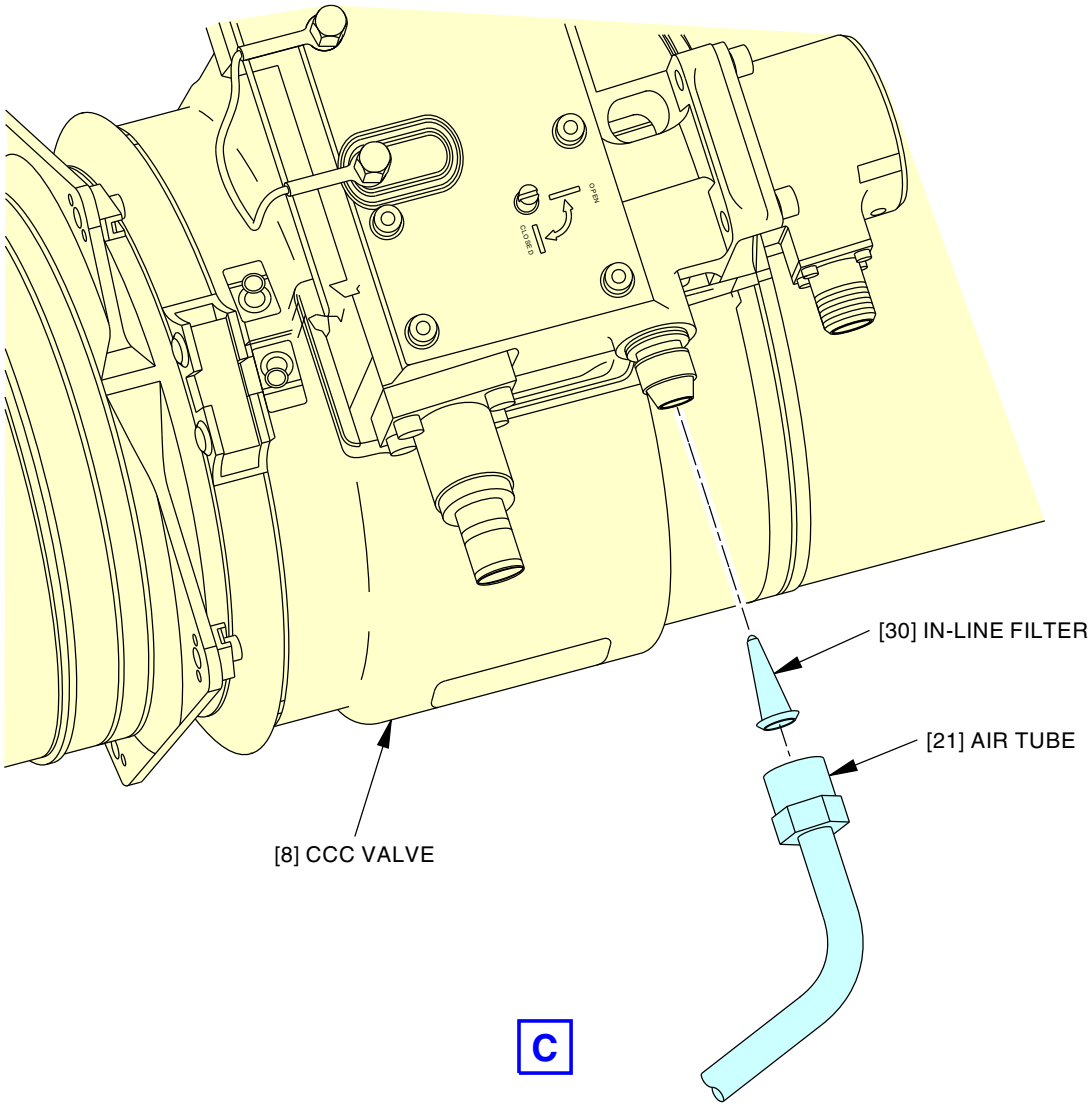
——— END OF TASK ———



Core Compartment Cooling (CCC) Valve Installation
Figure 401/75-23-01-990-801-H01 (Sheet 1 of 3)



Core Compartment Cooling (CCC) Valve Installation
Figure 401/75-23-01-990-801-H01 (Sheet 2 of 3)



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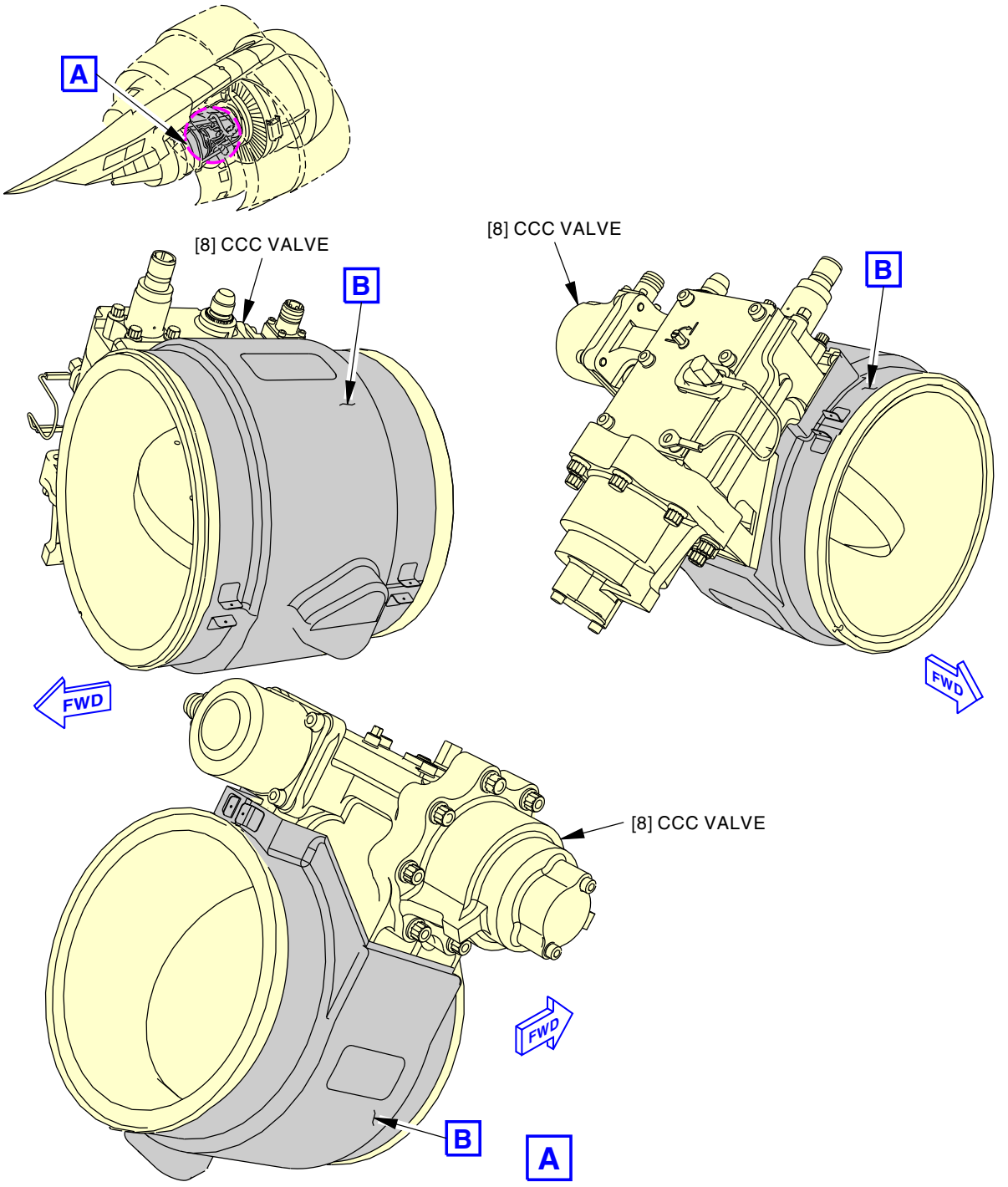
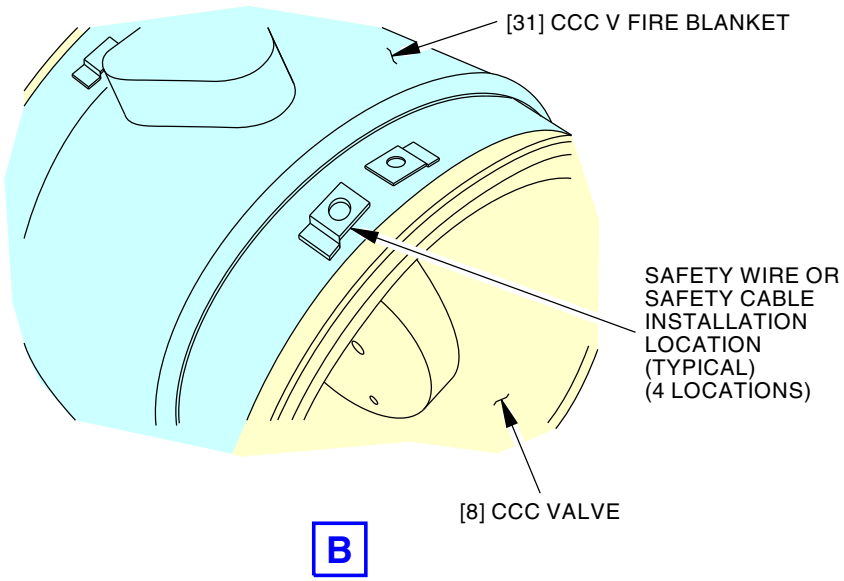
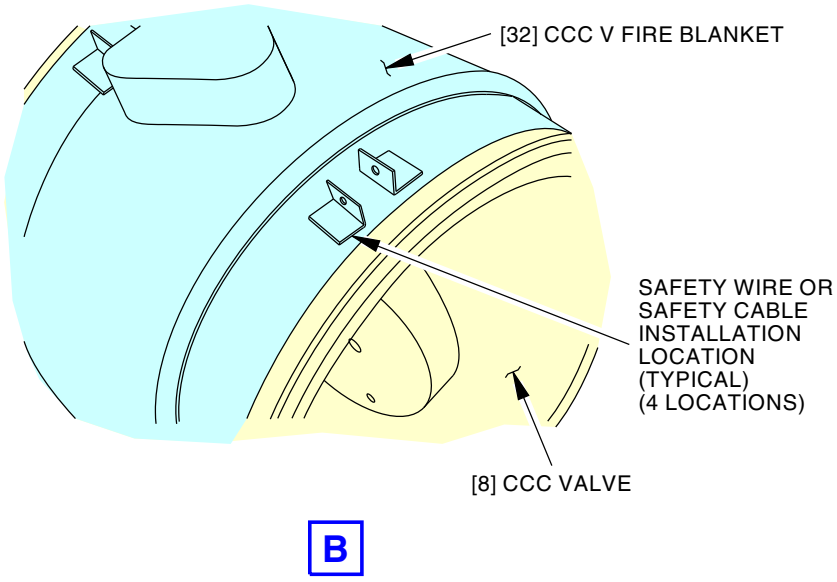
Core Compartment Cooling (CCC) Valve Installation
Figure 401/75-23-01-990-801-H01 (Sheet 3 of 3)



Core Compartment Cooling (CCC) Valve Fire Blanket Installation
Figure 402/75-23-01-990-802-H00 (Sheet 1 of 3)





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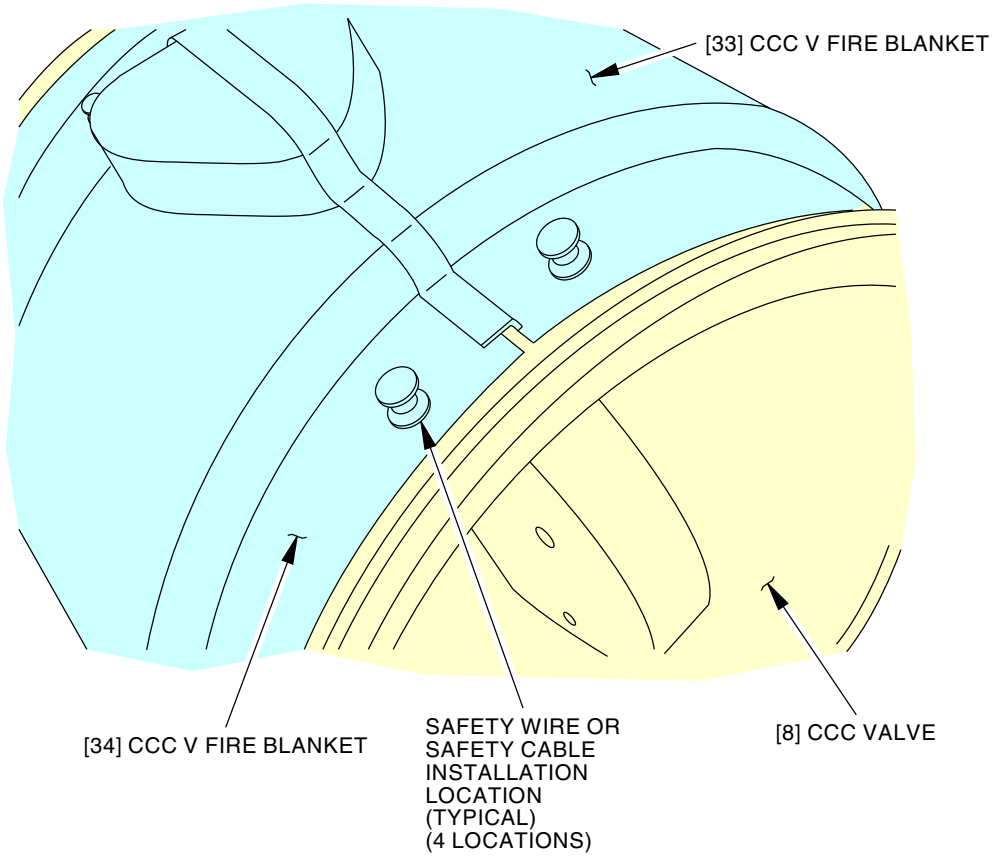
Core Compartment Cooling (CCC) Valve Fire Blanket Installation
Figure 402/75-23-01-990-802-H00 (Sheet 2 of 3)



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Core Compartment Cooling (CCC) Valve Fire Blanket Installation
Figure 402/75-23-01-990-802-H00 (Sheet 3 of 3)

TASK 75-23-01-400-801-H01

3. Core Compartment Cooling (CCC) Valve Installation

(Figure 401)

A. General

(1) This task provides the instructions on how to install the Core Compartment Cooling (CCC) valve.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
36-11-01-400-806-004	Engine Duct Installation (P/B 401)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)
SOPM 70-11-02	SAFETY CABLE PROCEDURE

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
G50650 [C10-071]	Wire - Safety, 0.020 or 0.032 inch (0.508 or 0.813 mm) Diameter	SAE AS5685, AMS 5687, AMS 5689, AMS 5690
G51113 [C10-143]	Kit - Safety Cable Assembly	

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	E-seal	75-23-01-02-150	ARO ALL
8	CCC valve	75-23-01-01A-005	ARO ALL
12	E-Seal	75-23-01-02-150	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

H. Core Compartment Cooling (CCC) Valve Installation

SUBTASK 75-23-01-420-001-H01

(1) Remove the protective covers from the electrical connectors, the receptacles, the CCC valve [8], the stub tube [2], the tube adapter [14] and the air tube [21] fitting.

SUBTASK 75-23-01-860-001-H01

(2) Make sure the lockout knob on the CCC valve [8] is in the UNLOCKED position.

ARO ALL POST SB 777-GE100-75-0039 AND PRE SB 777-GE100-75-0043 AND PRE SB 777-GE100-75-0022

SUBTASK 75-23-01-420-008-H00

(3) Install the CCC V fire blanket [31] or CCC V fire blanket [32] as follows (See Figure 402):

(a) Install the CCC V fire blanket [31] or CCC V fire blanket [32] over the CCC valve [8].

(b) Attach firmly the CCC V fire blankets with safety wire, G50650 [C10-071] or safety cable assembly kit, G51113 [C10-143] at the four locations around the CCC valve [8].

1) Refer to SAFETY CABLE PROCEDURE, SOPM 70-11-02.

ARO ALL (POST SB 777-GE100-75-0039 OR POST SB 777-GE100-75-0043) AND PRE SB 777-GE100-75-0022

SUBTASK 75-23-01-420-009-H00

(4) Install the CCC V fire blanket [33] and CCC V fire blanket [34] as follows (See Figure 402):

(a) Install the CCC V fire blanket [33] and CCC V fire blanket [34] over the CCC valve [8].

(b) Attach firmly the CCC V fire blankets with safety wire, G50650 [C10-071] or safety cable assembly kit, G51113 [C10-143] at the four locations around the CCC valve [8].

1) Refer to SAFETY CABLE PROCEDURE, SOPM 70-11-02.

ARO ALL PRE SB 777-GE100-75-0022

SUBTASK 75-23-01-420-002-H01

(5) Attach the CCC valve [8] to the stub tube [2] and tube adapter [14] as follows:

(a) Install the E-seal [7] and the E-Seal [12] on the CCC valve [8].

(b) Move the aft bracket [4] and the stub tube [2] aft.

(c) Install the CCC valve [8] between the stub tube [2] and the tube adapter [14] with the feedback switch down.

(d) Align the slot in the valve with the locating pin in the stub tube [2].

(e) Move the aft bracket [4] and the stub tube [2] forward.

(f) Make sure the locating pin on the stub tube [2] is engaged in the slot in the aft end of the CCC valve [8].

(g) Attach the CCC valve [8] to the tube adapter [14] with the V-band clamp [11].

1) Push the retainer link over the opposite V-band half.

(h) Attach the CCC valve [8] to the stub tube [2] with the V-band clamp [6].

1) Push the retainer link over the opposite V-band half.

ARO ALL POST SB 777-GE100-75-0042 AND PRE SB 777-GE100-75-0022

(i) Install the in-line filter [30] to the CCC valve [8] fitting.

ARO ALL PRE SB 777-GE100-75-0022

(j) Connect the B-nut on the air tube [21] to the CCC valve [8].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

(k) Install the bolt [3] and the bolt [23] that attach the aft bracket [4] to the base bracket [5].

1) Tighten the bolt [3] and the bolt [23] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(l) Tighten the bolt [10] and the bolt [18] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(m) Tighten the V-band clamp [6] and the V-band clamp [11] to 110-120 pound-inches (12.4-13.6 Newton-meters) (TASK 70-51-00-910-801-H01).

SUBTASK 75-23-01-420-004-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(6) Use teflon-jawed pliers, STD-664 to connect the electrical connector [20] and electrical connector [22] to the CCC valve [8] (TASK 70-00-01-400-807-H01).

SUBTASK 75-23-01-420-005-H01

(7) Install the air duct [15].

SUBTASK 75-23-01-420-006-H01

(8) Install the hose clamp [29].

(a) Tighten bolt [28] to 32-38 pound inches (3.62-4.29 Newton-meters).

SUBTASK 75-23-01-420-007-H01

(9) Install the hose clamp [26].

(a) Tighten the bolt [27] to 32-38 pound inches (3.62-4.29 Newton-meters).

SUBTASK 75-23-01-420-003-H01

(10) Install the retaining strap [17] and the bolt [16] which attaches the air duct [15] to the support bracket [13].

(a) Tighten the bolt [16] to 110-120 pound-inches (12.4 -13.6 Newton-meters).

SUBTASK 75-23-01-410-004-H01

(11) Install the retaining strap [24] and the bolt [25] which attaches the air duct [15] to the support bracket [1].

(a) Tighten the bolt [25] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 75-23-01-410-005-H01

(12) Install the HP/IP manifold (TASK 36-11-01-400-806-004).

I. Put the Airplane Back to its Usual Condition.

SUBTASK 75-23-01-410-003-H02

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-23-01-860-003-H01

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

J. Core Compartment Cooling (CCC) Valve Test

SUBTASK 75-23-01-710-002-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

CORE COMPARTMENT COOLING (CCC) VALVE FEEDBACK SWITCH - REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks:

(1) A removal of the core compartment cooling valve feedback switch

(2) An installation of the core compartment cooling valve feedback switch.

TASK 75-23-02-000-801-H01

2. Core Compartment Cooling (CCC) Valve Feedback Switch Removal

A. General

(1) This inspection is applicable to the PRE GE SB 75-0022 and POST GE SB 75-0022 where the CCC valve is disable and not removed. The CCC valve feedback switch can be deleted by GE SB 75-0022.

(2) This procedure is the removal task for the core compartment cooling valve (referred to as the CCC valve) feedback switch.

(3) The CCC valve feedback switch is on the CCC valve. The CCC valve is on the engine core at approximately the 2:00 o'clock position.

(4) To get access to the CCC valve, you must open the right thrust reverser half.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the CCC Feedback Switch Removal

SUBTASK 75-23-02-860-001-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-23-02-010-001-H02

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

G. Procedure

SUBTASK 75-23-02-020-001-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(1) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [4] from the CCC valve feedback switch [1] (TASK 70-00-01-400-807-H01).

(a) Install a protective covers on the electrical receptacle on the CCC valve feedback switch [1] and the electrical connector [4].

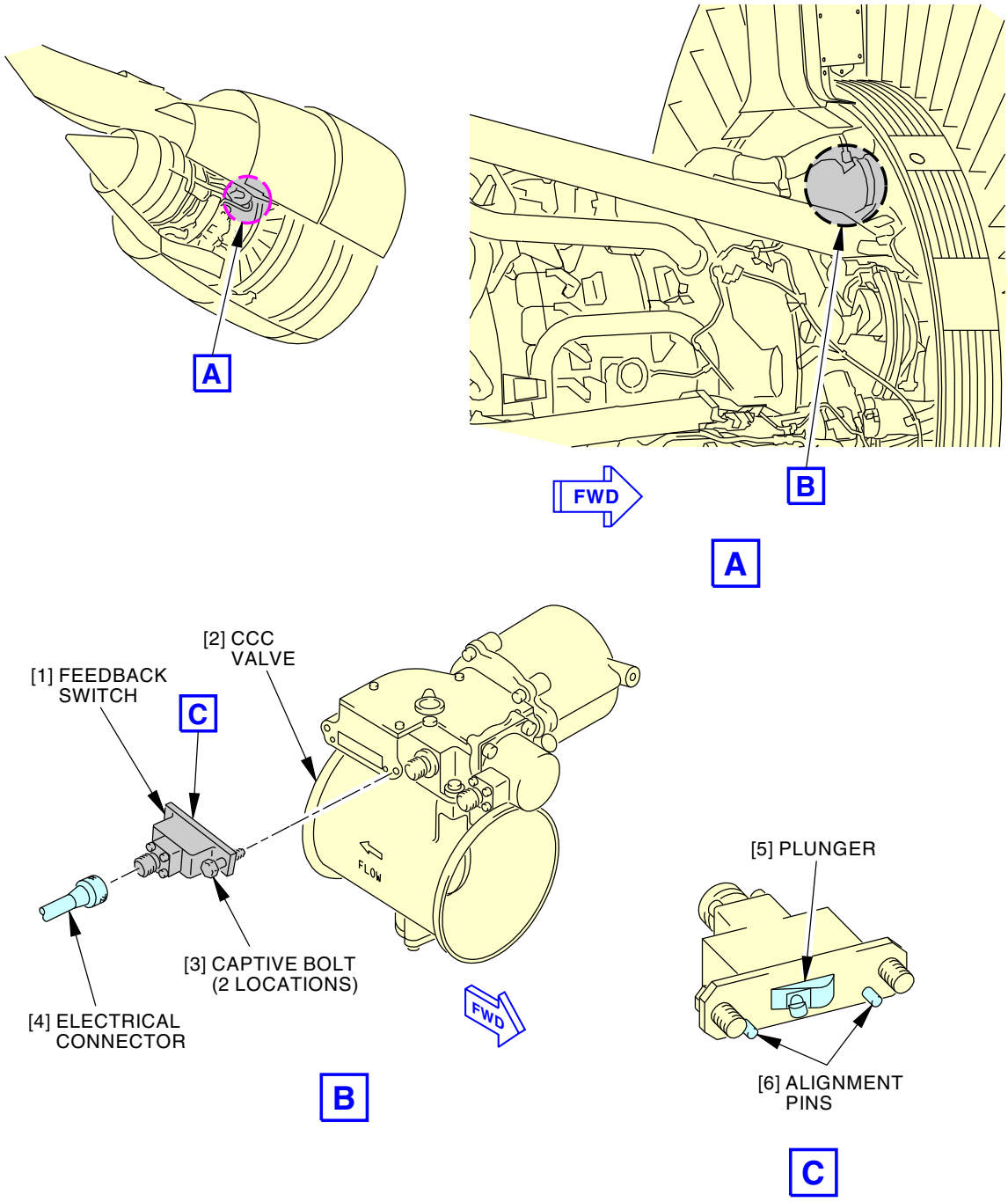
SUBTASK 75-23-02-020-002-H01

CAUTION

DO NOT REMOVE THE CAPTIVE BOLTS FROM THE FEEDBACK SWITCH. DAMAGE CAN OCCUR TO THE FEEDBACK SWITCH OR THE CAPTIVE BOLTS.

(2) Loosen the captive bolts [3] that attach the CCC valve feedback switch [1] to the CCC valve [2] and remove the CCC valve feedback switch [1]. (Figure 401)

——— END OF TASK ———



Core Compartment Cooling (CCC) Valve Feedback Switch Installation
Figure 401/75-23-02-990-801-H01

TASK 75-23-02-400-801-H01

3. Core Compartment Cooling (CCC) Valve Feedback Switch Installation

A. General

(1) This inspection is applicable to the PRE GE SB 75-0022 and POST GE SB 75-0022 where the CCC valve is disable and not removed. The CCC valve feedback switch can be deleted by GE SB 75-0022.

(2) This procedure is the installation task for the core compartment cooling valve (referred to as the CCC valve) feedback switch.

(3) You must do the tests that are listed in the power plant test reference table after you install the CCC valve feedback switch.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	CCC valve feedback switch	75-23-01-01A-010	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. CCC Valve Feedback Switch Installation

SUBTASK 75-23-02-420-001-H01

(1) Install the CCC valve feedback switch [1] to the CCC valve [2] as follows: (Figure 401)

CAUTION

MAKE SURE THE FEEDBACK SWITCH PLUNGER IS NOT INSERTED AT AN ANGLE. DAMAGE CAN OCCUR TO THE PLUNGER WHEN YOU INSERT IT AN ANGLE.

(a) Insert the feedback switch plunger [5] into the CCC valve [2] opening with the alignment pins [6] down.

(b) Engage the feedback switch alignment pins [6] in the CCC valve [2] holes.

(c) Hold the CCC valve feedback switch [1] and tighten the captive bolts [3] with your hand.

(d) Tighten the captive bolts [3] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-23-02-420-002-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(2) Use teflon-jawed pliers, STD-664 to connect the electrical connector [4] (TASK 70-00-01-400-807-H01): (Figure 401)

(a) Remove the protective cover from the electrical receptacle on the CCC valve feedback switch [1] and the electrical connector [4].

(b) Connect the electrical connector [4] to the CCC valve feedback switch [1].

(c) Tighten the electrical connector [4].

H. Put the Airplane Back to its Usual Condition

SUBTASK 75-23-02-410-001-H02

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-23-02-860-002-H01

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

I. CCC Valve Feedback Switch Installation Test

SUBTASK 75-23-02-760-001-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

CORE COMPARTMENT COOLING (CCC) VALVE IN-LINE FILTER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the core compartment cooling (CCC) valve in-line filter.

(2) An installation of the core compartment cooling (CCC) valve in-line filter.

TASK 75-23-03-000-801-H00

2. Core Compartment Cooling (CCC) Valve In-Line Filter Removal

(Figure 401)

A. General

(1) This task is the removal procedure for the Core Compartment Cooling Valve (CCCV) in-line filter.

(2) The CCCV in-line filter is located in the Inside Diameter (ID) of the CCCV at the 12:30 clock position on the engine core.

(3) You must open the right thrust reverser to get access to the CCCV.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
412	Inlet Cowl - Left Engine

D. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Prepare for the CCC Valve In-Line Filter Removal

SUBTASK 75-23-03-860-001-H00

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-23-03-010-001-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task: Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00.

Open these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task: Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00.

Open these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

F. Procedure

SUBTASK 75-23-03-010-002-H00

(1) Do these steps to remove the CCCV in-line filter:

(a) Disconnect the air tube [2] B-nut from the CCC valve [1].

(b) Disconnect the end of the air tube from the CCCV fitting to allow for the valve fitting to be accessible.

(c) Remove the CCCV in-line filter [3] from the CCCV fitting ID and examine the air filter as follows:

1) Examine the CCCV in-line filter [3] for contamination, clogging, damage and holes.

WARNING USE AIR PRESSURE OF 25 PSIG OR LESS TO CLEAN AND DRY THE FILTER. DO NOT POINT THE AIRFLOW TOWARD YOURSELF OR OTHER PERSONS. YOU CAN BE INJURED BY FLYING PARTICLES.

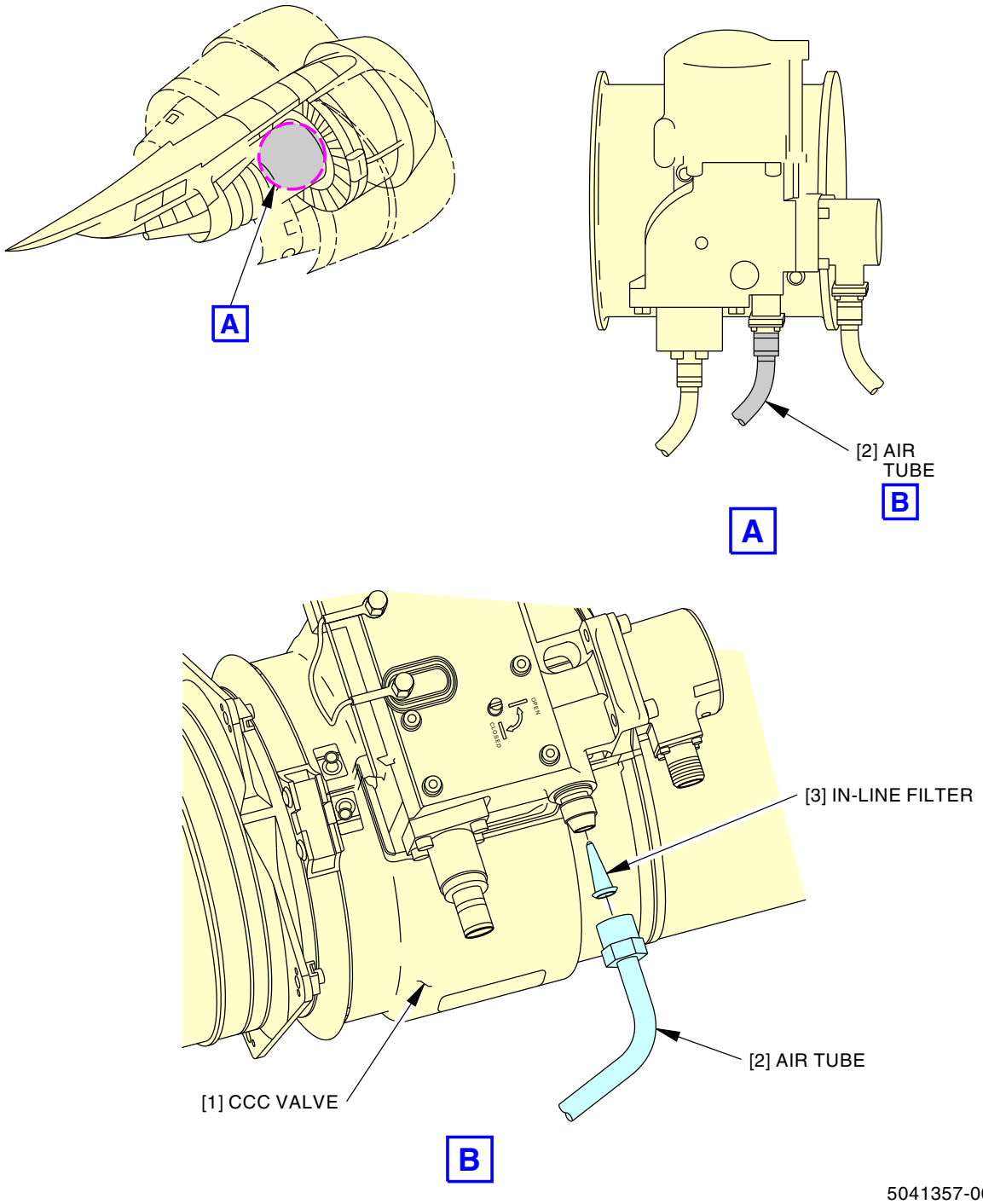
2) If you find contamination, use dry, compressed air to clean the in-line filter [3].

NOTE: If the in-line filter [3] is clean, you can use the in-line filter [3] again.

3) If damage is found, replace the in-line filter [3].

4) Install the protective cover on the air tube [2].

END OF TASK



Core Compartment Cooling (CCC) Valve In-Line Filter - Removal/Installation
Figure 401/75-23-03-990-801-H00

TASK 75-23-03-400-801-H00

3. Core Compartment Cooling (CCC) Valve In-Line Filter Installation

(Figure 401)

A. General

(1) This is the installation procedure for the Core Compartment Cooling Valve (CCCV) in-line filter [3].

(2) You must do the tests that are in the power plant test reference table after you install the CCCV in-line filter [3].

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
412	Inlet Cowl - Left Engine

D. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Procedure

SUBTASK 75-23-03-010-003-H00

(1) Remove the protective cover from the air tube [2].

SUBTASK 75-23-03-410-001-H00

(2) Install the CCCV in-line filter [3] into the Inside Diameter (ID) of the valve fitting.

SUBTASK 75-23-03-420-001-H00

(3) Connect the air tube [2] to the CCC valve [1].

(a) Tighten the B-nut (Instruction for Torque, TASK 70-51-00-910-801-H01).

F. Put the Airplane Back to Its Usual Condition

SUBTASK 75-23-03-410-002-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-23-03-860-002-H00

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

G. Core Compartment Cooling (CCC) Valve Installation Test

SUBTASK 75-23-03-760-001-H00

(1) Do the tests listed in Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

LOW PRESSURE TURBINE ACTIVE CLEARANCE CONTROL (LPTACC) VALVE - REMOVAL/ INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the low pressure turbine active clearance control (LPTACC) valve

(2) An installation of the low pressure turbine active clearance control (LPTACC) valve.

TASK 75-24-01-000-801-H01

2. Low Pressure Turbine Active Clearance Control (LPTACC) Valve Removal

A. General

(1) This task is the removal procedure for low pressure turbine active clearance control valve (referred to as the LPTACC valve).

(2) The LPTACC valve is at the 3:00 o'clock position on the engine core.

(3) You must open the right thrust reverser to get access to the LPTACC valve.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the LPTACC Valve Removal

SUBTASK 75-24-01-860-002-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE

(Continued)

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-24-01-010-001-H02

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

G. Procedure

SUBTASK 75-24-01-010-002-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(1) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [3] and electrical connector [5] from the LPTACC valve solenoid [2] and feedback switch [6] (TASK 70-00-01-400-807-H01). (Figure 401)

(a) Install protective covers on the LPTACC valve [1] electrical receptacles, the electrical connector [3] and electrical connector [5].

SUBTASK 75-24-01-010-003-H01

(2) Disconnect the air tube [4] B-nut from the LPTACC valve [1].

ARO ALL POST SB 777-GE100-75-0036; AIRPLANES WITH IN-LINE FILTER

SUBTASK 75-24-01-020-003-H00

WARNING DO NOT USE AIR PRESSURE MORE THAN 25 PSIG TO CLEAN THE FILTER. DO NOT POINT THE AIRFLOW AT YOU OR OTHER PERSONS. AIR PARTICLES CAN CAUSE INJURY TO PERSONS.

(3) Remove the in-line filter [18] from the LPTACC valve [1] fitting. Clean or replace the in-line filter.

(a) If the in-line filter is dirty or clogged, use dry, compressed air to remove contamination from the filter.

1) If the in-line filter is clean, you can use the in-line filter again.

(b) If you find damage to the in-line filter, replace the in-line filter.

ARO ALL

SUBTASK 75-24-01-020-001-H01

(4) Remove the LPTACC valve [1] from the LPTACC duct [17] and the valve adapter [12] as follows:

(a) Loosen the bolts [13] that attach the support bracket [14] to the LPTACC bracket [15].

(b) Remove the two V-band clamp [7] and V-band clamp [11] that attach the LPTACC valve [1] to the LPTACC duct [17] and the valve adapter [12].

(c) Move the support bracket [14] and the valve adapter [12] forward and remove the LPTACC valve [1].

(d) Remove the E-Seal [8] and E-Seal [10] from the LPTACC valve [1].

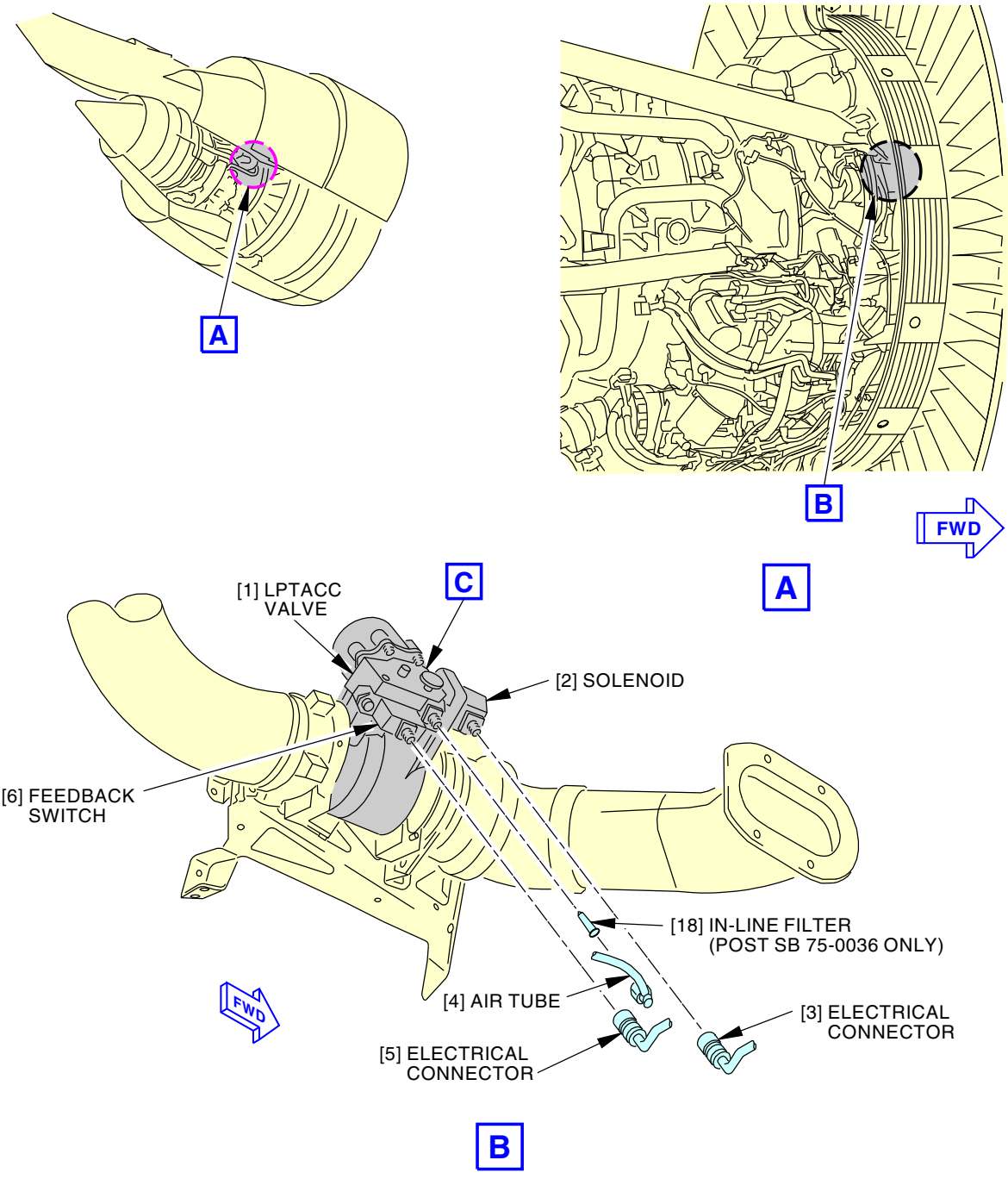
1) Do a visual check of the E-Seal [8] and E-Seal [10] for obvious damage.

a) Keep the E-Seal [8] and E-Seal [10] for the installation task if it is not damaged.

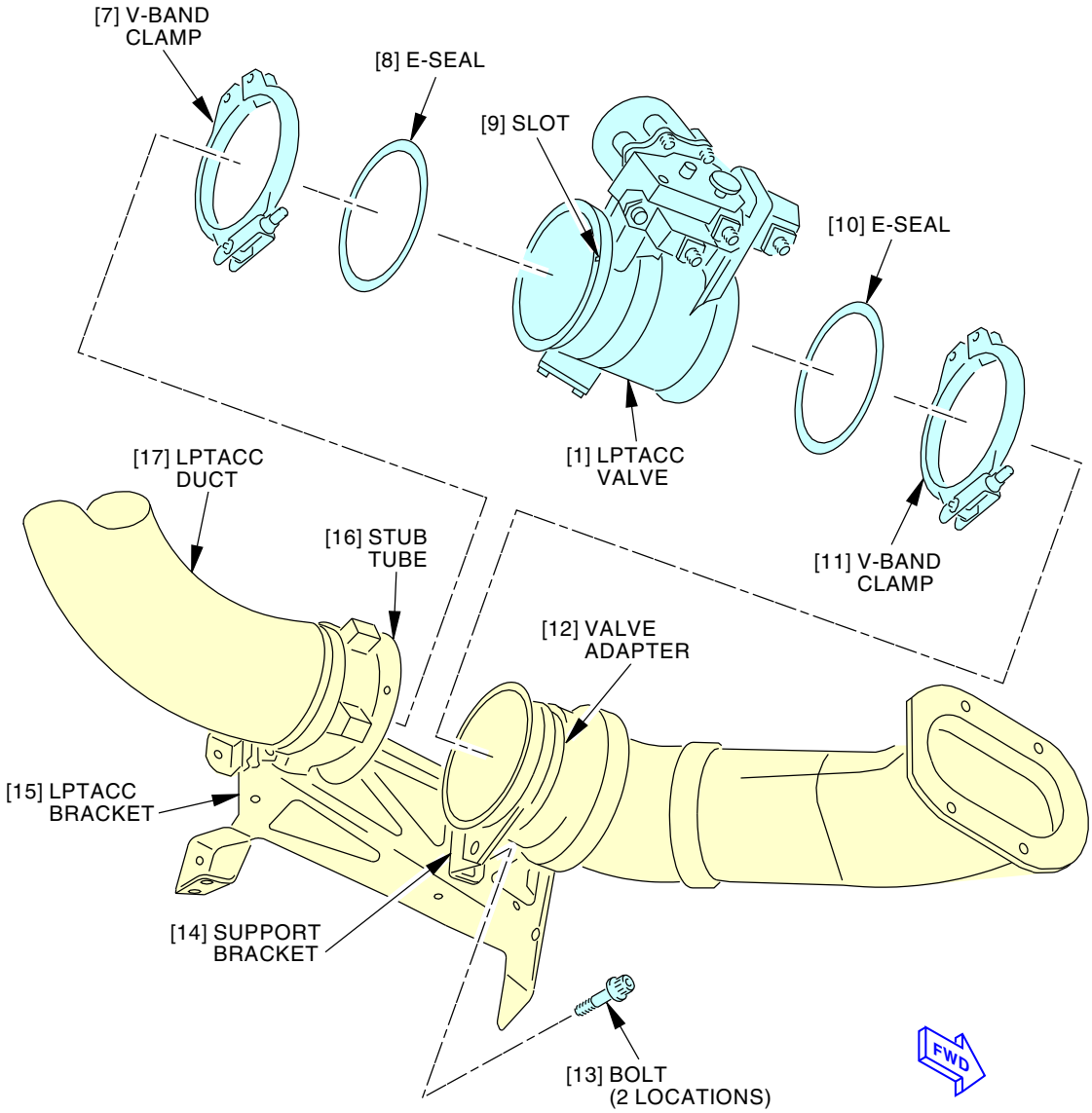
SUBTASK 75-24-01-020-002-H01

(5) Install protective covers on the air tube [4] B-nut, the air tube fitting on the LPTACC valve [1], the LPTACC duct [17], LPTACC valve [1], and the valve adapter [12].

——— END OF TASK ———



Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation
Figure 401/75-24-01-990-801-H01 (Sheet 1 of 2)



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Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation
Figure 401/75-24-01-990-801-H01 (Sheet 2 of 2)

TASK 75-24-01-400-801-H01

3. Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation

A. General

(1) This is the installation procedure for the low pressure turbine active clearance control valve (referred to as the LPTACC valve).

(2) You must do the tests that are listed in the power plant test reference table after you install the LPTACC valve.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	LPTACC valve	75-24-01-02-080	ARO ALL
8	E-Seal	75-24-01-02-075	ARO ALL
10	E-Seal	75-24-01-02-075	ARO ALL

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Procedure

SUBTASK 75-24-01-420-001-H01

(1) Remove the protective covers from the air tube [4] B-nut, the LPTACC valve [1] air tube fitting, the LPTACC duct [17], LPTACC valve [1] and the valve adapter [12].

SUBTASK 75-24-01-860-001-H01

(2) Make sure the lockout knob on the LPTACC valve is in the UNLOCKED position.

SUBTASK 75-24-01-420-002-H01

(3) Attach the LPTACC valve [1] to the LPTACC duct [17] and the valve adapter [12] as follows:Figure 401

(a) Install the E-Seal [8] and E-Seal [10] into the LPTACC valve [1].

(b) Move the support bracket [14] and the valve adapter [12] forward.

(c) Install the LPTACC valve [1] between the LPTACC duct [17] and the valve adapter [12] and move the support bracket [14] and valve adapter [12] aft.

(d) Make sure the locating pin on the LPTACC duct [17] is engaged in the slot [9] in the aft end of the LPTACC valve [1].

(e) Attach the LPTACC valve [1] to the LPTACC duct [17] with the aft V-band clamp [7].

1) Push the retainer link over the opposite V-band half.

(f) Attach the LPTACC valve [1] to the valve adapter [12] with the forward V-band clamp [11].

1) Push the retainer link over the opposite V-band half.

(g) Install the two bolts [13] that attach the support bracket [14] to the bracket [15].

1) Tighten the bolts [13] to 55-70 pound-inches (6.2-7.9 Newton-meters).

(h) Tighten the V-band clamp [7] and V-band clamp [11] to 115-125 pound-inches (13.0-14.1 Newton-meters) (TASK 70-51-00-910-801-H01).

ARO ALL POST SB 777-GE100-75-0036; AIRPLANES WITH IN-LINE FILTER

SUBTASK 75-24-01-420-006-H00

(4) Install the in-line filter [18] to the LPTACC valve [1] fitting.

ARO ALL

SUBTASK 75-24-01-420-003-H01

(5) Connect the air tube [4] to the LPTACC valve [1].

(a) Tighten the B-nut (TASK 70-51-00-910-801-H01).

SUBTASK 75-24-01-420-004-H01

(6) Remove the protective cover from the LPTACC valve [1] electrical receptacles, the electrical connector [3] and electrical connector [5].

SUBTASK 75-24-01-420-005-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(7) Connect the electrical connector [3] to the LPTACC valve solenoid [2] and electrical connector [5] to the feedback switch [6] (TASK 70-00-01-400-807-H01).

(a) Tighten the electrical connector [3] and electrical connector [5].

G. Put the Airplane Back to its Usual Condition.

SUBTASK 75-24-01-410-001-H03

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-24-01-860-003-H01

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

H. Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation Test

SUBTASK 75-24-01-710-002-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

LOW PRESSURE TURBINE ACTIVE CLEARANCE CONTROL (LPTACC) VALVE FEEDBACK SWITCH - REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks:

(1) A removal of the low pressure turbine active clearance control (LPTACC) valve feedback switch

(2) An installation the low pressure turbine active clearance control (LPTACC) valve feedback switch.

TASK 75-24-02-000-801-H01

2. Low Pressure Turbine Active Clearance Control (LPTACC) Valve Feedback Switch Removal

A. General

(1) This task is the removal procedure for the low pressure turbine active clearance control (LPTACC) valve feedback switch (referred to as the feedback switch).

(2) The feedback switch is on the LPTACC valve at the 3:00 o'clock position on the engine core.

(3) You must open the right thrust reverser to get access to the feedback switch.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the LPTACC Valve Feedback Switch Removal

SUBTASK 75-24-02-860-001-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-24-02-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

G. Procedure

SUBTASK 75-24-02-020-001-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(1) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [4] from the feedback switch [1] (TASK 70-00-01-400-807-H01). (Figure 401)

(a) Install protective covers on the electrical receptacle for the feedback switch [1] and the electrical connector [4].

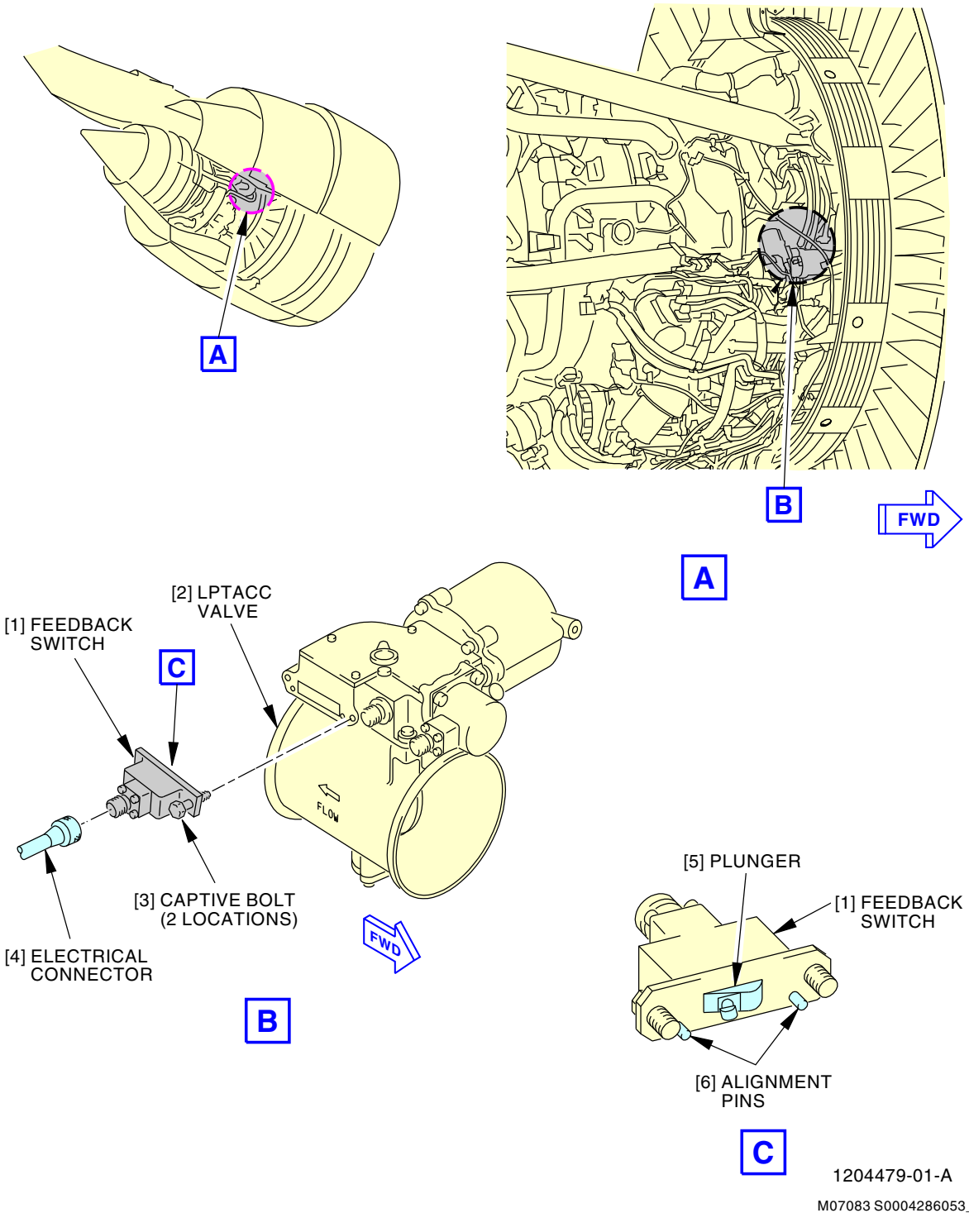
SUBTASK 75-24-02-020-002-H01

CAUTION

DO NOT REMOVE THE CAPTIVE BOLTS FROM THE FEEDBACK SWITCH. DAMAGE CAN OCCUR TO THE FEEDBACK SWITCH OR THE CAPTIVE BOLTS.

(2) Loosen the captive bolts [3] that attach the feedback switch [1] to the LPTACC valve [2] and remove the feedback switch [1].

——— END OF TASK ———



Low Pressure Turbine Active Clearance Control (LPTACC) Valve Feedback Switch Installation
Figure 401/75-24-02-990-801-H01

TASK 75-24-02-400-801-H01

3. Low Pressure Turbine Active Clearance Control (LPTACC) Valve Feedback Switch Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the low pressure turbine active clearance control (LPTACC) valve feedback switch (referred to as the feedback switch).

(2) You must do the tests that are listed in the power plant test reference table after you install the feedback switch.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Feedback switch	75-24-01-02-085	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Procedure

SUBTASK 75-24-02-420-001-H01

(1) Install the feedback switch [1] on the LPTACC valve [2] as follows:

CAUTION MAKE SURE THE FEEDBACK SWITCH PLUNGER IS NOT INSERTED AT AN ANGLE. DAMAGE CAN OCCUR TO THE PLUNGER IF YOU INSERT IT AT AN ANGLE.

(a) Insert the feedback switch plunger [5] into the LPTACC valve [2] opening with the alignment pins [6] down.

(b) Engage the feedback switch alignment pins [6] in the LPTACC valve [2] holes.

(c) Hold the feedback switch [1] and tighten the captive bolts [3] with your hand.

1) Tighten the captive bolts [3] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-24-02-420-002-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(2) Use teflon-jawed pliers, STD-664 to connect the electrical connector [4] (TASK 70-00-01-400-807-H01):

(a) Remove the protective covers from the electrical receptacle on the feedback switch [1] and the electrical connector [4].

(b) Connect the electrical connector [4] to the feedback switch [1].

(c) Tighten the electrical connector [4].

H. Put the Airplane Back to its Usual Condition.

SUBTASK 75-24-02-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-24-02-860-002-H01

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW

(Continued)

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

I. Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation Test

SUBTASK 75-24-02-710-002-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

LOW PRESSURE TURBINE ACTIVE CLEARANCE CONTROL (LPTACC) VALVE IN-LINE FILTER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

ARO ALL POST SB 777-GE100-75-0036; AIRPLANES WITH IN-LINE FILTER

(1) A removal of the low pressure turbine active clearance control (LPTACC) valve in-line filter.

(2) An installation of the low pressure turbine active clearance control (LPTACC) valve in-line filter.

TASK 75-24-03-000-801-H00

2. Low Pressure Turbine Active Clearance Control (LPTACC) Valve In-Line Filter Removal

(Figure 401)

A. General

(1) This task is the removal procedure for low pressure turbine active clearance control valve in-line filter.

(2) The LPTACC valve in-line filter is located in the internal diameter (ID) of the LPTACC valve at the 3:00 o'clock position on the engine core.

(3) You must open the right thrust reverser to get access to the LPTACC valve.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	LPTACC valve in-line filter	75-20-51-25C-038	ARO ALL

D. Location Zones

Zone	Area
411	Engine, Left
412	Inlet Cowl - Left Engine

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

ARO ALL POST SB 777-GE100-75-0036; AIRPLANES WITH IN-LINE FILTER (Continued)

F. Prepare for the LPTACC Valve In-Line Filter Removal

SUBTASK 75-24-03-840-001-H00

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-24-03-010-001-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task: Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00.

Open these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task: Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00.

Open these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

G. Procedure

SUBTASK 75-24-03-020-001-H00

(1) Do these steps to remove the LPTACC valve in-line filter:

(a) Disconnect the air tube [4] B-nut from the LPTACC valve [1].

(b) Disconnect the end of the air tube from the LPTACC valve fitting to allow for the valve fitting to be accessible.

(c) Remove the LPTACC valve in-line filter [7] from the LPTACC valve fitting internal diameter (ID) and examine the air filter as follows:

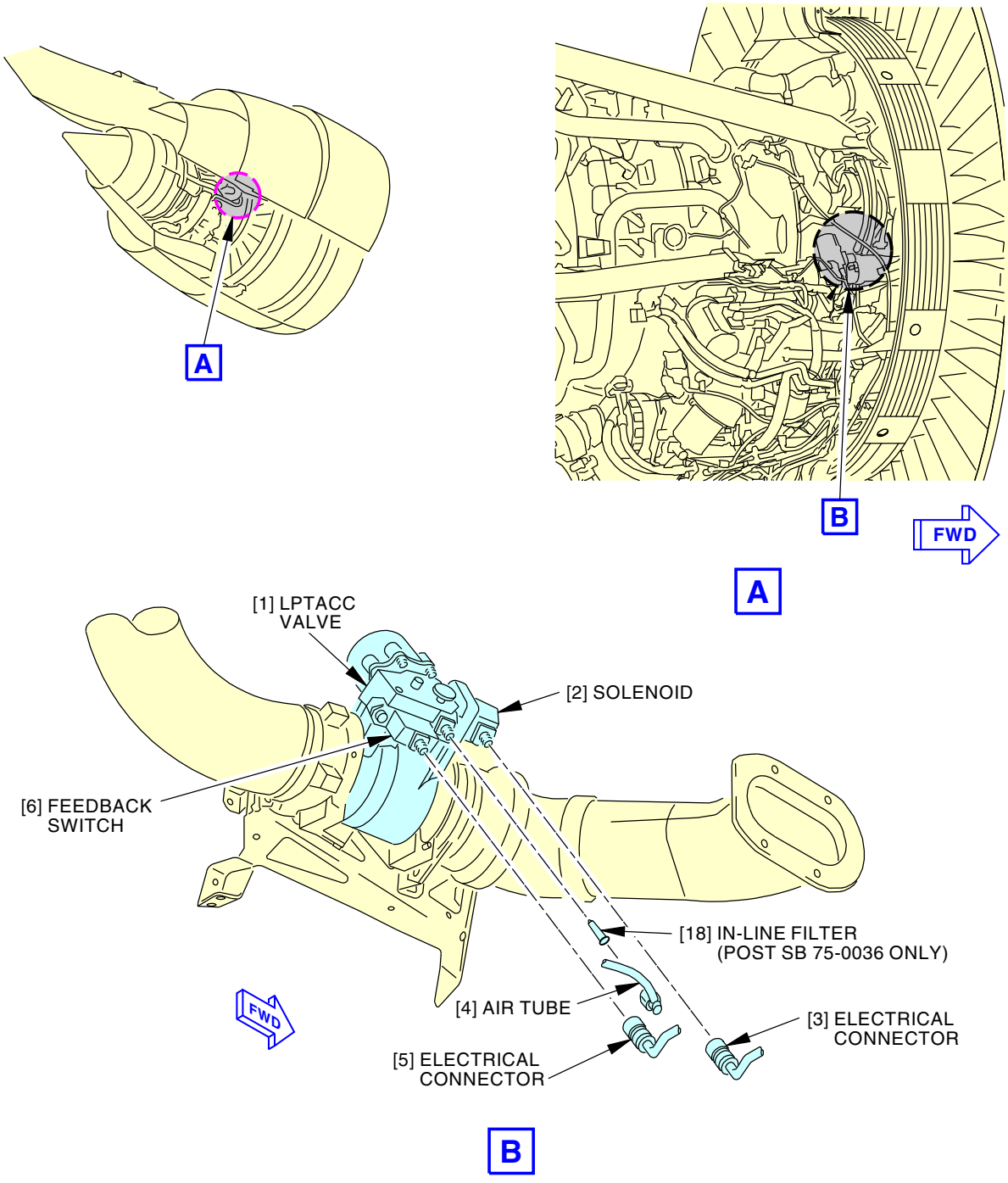
1) Examine the LPTACC valve in-line filter [7] for contamination, clogging, damage and holes.

ARO ALL POST SB 777-GE100-75-0036; AIRPLANES WITH IN-LINE FILTER (Continued)

WARNING USE AIR PRESSURE OF 25 PSIG OR LESS TO CLEAN AND DRY THE FILTER. DO NOT POINT THE AIRFLOW TOWARD YOURSELF OR OTHER PERSONS. YOU CAN BE INJURED BY FLYING PARTICLES.

2) If you find contamination, use dry, compressed air to clean the in-line filter.
   a) If the in-line filter is clean, you can use the in-line filter again.
3) If damage is found, replace the in-line filter.
4) Install the protective cover on the air tube [4].

——— END OF TASK ———



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Low Pressure Turbine Active Clearance Control (LPTACC) Valve In-Line Filter Installation
Figure 401/75-24-03-990-801-H00

TASK 75-24-03-400-801-H00

3. Low Pressure Turbine Active Clearance Control (LPTACC) Valve In-Line Filter Installation

Figure 401

A. General

(1) This is the installation procedure for the low pressure turbine active clearance control valve in-line filter.

(2) You must do the tests that are in the power plant test reference table after you install the LPTACC valve in-line filter.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	LPTACC valve in-line filter	75-20-51-25C-038	ARO ALL

D. Location Zones

Zone	Area
411	Engine, Left
412	Inlet Cowl - Left Engine

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Procedure

SUBTASK 75-24-03-410-001-H00

(1) Remove the protective cover from the air tube [4].

SUBTASK 75-24-03-420-002-H00

(2) Install the LPTACC valve in-line filter [7] into the inside diameter (ID) of the valve fitting.

SUBTASK 75-24-03-420-001-H00

(3) Connect the air tube [4] to the LPTACC valve [1].

(a) Tighten the B-nut (Instruction for Torque, TASK 70-51-00-910-801-H01).

ARO ALL POST SB 777-GE100-75-0036; AIRPLANES WITH IN-LINE FILTER (Continued)

G. Put the Airplane Back to Its Usual Condition

SUBTASK 75-24-03-840-002-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-24-03-840-003-H00

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

H. Low Pressure Turbine Active Clearance Control (LPTACC) Valve Installation Test

SUBTASK 75-24-03-700-001-H00

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

END OF TASK

HIGH PRESSURE TURBINE ACTIVE CLEARANCE CONTROL (HPTACC) VALVE - REMOVAL/ INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the high pressure turbine active clearance control (HPTACC) valve

(2) An installation of the HPTACC valve.

TASK 75-24-04-000-801-H01

2. High Pressure Turbine Active Clearance Control (HPTACC) Valve Removal

A. General

(1) This procedure is the removal task for the high pressure turbine active clearance control valve (referred to as the HPTACC valve).

(2) The HPTACC valve is on the engine core at the 9:00 o'clock position.

(3) You must open the left thrust reverser to get access to the HPTACC valve.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

F. Prepare for the HPTACC Valve Removal

SUBTASK 75-24-04-860-001-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE

(Continued)

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-24-04-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the left thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(e) For the left thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

G. HPTACC Valve Removal

SUBTASK 75-24-04-020-001-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(1) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [7] and electrical connector [8] from the HPTACC valve [1](TASK 70-00-01-400-807-H01) (Figure 401).

(a) Install protective covers on the electrical receptacles on the HPTACC valve [1] and the electrical connector [7] and electrical connector [8].

SUBTASK 75-24-04-020-002-H01

(2) Remove the fuel tube-hose (open port) [13] and the fuel tube-hose (close port) [15] from the HPTACC valve [1].

(a) Remove the bolt [30] and bolt [31] that attaches the tube clamp [10] and tube clamp [11] to the angle bracket [9].

(b) Disconnect the drain tube (close port) [6] from the drain can (close port) [16].

(c) Disconnect the drain tube (open port) [5] from the drain can (open port) [14].

(d) Remove the drain can (open port) [14] and drain can (close port) [16] from the HPTACC valve [1].

1) Remove the two bolts [19] that attach the drain can (open port) [14] to the HPTACC valve [1] and move the drain can away from the valve.

2) Remove the two bolts [19] that attach the drain can (close port) [16] to the HPTACC valve [1] and move the drain can away from the valve.

(e) Disconnect the fuel tube-hose (open port) [13] from the HPTACC valve [1].

(f) Remove and discard the preformed packing [18] from the face of the drain can (open port) [14].

(g) Remove and discard the preformed packing [17] from the fuel tube-hose (open port) [13] packing groove.

(h) Disconnect the fuel tube-hose (close port) [15] from the HPTACC valve [1].

(i) Remove and discard the preformed packing [18] from the face of the drain can (close port) [16].

(j) Remove and discard the preformed packing [17] from the fuel tube-hose (close port) [15] packing groove.

SUBTASK 75-24-04-020-003-H01

(3) Remove the HPTACC valve [1] from the HPTACC duct [4] and the HPTACC valve adapter [27].

(a) Remove the two V-band clamp [22] and V-band clamp [26] that attach the HPTACC valve [1] to the HPTACC duct [4] and the HPTACC valve adapter [27].

(b) Move the HPTACC valve adapter [27] forward and remove the HPTACC valve [1].

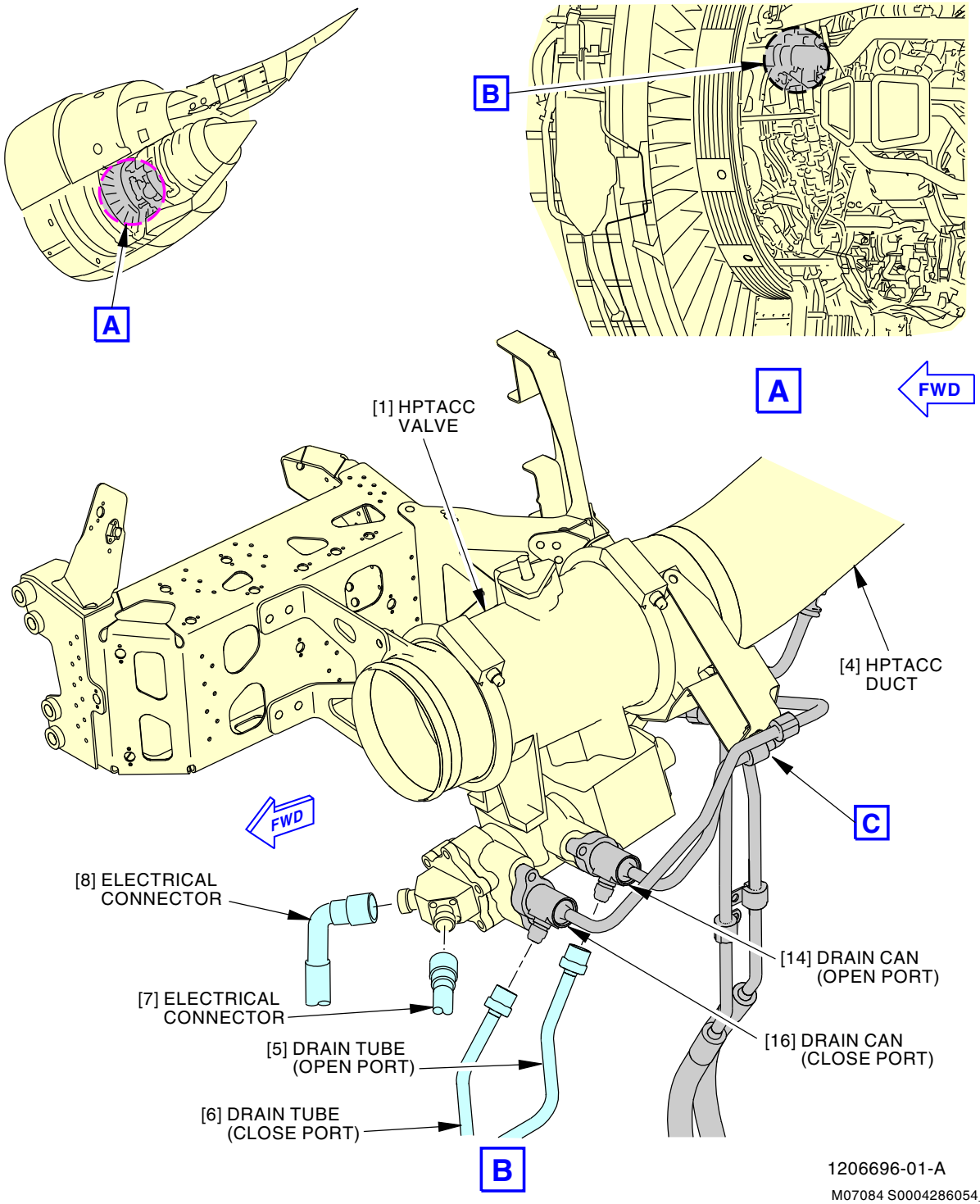
(c) Remove the E-Seal [23] and E-Seal [25] from the HPTACC valve [1].

1) Do a visual check of the E-seals for obvious damage. Use the E-seals for the installation task if you do not see damage.

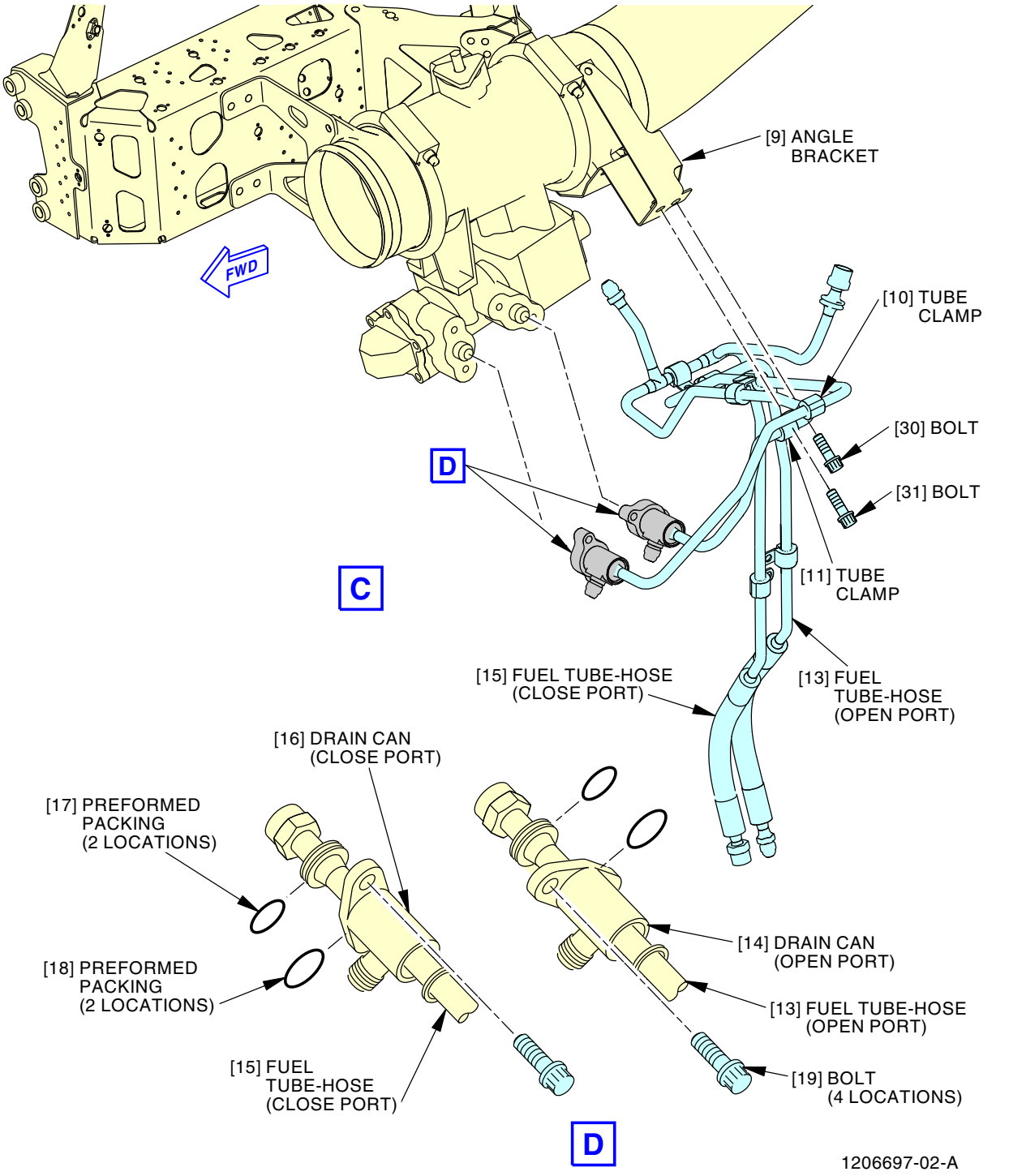
SUBTASK 75-24-04-020-004-H01

(4) Install protective covers on all tubes and openings.

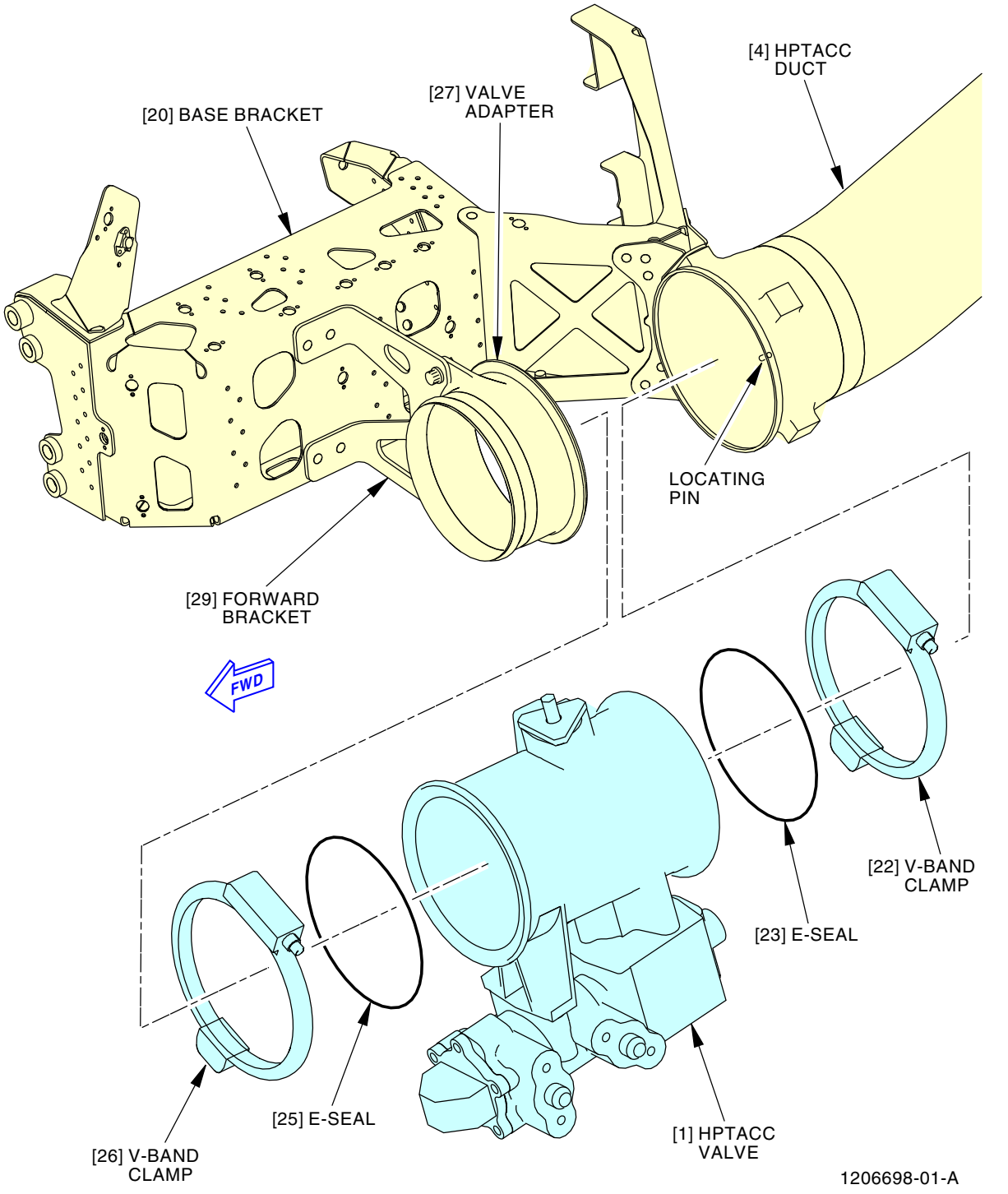
——— END OF TASK ———



High Pressure Turbine Active Clearance Control (HPTACC) Valve Installation
Figure 401/75-24-04-990-801-H01 (Sheet 1 of 3)



High Pressure Turbine Active Clearance Control (HPTACC) Valve Installation
Figure 401/75-24-04-990-801-H01 (Sheet 2 of 3)



High Pressure Turbine Active Clearance Control (HPTACC) Valve Installation
Figure 401/75-24-04-990-801-H01 (Sheet 3 of 3)

TASK 75-24-04-400-801-H01

3. High Pressure Turbine Active Clearance Control (HPTACC) Valve Installation

A. General

(1) This procedure is the installation task for the high pressure turbine active clearance control (HPTACC) valve (referred to as the HPTACC valve).

(2) You must do the tests that are listed in the power plant test reference table after you install the HPTACC valve.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
D00071	Oil - Aircraft Turbine Engine, Synthetic Base	MIL-PRF-7808 Grade 3

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	HPTACC valve	75-24-04-03A-015	ARO ALL
17	Preformed packing	73-11-51-18-077	ARO ALL
18	Preformed packing	73-11-51-18-080	ARO ALL
23	E-Seal	75-24-04-03C-105	ARO ALL
25	E-Seal	75-24-04-03C-035	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

H. HPTACC Valve Installation

SUBTASK 75-24-04-420-001-H01

(1) Remove the protective covers from all tubes and openings.

SUBTASK 75-24-04-210-001-H01

(2) Make sure the lockout pin on the HPTACC valve is in the stowed position.

SUBTASK 75-24-04-420-002-H01

(3) Attach the HPTACC valve [1] to the HPTACC duct [4] and the HPTACC valve adapter [27]: (Figure 401).

(a) Install the E-Seal [23] and E-Seal [25] into the HPTACC valve [1].

(b) Put the HPTACC valve [1] in its position on the HPTACC duct [4] and the HPTACC valve adapter [27].

1) Align the HPTACC duct [4] locating pin with HPTACC valve adapter [27].

(c) Hold the HPTACC valve [1] and install the aft V-band clamp [22].

1) Push the retainer link over the opposite V-band half.

(d) Hold the HPTACC valve [1] and install the forward V-band clamp [26].

1) Push the retainer link over the opposite V-band half.

(e) Tighten nuts for the V-band clamp [22] and V-band clamp [26] with your hand only.

(f) Tighten the nuts for the V-band clamp [22] and V-band clamp [26] to 115-125 pound-inches (13.0-14.1 Newton-meters) (TASK 70-51-00-910-801-H01).

SUBTASK 75-24-04-420-003-H01

(4) Connect the fuel tube-hose (open port) [13] and the fuel tube-hose (close port) [15] to the HPTACC valve [1] (Figure 401).

(a) Lubricate the two new preformed packings [17] and the two new preformed packings [18] with clean oil, D00071.

(b) Install a preformed packing [17] in the tube-hose packing groove on the fuel tube-hose (open port) [13] and fuel tube-hose (close port) [15].

(c) Install a preformed packing [18] in the groove on the drain can (open port) [14] and the drain can (close port) [16].

(d) Connect the fuel tube-hose (open port) [13] to the HPTACC valve [1].

1) Tighten the fuel tube-hose (open port) [13] with the triple torque method as follows:

a) Tighten the B-nut connection to 262 in-lb (30 N·m)-308 in-lb (35 N·m).

b) Loosen the B-nut of the fuel tube-hose and tighten it again to 262 in-lb (30 N·m)-308 in-lb (35 N·m).

c) Apply the specified torque again to make sure the torque of the B-nut of the oil tube/hose is 262 in-lb (30 N·m)-308 in-lb (35 N·m).

(e) Connect the fuel tube-hose (close port) [15] to the HPTACC valve [1].

1) Tighten the fuel tube-hose (close port) [15] with the triple torque method as follows:

a) Tighten the B-nut connection to 262 in-lb (30 N·m)-308 in-lb (35 N·m).

b) Loosen the B-nut of the fuel tube-hose and tighten it again to 262 in-lb (30 N·m)-308 in-lb (35 N·m).

c) Apply the specified torque again to make sure the torque of the B-nut of the oil tube/hose to 262 in-lb (30 N·m)-308 in-lb (35 N·m).

SUBTASK 75-24-04-420-004-H01

(5) Move the drain can (open port) [14] forward to the HPTACC valve [1] and install the two bolts [19].

(a) Tighten the bolts [19] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-24-04-420-005-H01

(6) Move the drain can (close port) [16] forward to the HPTACC valve [1] and install the two bolts [19].

(a) Tighten the bolts [19] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-24-04-420-006-H01

(7) Connect the drain tube (open port) [5] to the drain can (open port) [14].

(a) Tighten the B-nut (TASK 70-51-00-910-801-H01).

SUBTASK 75-24-04-420-007-H01

(8) Connect the drain tube (close port) [6] to the drain can (close port) [16].

(a) Tighten the B-nut (TASK 70-51-00-910-801-H01).

SUBTASK 75-24-04-420-008-H01

(9) Attach the fuel tube-hose (open port) [13] to the angle bracket [9] with tube clamp [11] and bolt [31].

(a) Tighten the bolt [31] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 75-24-04-420-010-H01

(10) Attach the fuel tube-hose (close port) [15] to the angle bracket [9] with tube clamp [10] and bolt [30].

(a) Tighten the bolt [30] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 75-24-04-420-009-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(11) Use teflon-jawed pliers, STD-664 to connect the electrical connector [7] and electrical connector [8] to the HPTACC valve [1](TASK 70-00-01-400-807-H01).

(a) Remove the protective covers from the valve electrical receptacles and the electrical connector [7] and electrical connector [8].

(b) Put the electrical connector [7] and electrical connector [8] in their positions on the HPTACC valve [1].

1) Tighten the electrical connector [7] and electrical connector [8].

I. Put the Airplane Back to its Usual Condition.

SUBTASK 75-24-04-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-24-04-860-002-H01

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

J. High Pressure Turbine Active Clearance Control Valve Installation Test

SUBTASK 75-24-04-710-002-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

LOW PRESSURE TURBINE ACTIVE CLEARANCE CONTROL (LPTACC) AIR MANIFOLD PANELS - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Removal

(2) Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation

NOTE: You will need to perform an idle leak check task TASK 71-00-00-700-804-H01 at the end of this procedure before returning the engine to service.

TASK 75-24-05-000-801-H00

2. Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Removal

(Figure 401)

A. General

(1) This task gives instructions on how to remove the Low Pressure Turbine Active Clearance Control (LPTACC) air manifold panels located at 1 o'clock position, 3 o'clock position, 5 o'clock position, 6 o'clock position, 7 o'clock position, 9 o'clock position and 11 o'clock position Aft, looking forward (ALF).

(2) Before you start the removal of the LPTACC air manifold panels, you must let the engine cool down for a minimum of 3 hours or until the turbine reaches ambient temperature.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-205	Container - Oil Resistant, 5 U.S.-Gal (19 l)

D. Consumable Materials

Reference	Description	Specification
D50228 [C02-053]	Oil - Penetrating	

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
67	Nut	75-24-01-02A-050	ARO ALL
70	Washer	75-24-01-02A-045	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

H. Prepare for Inspection

SUBTASK 75-24-05-010-001-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task: Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00.

Open these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task: Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00.

Open these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

I. Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Removal

WARNING ALWAYS USE APPROVED EQUIPMENT AND PROCEDURES TO LIFT PARTS. STAY OUT FROM BELOW LOADS. IF THE PARTS ACCIDENTALLY MOVE OR FALL, THEY CAN CAUSE INJURY OR DAMAGE TO EQUIPMENT.

(WARNING PRECEDES)

NOTE: If bolts and nuts are in serviceable condition, you can use them for installation.

NOTE: For engines post SB 777-GE100-72-0442 it is recommended to replace removed nuts [67], nuts [68] and nuts [69] with new hardware.

SUBTASK 75-24-05-010-002-H00

(1) Remove the oil drain tube [1] as follows:

(a) Put a 5 U.S.-gal (19 l) oil resistant container, STD-205 below the oil drain tube [1].

(b) Disconnect oil drain tube [1] from the drain manifold [2].

(c) Disconnect the B-nut from the long end of the drain tube from the straight fitting of the drain manifold [10].

(d) Remove bolts [5] and bolt [6] from clamps [4] on support bracket [3], support bracket [7], support bracket [8] and support bracket [9].

SUBTASK 75-24-05-010-003-H00

(2) Remove the clamps hose clamp [11], hose clamp [12], hose clamp [13], hose clamp [14], hose clamp [15], hose clamp [16], hose clamp [17], hose clamp [18], hose clamp [19] and hose clamp [20] on the air tube [21], air tube [22], air tube [23], air tube [24], air tube [25], air tube [26] and air tube [27] between the air manifold [28], air manifold [29], air manifold [30], air manifold [31], air manifold [32], air manifold [33] and air manifold [34].

SUBTASK 75-24-05-010-005-H00

(3) Remove the air tube [21], air tube [22], air tube [23], air tube [24], air tube [25], air tube [26], and air tube [27] between the air manifold [28], air manifold [29], air manifold [30], air manifold [31], air manifold [32], air manifold [33], and air manifold [34].

SUBTASK 75-24-05-010-004-H00

(4) Remove the oil scavenge tube [35], as follows:

(a) Put a 5 U.S.-gal (19 l) oil resistant container, STD-205 below the oil scavenge tube [35].

(b) Detach the oil scavenge tube [35] from the fitting on the turbine rear frame No.5 bearing oil scavenge tube at the 5 o'clock position.

(c) Remove bolt [41], nut [42] and gasket [40] between oil scavenge tube [35] and oil tube [39].

(d) Remove bolt [36] from retaining strap [37] on support bracket [38] and support bracket [3].

SUBTASK 75-24-05-010-006-H00

(5) Remove the oil supply tube [43], as follows:

ARO ALL PRE SB 777-GE100-79-0012

(a) Remove bolts [53] and nuts [54] from loop clamps [52] on spray shield [50] and spray shield [51] on both ends of the oil supply tube [43].

(b) Remove loop clamps [52] from both ends of the oil supply tube [43].

ARO ALL POST SB 777-GE100-79-0012

(c) Remove hose clamps [55] from spray shield [50] and spray shield [51] on both ends of the oil supply tube [43].

ARO ALL

(d) Remove spray shield [50] and spray shield [51] on both ends of the oil supply tube [43].

(e) Put a 5 U.S.-gal (19 l) oil resistant container, STD-205 below the oil supply tube [48].

(f) Disconnect the B-nut from the oil supply tube [43] and the oil supply manifold [49].

(g) Remove bolts [44] from loop clamps [45] at support bracket [3], support bracket [8], support bracket [46] and support bracket [47].

SUBTASK 75-24-05-010-007-H00

WARNING REFER TO THE PRODUCT LABEL AND THE MANUFACTURER'S (MATERIAL) SAFETY DATA SHEET FOR INSTRUCTIONS ON THE HAZARDS, STORAGE, SAFE HANDLING AND PROPER USE OF THESE PRODUCTS.

CAUTION LET THE PENETRATING OIL SOAK BEFORE YOU LOOSEN THE NUTS OR DAMAGE TO THE STUD BOLTS CAN OCCUR.

CAUTION DO NOT USE POWER TOOLS TO LOOSEN THE NUTS THAT ATTACH THE LPT ACC AIR MANIFOLDS TO THE CASE OR DAMAGE TO THE STUD BOLTS CAN OCCUR.

(6) Remove eductor air tube [56], as follows:

(a) Remove bolt [58] and nut [57] and c-seal plate [59] from the eductor air tube [56] flange at the turbine rear frame.

(b) Remove the v retainer coupling [62] and seal [63] from the eductor air tube [56] and the eductor air tube [65].

(c) Remove bolts [61] from loop clamps [60] on support bracket [64] and support bracket [66].

(d) Apply penetrating oil, D50228 [C02-053] to 30 nuts (2A, 2B) that attach the seven LPTACC air manifold [28], air manifold [29], air manifold [30], air manifold [31], air manifold [32] and air manifold [33] to the LPT case.

NOTE: For engines with SB 72-0442 Low Pressure Turbine (LPT): If damage to the LPT case internal anchor nuts occurs, you must disassemble the LPT rotor/stator module to replace the nuts.

1) It is recommended that the penetrating oil, D50228 [C02-053] soak into threads as long as possible, not less than 5 hours.

ARO ALL PRE SB 777-GE100-72-0442

(e) Remove the nuts [68] and nuts [69] on support bracket [3] and support bracket [66].

(f) Remove support bracket [3] and support bracket [66].

(g) Remove the nut [67] and washer [70] from the LPTACC air manifold [28], air manifold [29], air manifold [30], air manifold [31], air manifold [32], air manifold [33] and air manifold [34] panels.

(h) Remove the LPTACC air manifold [28], air manifold [29], air manifold [30], air manifold [31], air manifold [32], air manifold [33] and air manifold [34].

ARO ALL POST SB 777-GE100-72-0442

CAUTION HOLD THE STUD WITH HEX KEY TO LOOSEN THE NUTS THAT ATTACH THE LPTACC AIR MANIFOLDS TO THE CASE. IF NOT, DAMAGE TO THE STUD BOLTS CAN OCCUR.

(i) Apply penetrating oil, D50228 [C02-053] again, before disassembly to the nuts to be removed (2A, 2B) that attach the seven LPTACC air manifold [28], air manifold [29], air manifold [30], air manifold [31], air manifold [32], air manifold [33] and air manifold [34] to the LPT case.

(j) Remove the nuts [68] and support bracket [3], nuts [69] and support bracket [66], and nuts [67] and washers [70] as follows:

1) Hold the stud [72] with the hexagonal 1/8 inch drive socket so that the torque does not go through the stud to the internal anchor nut. Refer to Figure 401 (Sheet 9) for hexagonal 1/8 inch drive socket example.

2) Loosen the nut manually. If you cannot loosen the nut because hexagonal torque bit is rounded as a result of the high torque, refer to operation c. If you successfully do the loosening procedure, refer to operation d. and skip the operation

NOTE: The hexagonal torque bit must be changed every two studs as it gets worn and will round easily.

3) If necessary, grind the nut with a ball end grinder. Refer to Figure 401 (Sheet 10):

a) Grind the bottom of the nut carefully as follows:

<1> Use a ball end mill of 0.118 in. (3.00 mm) diameter.

<2> Grind the bottom of the nut and make sure not to damage the stud threads.

NOTE: Material removal on the washer is permitted, but not through the thickness.

b) Loosen the nut with the hexagonal 1/8 inch drive socket to hold the stud. Refer to operation b.

c) Discard ground nut [67] and washer [70].

(k) Remove the LPTACC air manifold [28], air manifold [29], air manifold [30], air manifold [31], air manifold [32], air manifold [33] and air manifold [34] panels.

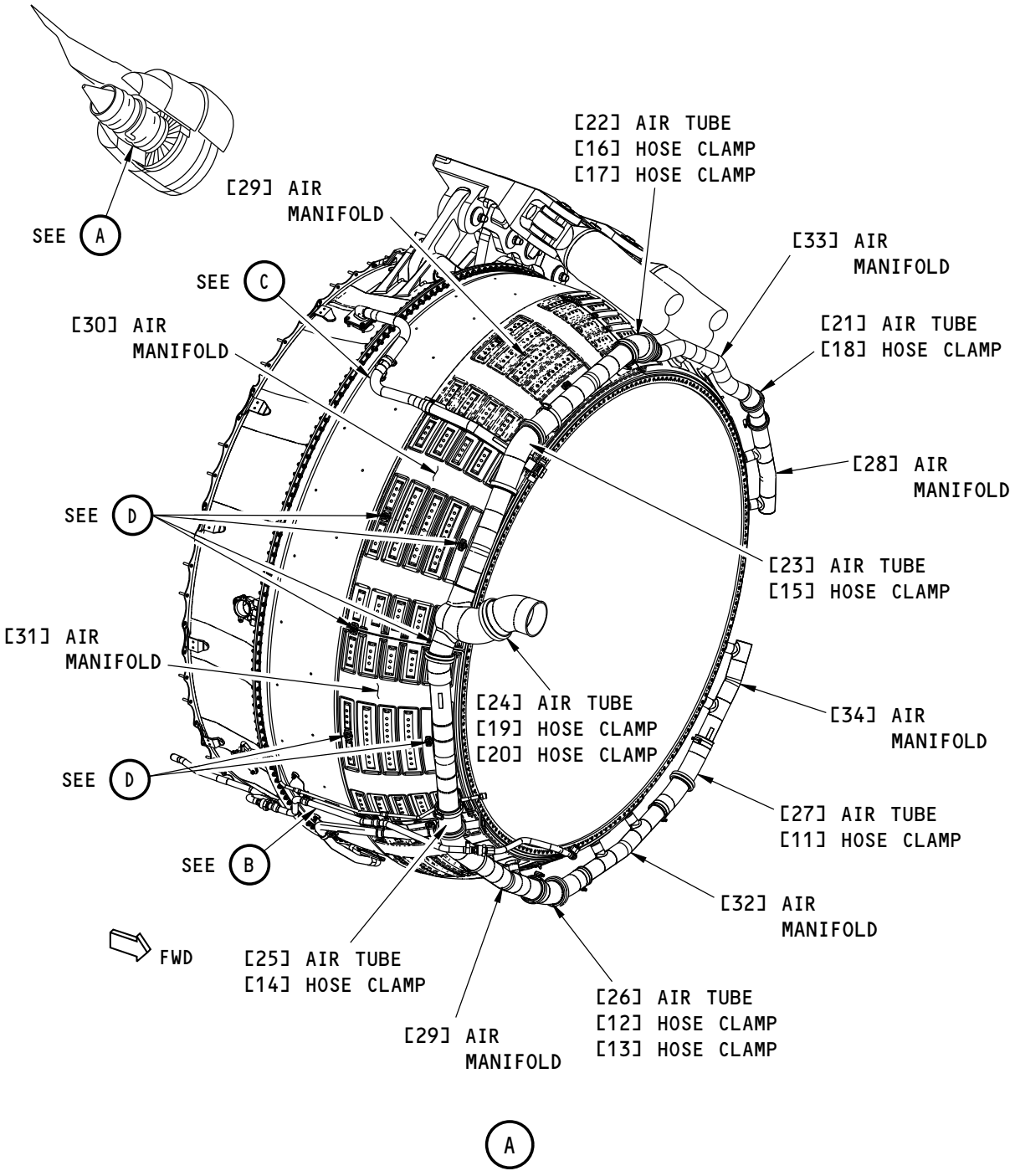
(l) For stud [72] locations where grinding procedure was done (per operation 3), do a visual inspection of the threads on the stud as follows:

1) No damage to the threads is permitted.

NOTE: If the threads are damaged, the part is not repairable by this procedure.

ARO ALL

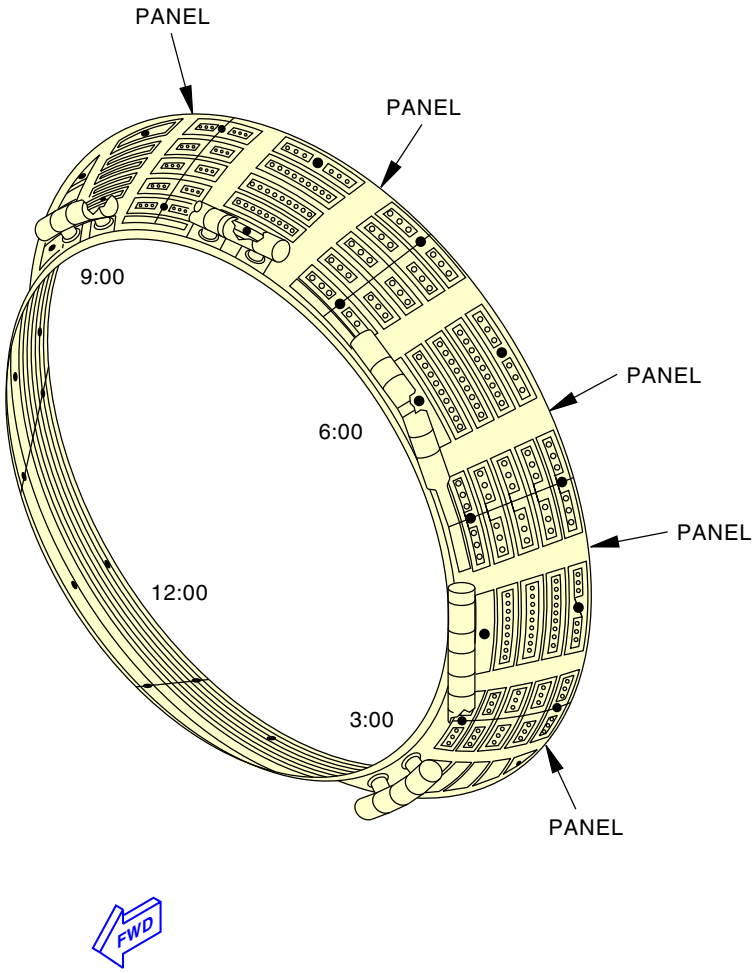
END OF TASK



5025860–00

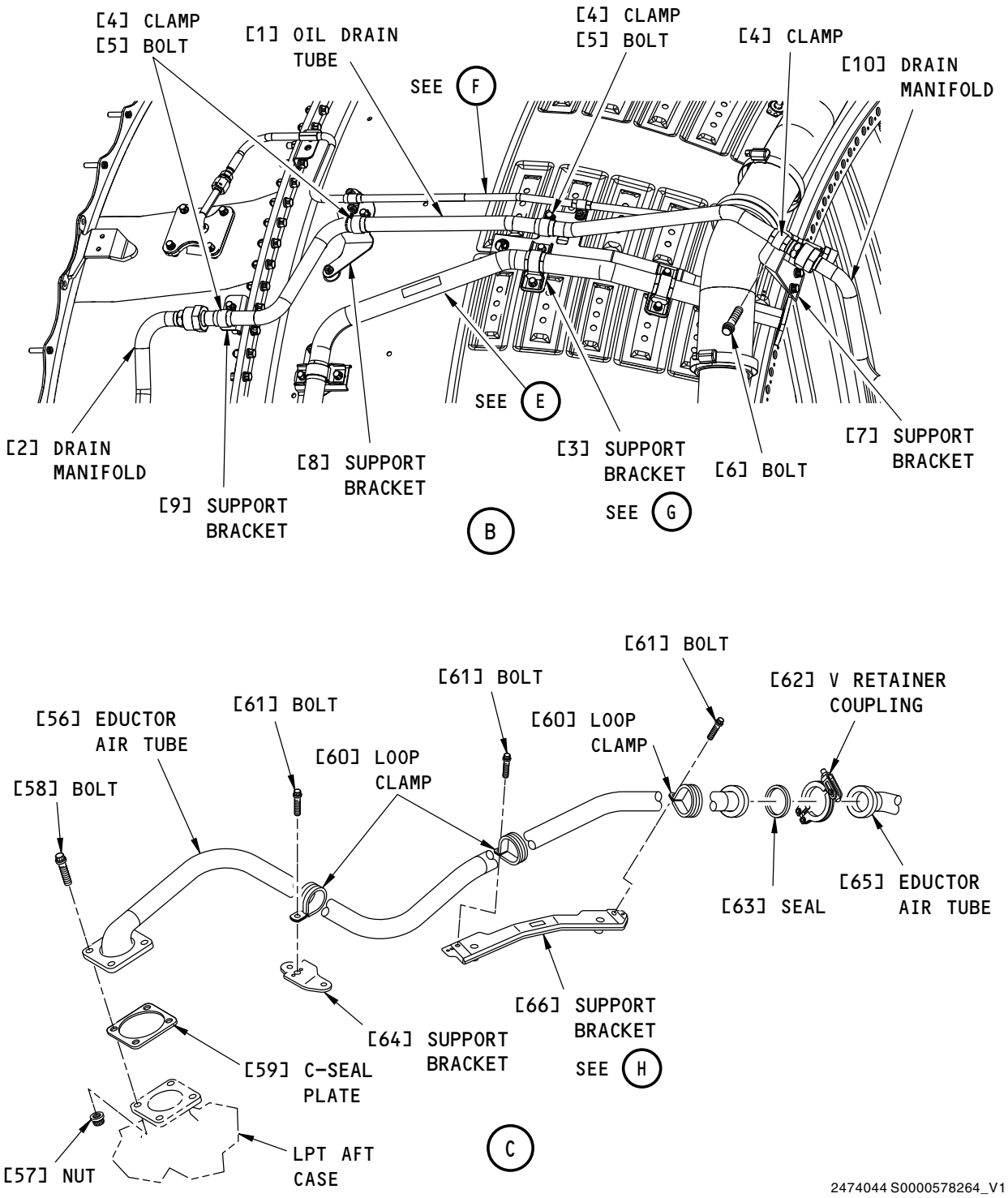
2474043 S0000578263_V1

Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 1 of 10)

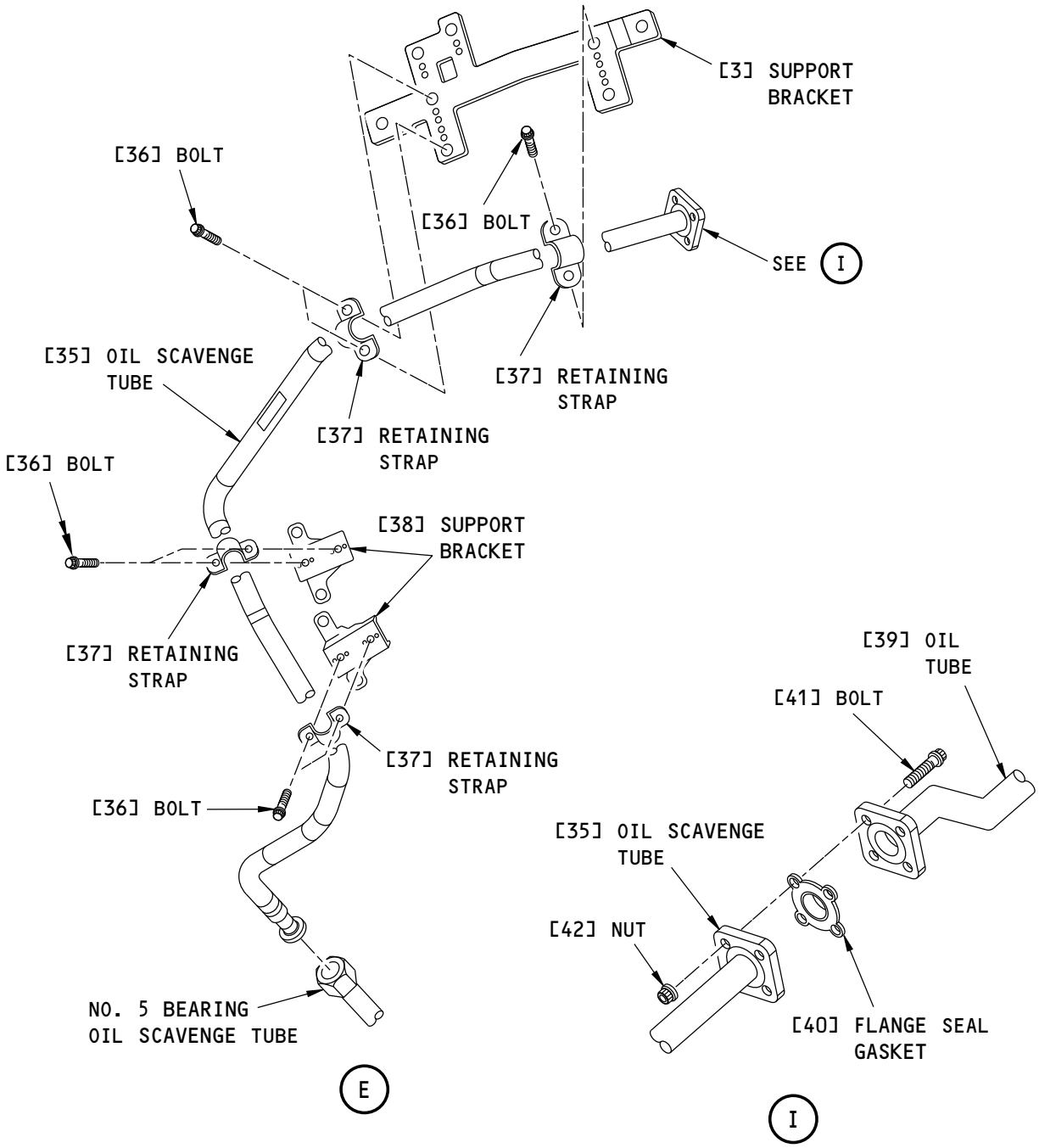


2405557 S0000555333_V3

Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 2 of 10)

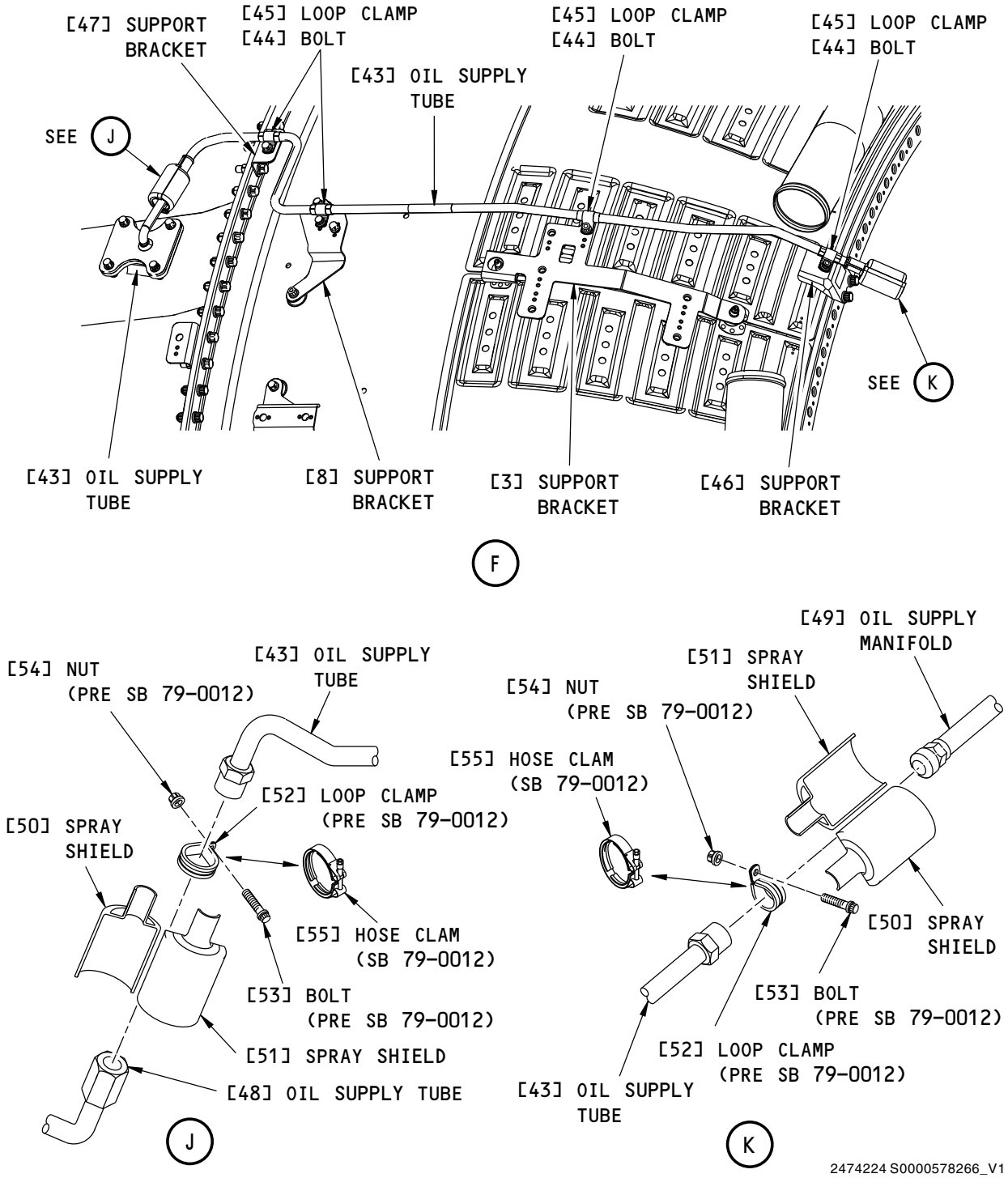


Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 3 of 10)

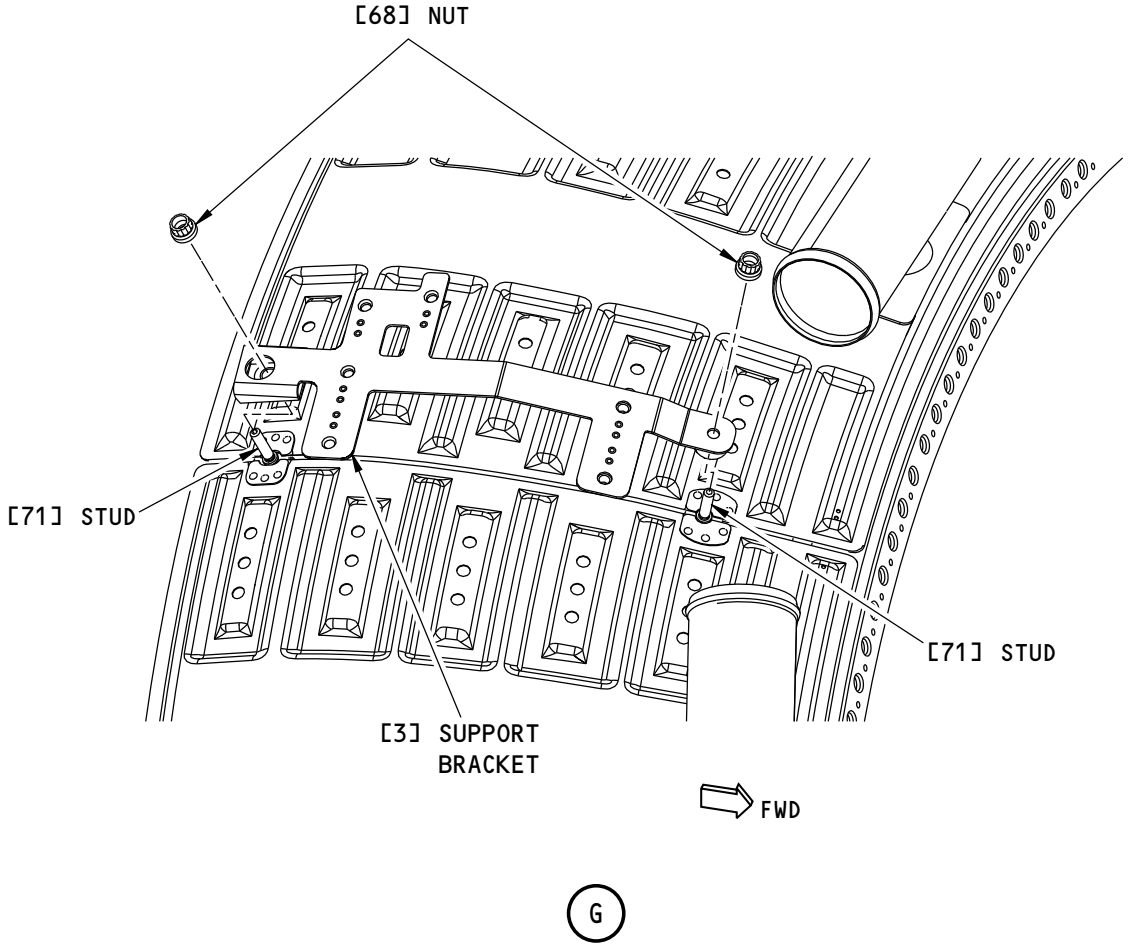


2474203 S0000578265_V1

Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 4 of 10)

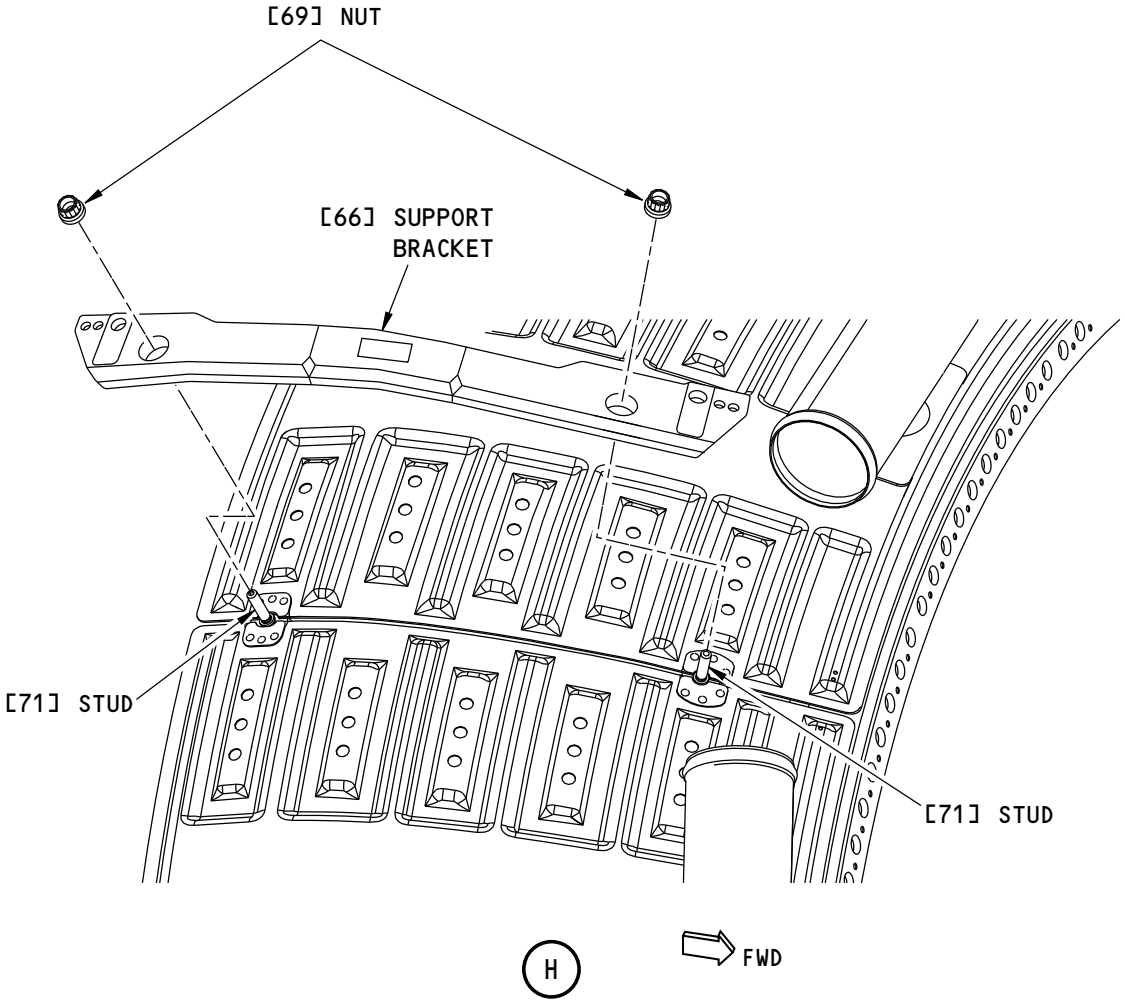


Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 5 of 10)



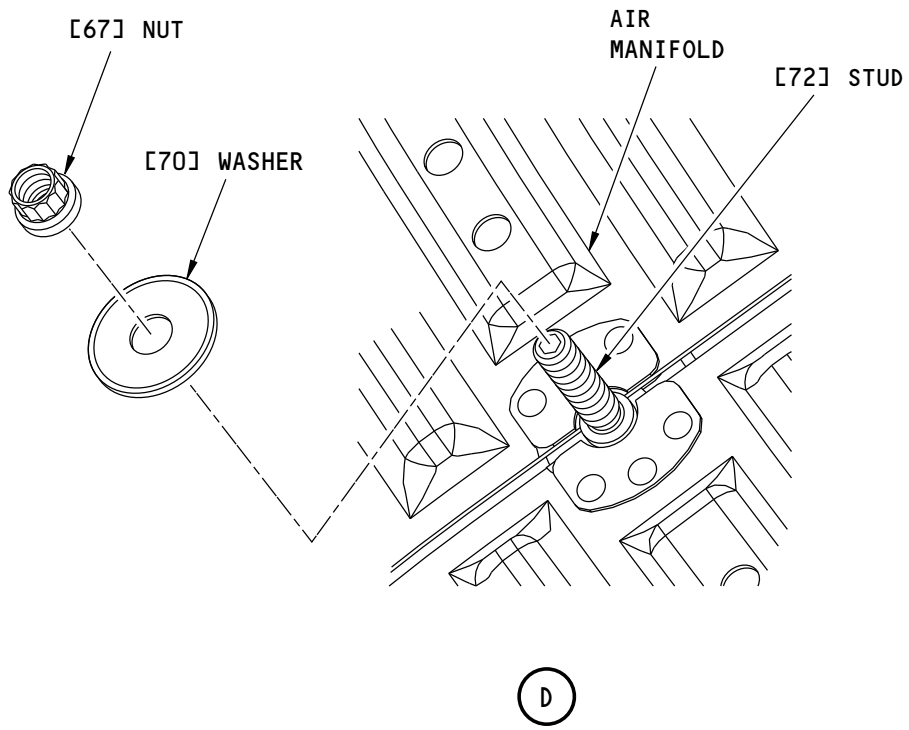
2474261 S0000578267_V1

Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 6 of 10)



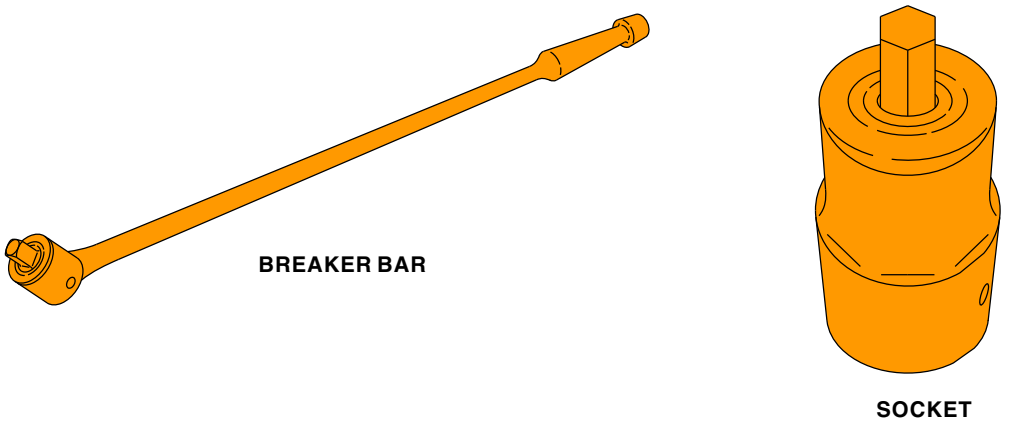
2474287 S0000578268_V1

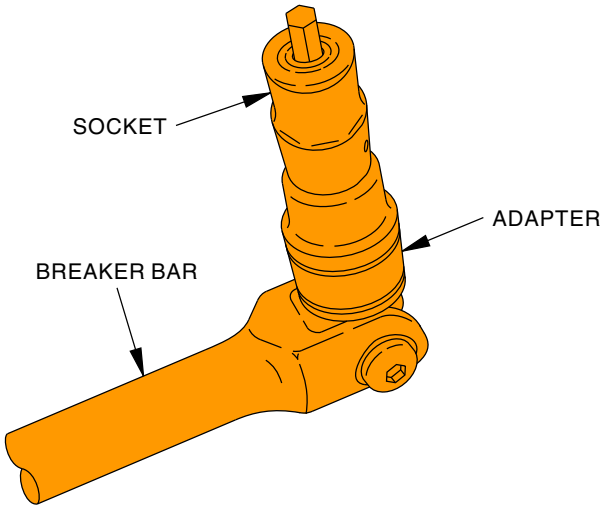
Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 7 of 10)



2474302 S0000578269_V1

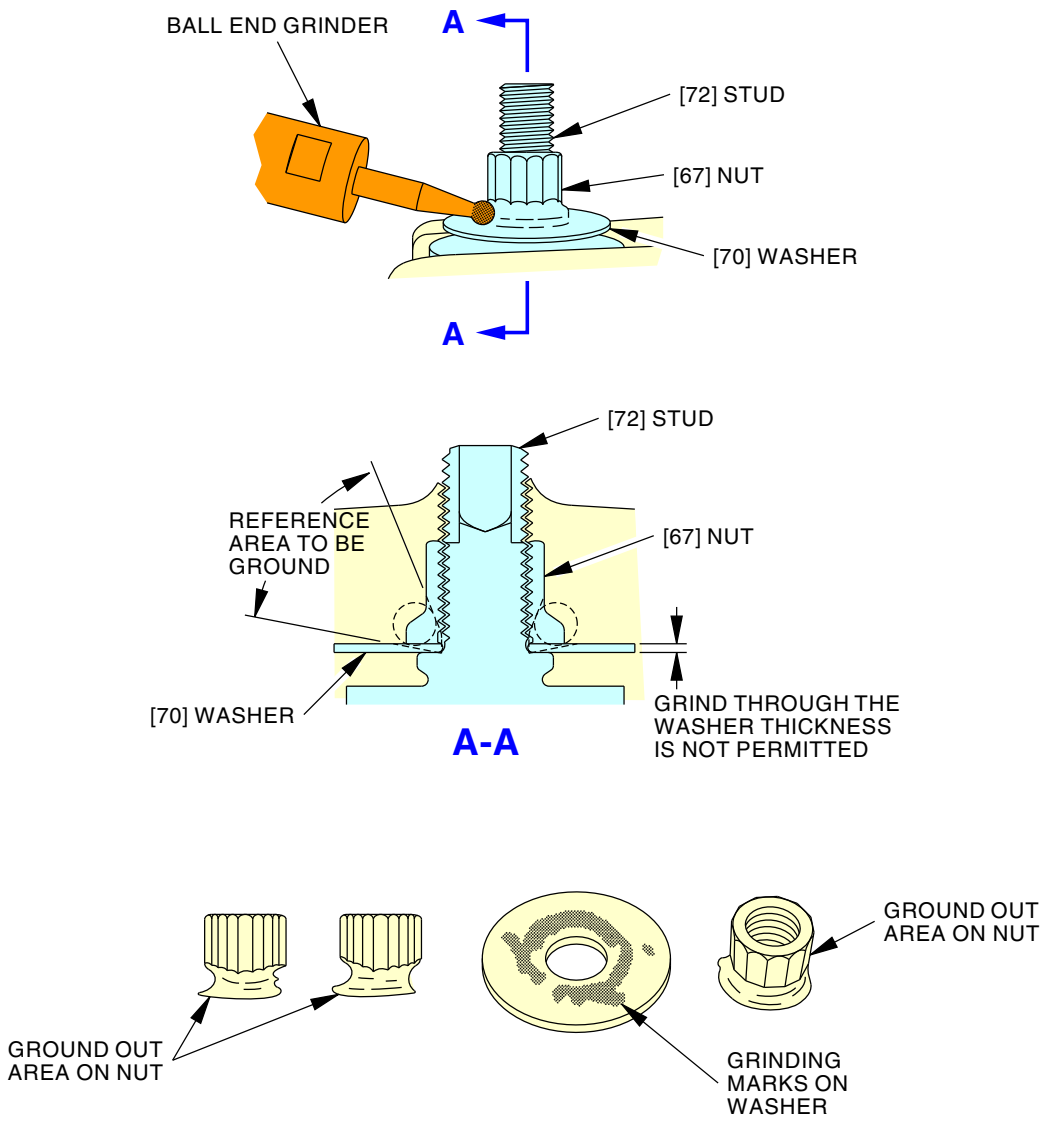
Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 8 of 10)





2804442 S0000642423_V1

Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 9 of 10)



EXAMPLES OF GROUND NUTS WASHER GRINDING NOT PERMITTED THROUGH THE THICKNESS

2804452 S0000642424_V1

Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation
Figure 401/75-24-05-990-801-H00 (Sheet 10 of 10)

TASK 75-24-05-400-801-H00

3. Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation

(Figure 401)

A. General

(1) This task gives instructions on how to install the low pressure turbine active clearance control (LPTACC) air manifold panels located at 1 o'clock position, 3 o'clock position, 5 o'clock position, 6 o'clock position, 7 o'clock, 9 o'clock position and 11 o'clock Aft, looking forward (ALF).

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
71-00-00-700-804-H01	Test No. 5 - Idle Leak Check (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Consumable Materials

Reference	Description	Specification
D50072 [C02-023]	Oil - Engine Lubricating	MIL-PRF-23699

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Installation

SUBTASK 75-24-05-410-001-H00

CAUTION

DO NOT APPLY TOO MUCH TORQUE TO THE ACC PANEL TOP NUTS. DAMAGE TO ACC PANEL STUDS CAN OCCUR.

(1) Attach the air manifolds as follows:

(a) Put the air manifold [33] in position on the studs [72] at the 9 o'clock position (aft as you look forward) of the LPT case.

(b) Loosely attach the washers [70] and the nuts [67] to the studs [72] through the center of the air manifold [33].

(c) Put the air manifold [32] in position on the LPT case at the 7 o'clock position.

(d) Loosely attach the washers [70] and the nuts [67] to the studs [72] through the center of the air manifold [32].

(e) Put the air manifold [29] in position on the LPT case at the 6 o'clock position.

(f) Loosely attach the washers [70] and the nuts [67] to the studs [72] through the center of the air manifold [29].

(g) Put the air manifold [31] in position on the LPT case at the 5 o'clock position.

(h) Loosely attach the washers [70] and the nuts [67] to the studs [72] through the center of the air manifold [31].

(i) Put the air manifold [30] in position on the LPT case at the 3 o'clock position.

(j) Loosely attach nuts [68] to the studs [71] through the center of the air manifold [30].

(k) Put the air manifold [29] in position on the LPT case at the 1 o'clock position.

(l) Loosely attach the washers [70] and the nuts [67] to the studs [72] through the center of the air manifold [29].

(m) Put the air manifold [28] in position on the LPT case at the 11 o'clock position.

(n) Loosely attach the washers [70] and the nuts [67] to the studs [72] through the center of the air manifold [28].

(o) Torque the nuts [67] and nuts [68] to 55 in-lb (6.21 N·m) - 70 in-lb (7.91 N·m).

SUBTASK 75-24-05-410-002-H00

(2) Attach the support bracket [66] as follows:

(a) Put the support bracket [66] on the studs [71] at the 2 o'clock position (aft as you look forward) between air manifold [29] and air manifold [30].

(b) Loosely attach the support bracket [66] on the studs [71] with the nuts [69].

SUBTASK 75-24-05-410-003-H00

(3) Put the support bracket [3] as follows:

(a) Put the support bracket [3] on the two studs [71] at the 5 o'clock position (aft as you look forward) between air manifold [29] and air manifold [31].

(b) loosely attach the support bracket [3] on the studs [71] with the nuts [68].

SUBTASK 75-24-05-410-004-H00

(4) Loosely attach the washers [70] and the nuts [67] to the remaining studs [72] all round the LPT case between the air manifolds.

SUBTASK 75-24-05-410-005-H00

(5) Torque all the nuts [67], nuts [68] and nuts [69] to 55 in-lb (6.21 N·m) - 70 in-lb (7.91 N·m).

SUBTASK 75-24-05-410-006-H00

(6) Attach the eductor air tube [56] as follows:

(a) Attach the loop clamps [60] to support bracket [66] and support bracket [64] with bolts [61].

(b) Put the eductor air tube [56] over support bracket [66] with the flanged end aft.

(c) Put the c-seal plate [59] and the air tube flange on the LPT pad.

1) Tighten the nut [57] and bolt [58] hand-tight.

(d) Install the v retainer coupling [62] and seal [63] on the joint of the eductor air tube [56] and the eductor air tube [65].

(e) Tighten the nut [57] to 109 in-lb (12.3 N·m)-127 in-lb (14.3 N·m).

SUBTASK 75-24-05-410-007-H00

(7) Attach the oil scavenge tube [35] to support bracket [38] and support bracket [3] as follows:

(a) Install retaining strap [37] on the oil scavenge tube [35].

(b) Loosely attach the oil scavenge tube [35] B-nut to the fitting on the turbine rear frame oil scavenge tube at the 5 o'clock position.

(c) Attach the oil scavenge tube [35] and retaining straps [37] with bolts [36] to the support bracket [38] and support bracket [3].

(d) Apply a thin coat of engine lubricating oil, D50072 [C02-023] to the surfaces of the flange seal gasket [40].

(e) Align the flanges of the tube and the oil tube.

(f) Install the gasket between the flanges and attach the flanges together with the bolts [41], bolt heads forward, and the nuts [42].

(g) Torque the nuts [42] to 109 in-lb (12.3 N·m)-127 in-lb (14.3 N·m).

(h) Torque the B-nut on the turbine rear frame No.5 bearing oil scavenge tube with the triple torque method as follows:

1) Torque the B-nut connection to 110 in-lb (12.4 N·m)-940 in-lb (106.2 N·m).

2) Loosen the B-nut of the turbine rear frame No.5 bearing oil scavenge tube and torque it again to 110 in-lb (12.4 N·m)-940 in-lb (106.2 N·m).

3) Do a check of the torque (by reapplying specified torque) of the B-nut of the turbine rear frame No.5 bearing oil scavenge tube to 110 in-lb (12.4 N·m)-940 in-lb (106.2 N·m).

SUBTASK 75-24-05-410-008-H00

(8) Install the oil supply tube [43] on the bottom of the LPT case at the 5 o'clock position as follows:

(a) Connect the B-nut on the oil supply tube [48] on the bottom right side of the LPT to the fitting on the aft end of the oil supply tube [43].

1) Tighten the B-nut hand-tight.

(b) Connect the B-nut on the forward end of the oil supply tube [43] to the fitting on the aft end of the oil supply manifold [49] at the support bracket [46].

(c) Put a loop clamp [45] around the oil supply tube [43] at the support bracket [46].

(d) Attach the loop clamp [45] to the support bracket [46] with the bolt [44].

1) Apply a thin coat of engine lubricating oil, D50072 [C02-023] to the bolt [44].

2) Tighten the bolt [44] hand-tight.

(e) Put a loop clamp [45] around the oil supply tube [43] at the support bracket [3].

(f) Attach the loop clamp [45] to the support bracket [3] with the bolt [44].

1) Apply a thin coat of engine lubricating oil, D50072 [C02-023] to the bolt [44].

2) Tighten the bolt [44] hand-tight.

(g) Put a loop clamp [45] around the oil supply tube [43] at the support bracket [8].

(h) Attach the loop clamp [45] to the support bracket [8] with the bolt [44].

1) Apply a thin coat of engine lubricating oil, D50072 [C02-023] to the bolt [44].

2) Tighten the bolt [44] hand-tighten.

(i) Put a loop clamp [45] around the oil supply tube [43] at the support bracket [47] on the LPT/TRF flanges.

(j) Attach the loop clamp [45] to the support bracket [47] with the bolt [44].

1) Apply a thin coat of engine lubricating oil, D50072 [C02-023] to the bolt [44].

2) Tighten the bolt [44] hand-tight.

SUBTASK 75-24-05-410-009-H00

(9) Torque the B-nut at the oil supply tube [43] connection to the oil supply manifold [49] applying the triple torque method as follows:

(a) Torque the B-nut at the oil supply tube [43] connection to the oil supply manifold [49] to 262 in-lb (29.6 N·m)-308 in-lb (34.8 N·m).

(b) Loosen the B-nut at the oil supply tube [43] connection to the oil supply manifold [49] and torque it again to 262 in-lb (29.6 N·m)-308 in-lb (34.8 N·m).

(c) Do a check of the torque (by reapplying specified torque) of the B-nut at the oil supply tube [43] connection to the oil supply manifold [49] to 262 in-lb (29.6 N·m)-308 in-lb (34.8 N·m).

SUBTASK 75-24-05-410-010-H00

(10) Torque the B-nut at the oil supply tube [48] connection to the oil supply manifold [49] applying the triple torque method, as follows:

(a) Torque the B-nut at the oil supply tube [48] connection to the oil supply manifold [49] to 262 in-lb (29.6 N·m)-308 in-lb (34.8 N·m).

(b) Loosen the B-nut at the oil supply tube [48] connection to the oil supply manifold [49] and torque it again to 262 in-lb (29.6 N·m)-308 in-lb (34.8 N·m).

(c) Do a check of the torque (by reapplying specified torque) of the B-nut at the oil supply tube [48] connection to the oil supply manifold [49] again to 262 in-lb (29.6 N·m)-308 in-lb (34.8 N·m).

SUBTASK 75-24-05-410-011-H00

(11) Torque the bolts [44] to 55 in-lb (6.2 N·m)-70 in-lb (7.9 N·m).

SUBTASK 75-24-05-400-004-H00

(12) Install the spray shield [50] and spray shield [51] as follows:

(a) Install the spray shield halves on the oil supply tube [43] connection to the oil supply tube [48] and oil supply manifold [49] at the B-nut.

ARO ALL PRE SB 777-GE100-79-0012

(b) Attach the spray shield [50] and spray shield [51] with the loop clamp [52], bolt [53], and nut [54].

1) Apply a thin coat of engine lubricating oil, D50072 [C02-023] to the bolt [53].

2) Torque the nut [54] to 55 in-lb (6.2 N·m)-70 in-lb (7.9 N·m).

ARO ALL POST SB 777-GE100-79-0012

(c) Install the spray shield [50] and spray shield [51] on the oil supply tube [43] connection to the oil supply manifold [49] at the B-nut.

(d) Attach the spray shield [50] and spray shield [51] with the hose clamp [55].

(e) Torque the hose clamp [55] to 55 in-lb (6.2 N·m)-70 in-lb (7.9 N·m).

(f) Install the spray shield [50] and spray shield [51] on the oil supply tube [43] connection to the oil supply manifold [49] at the B-nut.

ARO ALL POST SB 777-GE100-79-0012 (Continued)

(g) Attach the spray shield [50] and spray shield [51] with the hose clamp [55].

(h) Torque the hose clamp [55] to 55 in-lb (6.2 N·m)-70 in-lb (7.9 N·m).

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SUBTASK 75-24-05-410-012-H00

(13) Install the air tubes between two adjacent air manifolds as follows:

(a) Put the air tube [27] into position between the air manifold [32] and air manifold [33] with the hose clamp [11].

(b) Torque the hose clamp [11] bolts to 32 in-lb (3.6 N·m)-38 in-lb (4.3 N·m).

(c) Put the air tube [26] into position in the air manifold [32] with the hose clamp [12].

(d) Put the air tube [26] into position in the air manifold [29] with the hose clamp [13].

(e) Torque the hose clamp (6B, 6A) bolts to 32 in-lb (3.6 N·m)-38 in-lb (4.3 N·m).

(f) Put the air tube [25] into position in the air manifold [29] with the hose clamp [14].

(g) Put the air tube [25] into position in the air manifold [31] with the hose clamp [14].

(h) Torque the hose clamp [14] bolts to 32 in-lb (3.6 N·m)-38 in-lb (4.3 N·m).

(i) Put the air tube [23] into position in the air manifold [30] with the hose clamp [15].

(j) Put the air tube [23] into position in the air manifold [29] with the hose clamp [15].

(k) Torque the hose clamp [15] bolts to 32 in-lb (3.6 N·m)-38 in-lb (4.3 N·m).

(l) Put the air tube [22] into position in the air manifold [29] with the hose clamp [16].

(m) Put the air tube [22] into position in the air manifold (1G) with the hose clamp [17].

(n) Torque the hose clamp [16] and hose clamp [17] bolts to 32 in-lb (3.6 N·m)-38 in-lb (4.3 N·m).

(o) Put the air tube [21] into position in the air manifold (1G) with the hose clamp [18].

(p) Put the air tube [21] into position in the air manifold [28] with the hose clamp [18].

(q) Torque the hose clamp [18] bolts to 32 in-lb (3.6 N·m)-38 in-lb (4.3 N·m).

SUBTASK 75-24-05-410-013-H00

(14) Install the LPT flexible joint (flex joint) (air tube [24]) as follows:

(a) Put the hose clamp [19] on the large end of the flex joint.

(b) Put a hose clamp [20] on each of the small ends of the flex joint.

(c) Put the flex joint in position with the small ends over the open ends of the air manifold [30] and air manifold [31].

(d) Point the large end of the flex joint forward.

1) Tighten the hose clamp [20] bolts hand-tight.

(e) Install the aft end of the air tube in the flex joint (air tube [24]).

1) Tighten the hose clamp [19] bolt hand-tight.

(f) Torque the hose clamp [19] and hose clamp [20] bolts to 32 in-lb (3.6 N·m)-38 in-lb (4.3 N·m).

SUBTASK 75-24-05-410-014-H00

(15) Remove the unwanted part of the hose clamp [11], hose clamp [12], hose clamp [13], hose clamp [14], hose clamp [16], hose clamp [17], and hose clamp [18] straps to no more than 0.5 in. (12.7 mm) of the screw housing.

SUBTASK 75-24-05-410-015-H00

(16) Install the oil drain tube [1] as follows:

(a) Connect the B-nut on the oil drain tube [1] to the TRF drain manifold [2].

(b) Attach the oil drain tube [1] to the support bracket [3], support bracket [8] and support bracket [7] on the LPT case with clamps [4], and bolts [5], and bolt [6].

(c) Torque the bolts [5] to 55 in-lb (6.2 N·m)-70 in-lb (7.9 N·m).

(d) Torque the bolt [6] to 60 in-lb (6.8 N·m)-70 in-lb (7.9 N·m).

(e) Attach the oil drain tube [1] to the support bracket [9] with the clamps [4] and the bolts [5].

(f) Torque the bolts [5] to 55 in-lb (6.2 N·m)-70 in-lb (7.9 N·m).

(g) Connect the B-nut on the long end of the drain tube to the straight fitting end of the Y end of the drain manifold [10].

1) Tighten the B-nut hand-tight.

SUBTASK 75-24-05-410-016-H00

(17) Torque the B-nuts on the aft end of the drain manifold [10] to the oil drain tube [1] using the triple torque method as follows:

(a) Torque the B-nut on the aft end of the drain manifold [10] to the oil drain tube [1] to 78 in-lb (8.8 N·m)-92 in-lb (10.4 N·m).

(b) Loosen the B-nut on the aft end of the drain manifold [10] to the oil drain tube [1] and torque it again to 78 in-lb (8.8 N·m)-92 in-lb (10.4 N·m).

(c) Do a check of the torque (by reapplying specified torque) on the B-nut on the aft end of the drain manifold [10] to the oil drain tube [1] to 78 ft-lb (105.8 N·m)-92 ft-lb (124.7 N·m).

SUBTASK 75-24-05-410-017-H00

(18) Torque the B-nut on the oil drain tube [1] at the TRF drain manifold [2] using the triple torque method as follows:

(a) Torque the B-nut on the oil drain tube [1] at the TRF drain manifold [2] to 78 ft-lb (105.8 N·m)-92 ft-lb (124.7 N·m).

(b) Loosen the B-nut on the oil drain tube [1] at the TRF drain manifold [2] and torque it again to 78 ft-lb (105.8 N·m)-92 ft-lb (124.7 N·m).

(c) Do a check of the torque (by reapplying specified torque) on the B-nut on the aft end of the drain manifold [10] to the oil drain tube [1] to 78 ft-lb (105.8 N·m)-92 ft-lb (124.7 N·m).

SUBTASK 75-24-05-700-001-H00

(19) Do required engine tests to return the engine to a serviceable condition. Refer to the GE90-100 Boeing 777 AMM, Test No. 5 - Idle Leak Check, TASK 71-00-00-700-804-H01.

G. Put the Airplane Back to its Usual Condition

SUBTASK 75-24-05-840-001-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSER. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left and right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———

LOW PRESSURE TURBINE ACTIVE CLEARANCE CONTROL (LPTACC) AIR MANIFOLD PANELS - INSPECTION/CHECK

1. General

A. This procedure has one task:

(1) The inspection/check of the low pressure turbine active clearance control (LPTACC) air manifold panels located at 1 o'clock position, 3 o'clock position, 5 o'clock position, 6 o'clock position, 7 o'clock position, 9 o'clock position and 11 o'clock position, aft looking forward (ALF).

(2) Before you start the inspection of the LPTACC air manifold panels, you must let the engine cool down for a minimum of 3 hours or until the turbine reaches ambient temperature.

TASK 75-24-05-200-801-H00

2. Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels - Inspection/Check

A. General

(1) This task is the inspection/check of the low pressure turbine active clearance control (LPTACC) air manifold panels.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
75-24-05-000-801-H00	Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Removal (P/B 401)
75-24-05-400-801-H00	Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

(Continued)

Number	Name/Location
426AR	Right Thrust Reverser, Right Engine

E. Prepare for the Inspection/Check

SUBTASK 75-24-05-860-001-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task: Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00.

Open these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task: Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00.

Open these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Inspection

SUBTASK 75-24-05-210-001-H00

(1) Do a visual inspection of each LPTACC panel and its mounting locations as follows:

(a) Move the LPTACC air manifold (panel) clockwise in the circumferential direction.

1) Make sure that the panel does not disengage from any of the washers on the mounting studs.

a) If the panel disengages from any of the washers on the mounting studs, replace the LPTACC air manifold panel. These are the tasks:

- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Removal, TASK 75-24-05-000-801-H00
- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation, TASK 75-24-05-400-801-H00.

(b) Move the LPTACC air manifold (panel) counterclockwise in the circumferential direction.

1) Make sure that the panel does not disengage from any of the washers on the mounting studs.

a) If the panel disengages from any of the washers on the mounting studs, replace the LPTACC air manifold panel. These are the tasks:

- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Removal, TASK 75-24-05-000-801-H00
- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation, TASK 75-24-05-400-801-H00.

(c) Move the LPTACC air manifold (panel) forward in the axial direction.

1) Make sure that the panel does not disengage from any of the washers on the mounting studs.

a) If the panel disengages from any of the washers on the mounting studs, replace the LPTACC air manifold panel. These are the tasks:

- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Removal, TASK 75-24-05-000-801-H00
- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation, TASK 75-24-05-400-801-H00.

(d) Move the LPTACC air manifold (panel) back in the axial direction.

1) Make sure that the panel does not disengage from any of the washers on the mounting studs.

a) If the panel disengages from any of the washers on the mounting studs, replace the LPTACC air manifold panel. These are the tasks:

- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Removal, TASK 75-24-05-000-801-H00
- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation, TASK 75-24-05-400-801-H00.

SUBTASK 75-24-05-210-002-H00

(2) Do a visual inspection of the LPTACC air manifold air tubes adjacent to the washers for damage.

(a) Do a visual inspection for damage in the air tubes adjacent to the washers.

1) No damage is permitted on the air tubes adjacent to the washers.

2) If you find damage to the air tubes adjacent to the washers, replace the LPTACC air manifold panel. These are the tasks:

- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Removal, TASK 75-24-05-000-801-H00
- Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Installation, TASK 75-24-05-400-801-H00

G. Put the Airplane Back to Its Usual Condition

SUBTASK 75-24-05-860-002-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left and right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

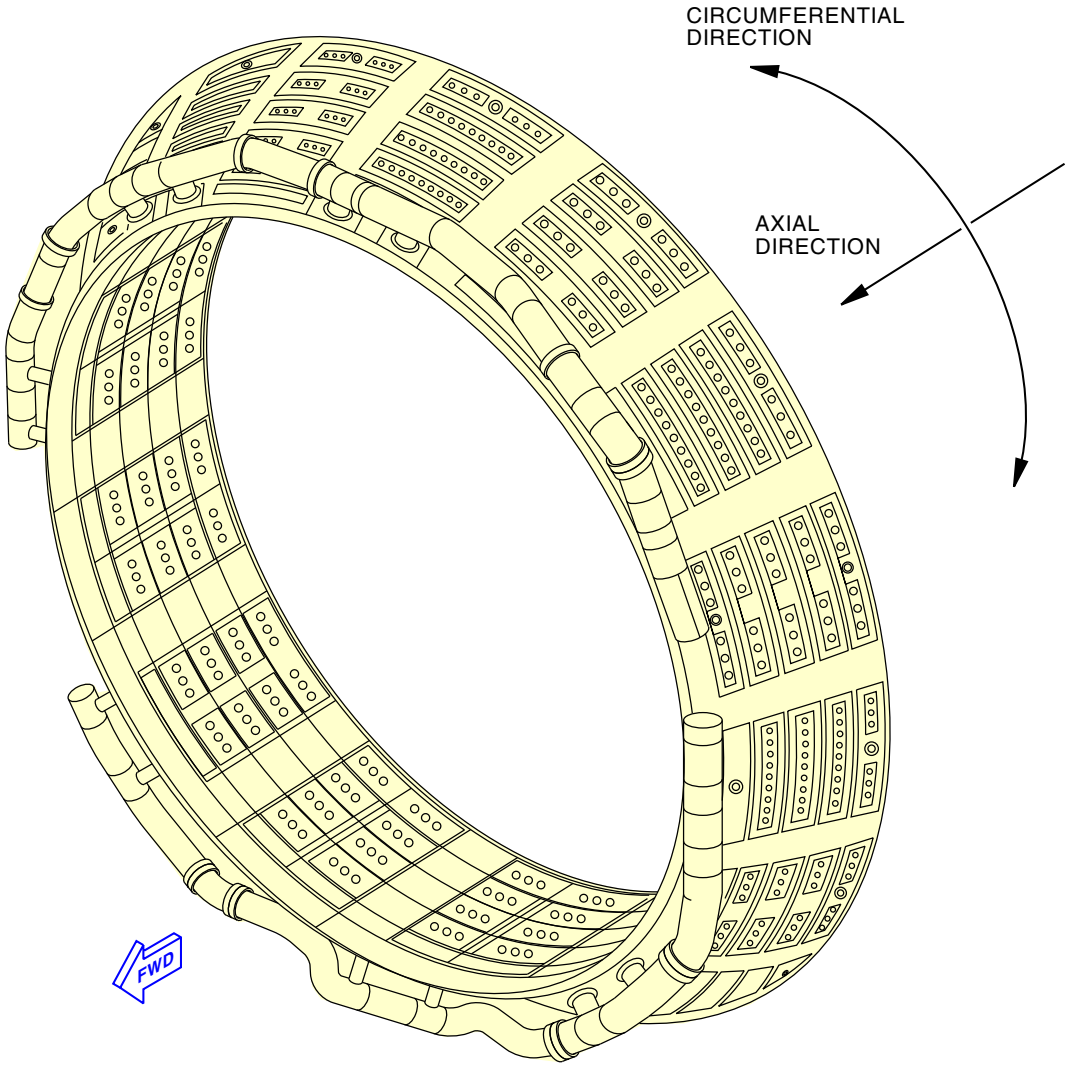
Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

END OF TASK



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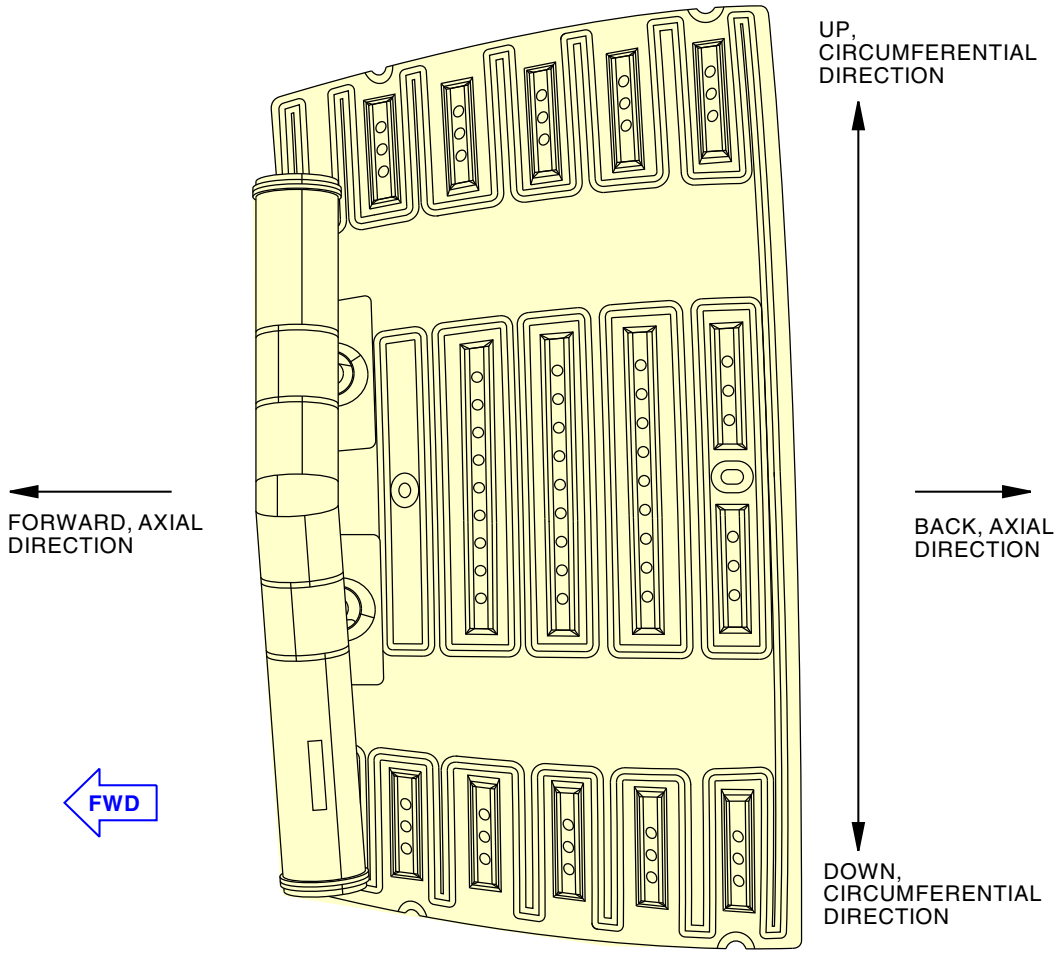
Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Inspection
Figure 601/75-24-05-990-802-H00 (Sheet 1 of 2)



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Low Pressure Turbine Active Clearance Control (LPTACC) Air Manifold Panels Inspection
Figure 601/75-24-05-990-802-H00 (Sheet 2 of 2)

COMPRESSOR CONTROL SYSTEM - INSPECTION/CHECK

TASK 75-30-00-210-801-H01

1. Compressor Control System Inspection

(Figure 601)

A. General

(1) This procedure provides the instructions on how to do an inspection of the compressor control system.

(2) This procedure will examine the parts that follow:

(a) The variable stator vane actuator (VSV actuator)

(b) The variable bypass valve actuator (VBV actuator).

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-00-02-000-811-H00	Power Plant Removal (P/B 401)
71-00-02-400-811-H00	Power Plant Installation (P/B 401)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
72-21-04-000-801-H01	Fan Booster Acoustic Panel Removal (P/B 401)
72-21-04-400-801-H01	Fan Booster Acoustic Panel Installation (P/B 401)
75-31-02-000-801-H01	Variable Stator Vane (VSV) Actuator Removal (P/B 401)
75-31-02-400-801-H01	Variable Stator Vane (VSV) Actuator Installation (P/B 401)
75-32-00-400-802-H00	VBV Door and Actuator Bellcrank to Unison Ring Connection Hardware - Installation (P/B 401)
75-32-00-700-801-H01	Variable Bypass Valve (VBV) Operation (P/B 201)
75-32-01-000-801-H01	Left Variable Bypass Valve (VBV) Actuator Removal (P/B 401)
75-32-01-400-801-H01	Left Variable Bypass Valve (VBV) Actuator Installation (P/B 401)
75-32-02-000-801-H01	Right Variable Bypass Valve (VBV) Actuator Removal (P/B 401)
75-32-02-400-801-H01	Right Variable Bypass Valve (VBV) Actuator Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-2242	Borescope - Fiberscope Part #: 9C1301P01 Supplier: 06083 Part #: 9C1301P03 Supplier: 06083

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the Inspection

SUBTASK 75-30-00-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

(Continued)

Number	Name/Location
426AR	Right Thrust Reverser, Right Engine

G. Compressor Control System Inspection

SUBTASK 75-30-00-210-001-H01

(1) Examine the VSV actuator:

(a) Look for signs of fuel leaks from the VSV actuator. If you find wetting or staining but no drops, the engine is serviceable.

1) If you see signs of fuel leakage, replace the VSV actuator (TASK 75-31-02-000-801-H01 and TASK 75-31-02-400-801-H01).

(b) Make sure that the VSV actuator is not loose.

1) If the VSV actuator is loose, tighten the bolts (TASK 75-31-02-400-801-H01).

(c) Look for dents on the VSV actuator.

1) If you see dents, replace the VSV actuator (TASK 75-31-02-000-801-H01 and TASK 75-31-02-400-801-H01).

(d) Look for scores on the piston rod of the VSV actuator.

1) If you see scores on the piston rod, replace the VSV actuator (TASK 75-31-02-000-801-H01 and TASK 75-31-02-400-801-H01).

(e) Look for a bent piston rod.

1) If you see a bent piston rod, replace the VSV actuator (TASK 75-31-02-000-801-H01 and TASK 75-31-02-400-801-H01).

(f) Make sure that the electrical connector is not loose.

SUBTASK 75-30-00-210-002-H01

(2) Examine the VBV actuator:

(a) Look for signs of fuel leaks.

1) If you see signs of fuel leaks, replace the VBV actuator (TASK 75-32-01-000-801-H01 and TASK 75-32-01-400-801-H01) or (TASK 75-32-02-000-801-H01 and TASK 75-32-02-400-801-H01).

(b) Make sure that the VBV actuator is not loose.

1) If the VBV actuator is loose, tighten the bolts (TASK 75-32-01-400-801-H01 or TASK 75-32-02-400-801-H01).

(c) Look for dents in the VBV actuator.

1) If you see dents, replace the VBV actuator (TASK 75-32-01-000-801-H01 and TASK 75-32-01-400-801-H01) or (TASK 75-32-02-000-801-H01 and TASK 75-32-02-400-801-H01).

(d) Look for cracks in the mounting flange on the VBV actuator.

1) If you see cracks, replace the VBV actuator (TASK 75-32-01-000-801-H01 and TASK 75-32-01-400-801-H01) or (TASK 75-32-02-000-801-H01 and TASK 75-32-02-400-801-H01).

(e) Make sure that the electrical connector is not loose.

(f) Do an inspection of the VBV actuator bell crank linkage connections between the VBV actuator and VBV door bellcranks to unison ring.

NOTE: As an alternative method, you can do a fiberscope inspection of the VBV bellcranks to unison ring linkage. Refer to step G. (2) (h).

1) Remove the inner acoustic panels (TASK 72-21-04-000-801-H01).

2) Do an inspection of the linkage connections between the two VBV actuator bellcranks and unison ring.

a) No loose or missing hardware permitted (VBV Door and Actuator Bellcrank to Unison Ring Connection Hardware - Installation, TASK 75-32-00-400-802-H00).

b) Do an inspection of the Unison ring VBV actuator bellcrank cutout. Refer to Figure 601.

<1> If wear depth is not more than 0.200 in. (5.080 mm), the unison ring is serviceable.

3) Do an inspection of the two VBV actuator bellcranks support pivots and safety wires:

a) No loose bellcrank support pivots or broken safety wires permitted.

<1> Do this task: Power Plant Removal, TASK 71-00-02-000-811-H00.

<2> Do this task: Power Plant Installation, TASK 71-00-02-400-811-H00.

4) Do an inspection of the linkage connections between the 10 VBV door bellcranks and unison ring.

a) No loose or missing hardware permitted (VBV Door and Actuator Bellcrank to Unison Ring Connection Hardware - Installation, TASK 75-32-00-400-802-H00).

5) Install the inner acoustic panels (TASK 72-21-04-400-801-H01).

(g) Do a fiberscope inspection of the VBV doors as follows:

NOTE: As an alternative method, you can use a borescope to do the inspection.

NOTE: The purpose of this inspection is to find if all 10 doors operate together, or alternatively, that one or more doors is in a different position compared to all the other doors. A door that looks different indicates that the door is not connected to its actuation linkage.

NOTE: You can get access through each of the 10 location's deflector panel and duct.

NOTE: The procedures that follow are for the inspection of the VBV system for use during the investigation of VBV system maintenance messages only. These procedures are not necessary for engine stall or other inspections.

1) Put the fiberscope borescope, SPL-2242 between the deflector's louvers and up into the duct until you can see the VBV door.

2) Put the fiberscope borescope, SPL-2242 in the duct, away from the door.

a) Operate the VBV system to the full CLOSED position (TASK 75-32-00-700-801-H01).

b) Monitor the position of the VBV door.

NOTE: It should be seated against the VBV hood's forward seal, and the booster airfoils should not be visible.

c) Make a record for the VBV door that you examined:

<1> Door location on the engine: x:xx o'clock.

<2> Door position: Full Close or it is in some other position (partially open or closed).

d) Repeat the above steps for the other VBV door locations.

3) Put the fiberscope in the duct, away from the door.

a) Operate the VBV system to the full OPEN position (TASK 75-32-00-700-801-H01).

b) Monitor the position of the VBV door.

NOTE: It should be seated against the VBV hood's aft seal, and the booster airfoils should be visible.

c) Make a record for the VBV door that you examined:

<1> Door location on the engine: x:xx o'clock.

<2> The door position: Full Open or it is in some other position (partially open or closed).

d) Repeat the above steps for the other VBV door locations.

4) Do a check of the record that you made for all VBV door locations.

a) A VBV system that has correct function will result as follows:

<1> Make sure that all doors were fully closed, when the system was actuated to the closed position.

<2> Make sure that all doors were fully opened, when the system was actuated to the open position.

5) If one or more doors is not in the same position as the other doors, do the steps that follows:

a) With the system in the closed position, examine the door's clevis and rod bearing.

<1> If the clevis and rod bearing are attached to each other and are attached to the door, the door is serviceable.

<2> If the clevis and rod bearing are broken, separated, or not attached to the door, the door is not serviceable.

<a> Do this task: Power Plant Removal, TASK 71-00-02-000-811-H00.

<b> Do this task: Power Plant Installation, TASK 71-00-02-400-811-H00.

6) Unserviceable doors are permitted if there are no more than two unserviceable doors:

a) C-I-S limit for no more than two unserviceable doors is as follows:

<1> Within 50 cycles, replace the engine (TASK 71-00-02-000-811-H00 and TASK 71-00-02-400-811-H00).

(h) Do a fiberscope inspection of the 10 VBV door bellcranks and two actuator bellcranks connections to unison ring as follows:

NOTE: As an alternative method, you can use a borescope to do the inspection.

NOTE: The purpose of this inspection is to find missing or loose hardware at the 10 VBV door bellcranks and two VBV actuator bellcranks connections to unison ring. Hardware that is missing or a nut that is not fully seated against the unison ring shows that the bellcrank is not connected to the unison ring.

NOTE: You can get access through each of the deflector panels and ducts at all 10 locations.

NOTE: The procedures that follow are for the inspection of the VBV system for use during the investigation of VBV system maintenance message only. These procedures are not necessary for engine stall or other inspections.

1) Put the fiberscope borescope, SPL-2242, between the deflector's louvers at the VBV actuator location (3rd and 9th VBV duct) and up into the duct until you can see the VBV actuator bellcrank to unison ring connection.

   a) Do an inspection of the linkage connections between the VBV actuator bellcrank and unison ring.

      <1> No loose or missing hardware permitted (VBV Door and Actuator Bellcrank to Unison Ring Connection Hardware - Installation, TASK 75-32-00-400-802-H00).

   b) Do an inspection of the VBV actuator bell crank support pivot and safety wire: No loose bellcrank support pivot or broken safety wire permitted.

      <1> Do this task: Power Plant Removal, TASK 71-00-02-000-811-H00.

      <2> Do this task: Power Plant Installation, TASK 71-00-02-400-811-H00.

   c) Do an inspection of the Unison ring VBV actuator bellcrank cutout. Refer to Figure 601.

      <1> If wear depth is not more than 0.200 in. (5.080 mm), the unison ring is serviceable.

   d) Do the above steps again for the other VBV actuator location.

2) Put the fiberscope borescope, SPL-2242, between the louvers of the deflector and up into the duct until you can see the VBV door bellcrank to unison ring connection.

   a) Do an inspection of the linkage connection between the VBV door bellcrank and Unison Ring.

      <1> No loose or missing hardware permitted (VBV Door and Actuator Bellcrank to Unison Ring Connection Hardware - Installation, TASK 75-32-00-400-802-H00).

   b) Do the above steps again for all VBV door location.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 75-30-00-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

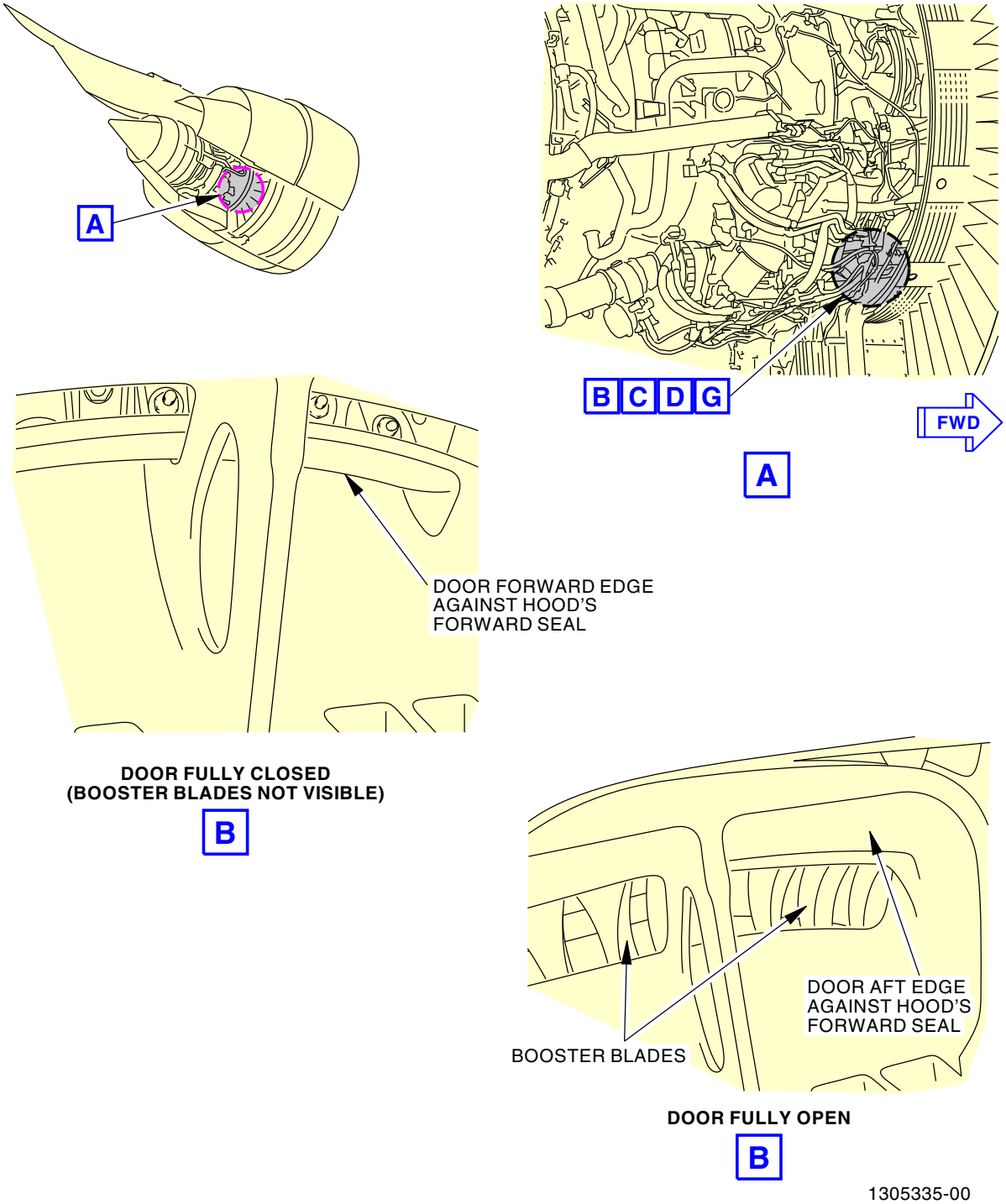
1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

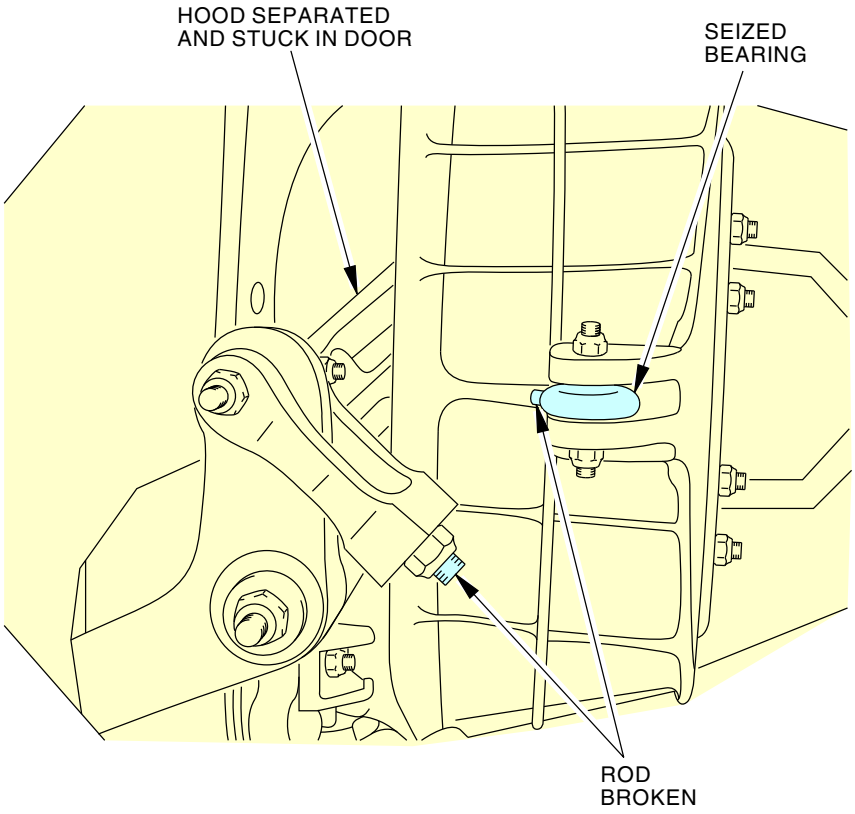
(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

END OF TASK



Variable Bypass Valve (VBV) Door Inspection
Figure 601/75-30-00-990-801-H00 (Sheet 1 of 5)



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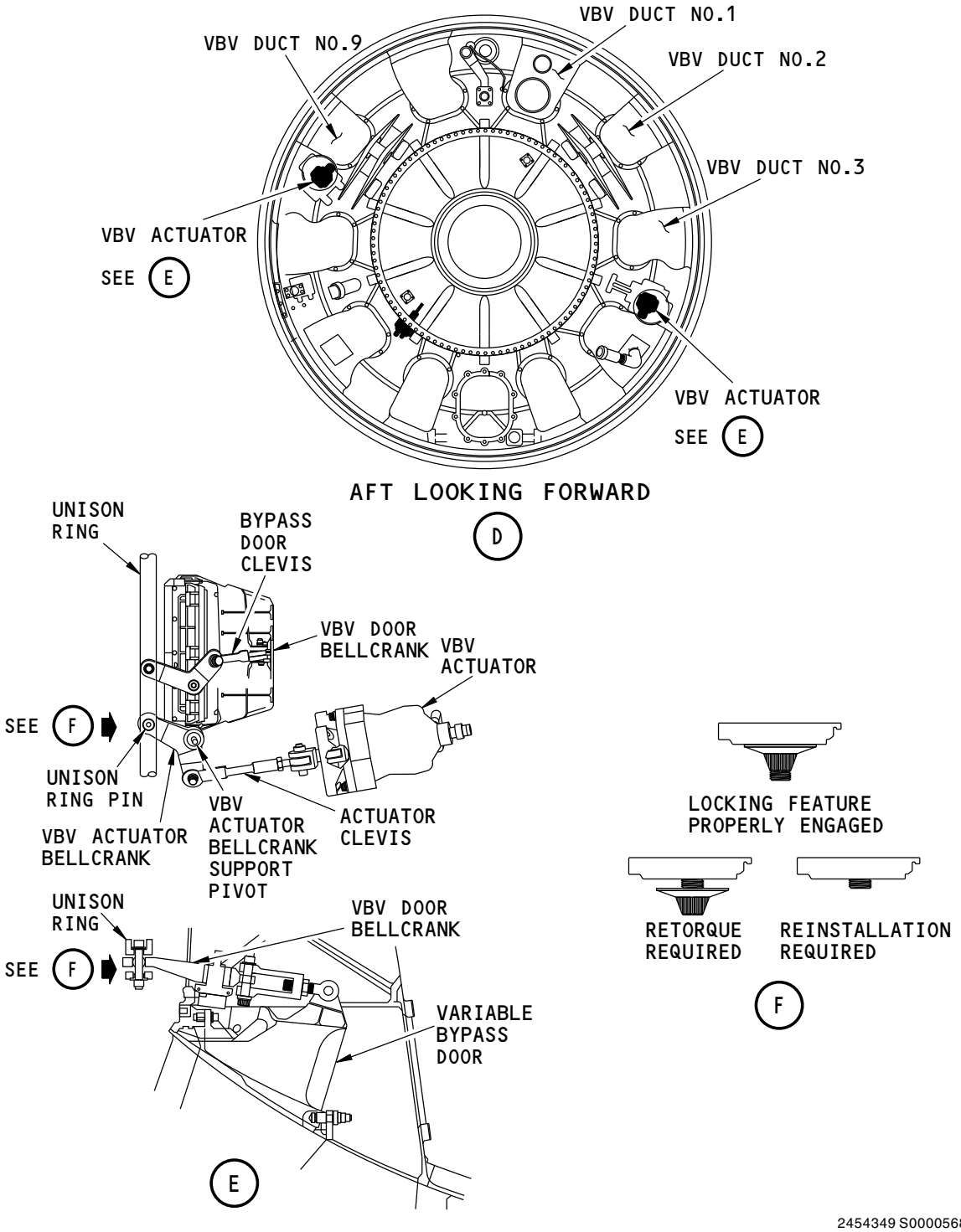
Variable Bypass Valve (VBV) Door Inspection
Figure 601/75-30-00-990-801-H00 (Sheet 2 of 5)



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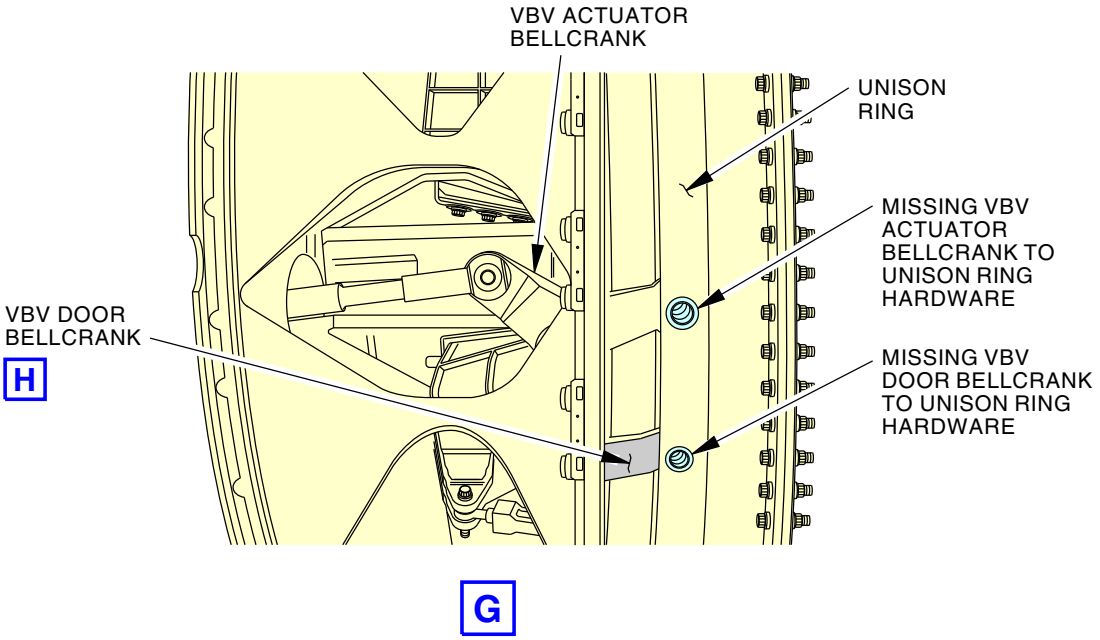
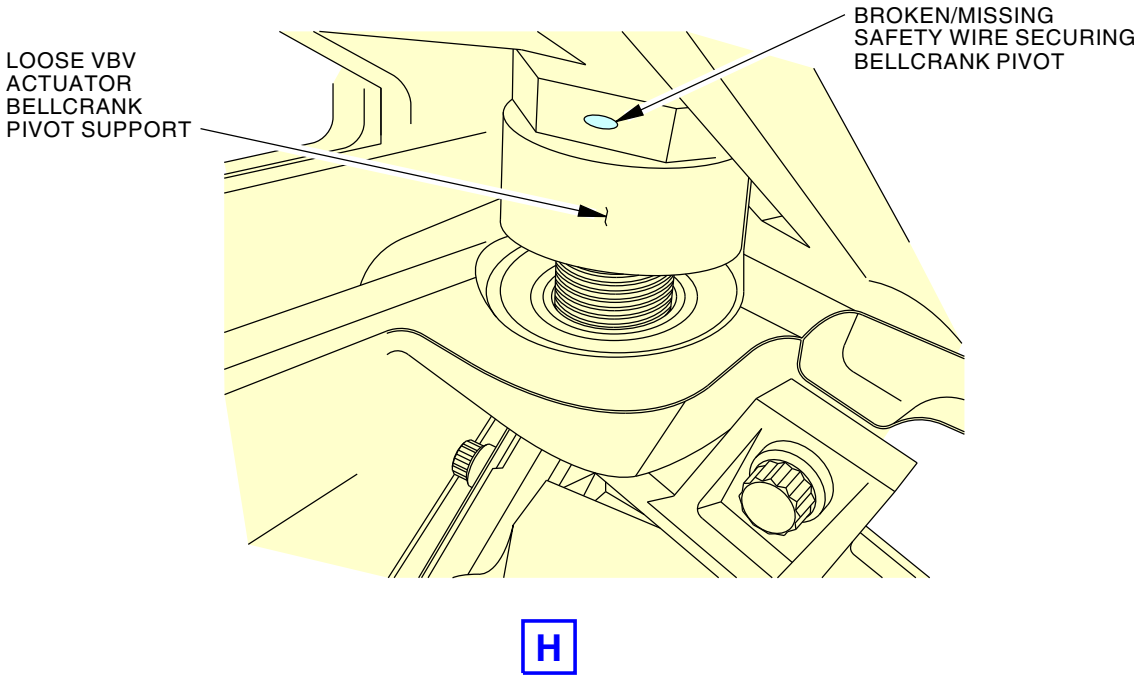
Variable Bypass Valve (VBV) Door Inspection
Figure 601/75-30-00-990-801-H00 (Sheet 3 of 5)





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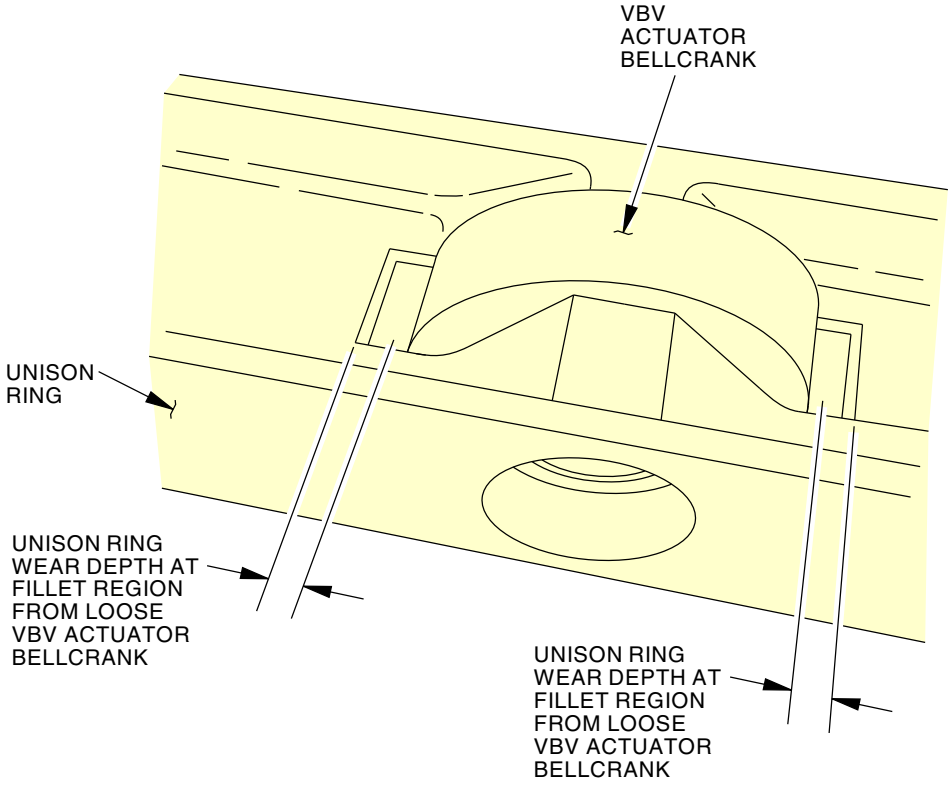
Variable Bypass Valve (VBV) Door Inspection
Figure 601/75-30-00-990-801-H00 (Sheet 4 of 5)



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Variable Bypass Valve (VBV) Door Inspection
Figure 601/75-30-00-990-801-H00 (Sheet 5 of 5)

VARIABLE STATOR VANE (VSV) SYSTEM - MAINTENANCE PRACTICES

1. General

A. This procedure contains the task to manually operate the variable stator vane (VSV) system to the open position.

TASK 75-31-00-700-801-H01

2. Variable Stator Vane (VSV) Operation (Alternate)

(Figure 201)

A. General

(1) There are two procedures which can put the VSV actuators in the open position so that the actuators can be removed. One procedure is to use the MAT initiated special function and is preferred do this task: Test No. 19 - Variable Stator Vane Operational Test (MAT Initiated test), TASK 71-00-00-700-818-H01.

(2) This task is the optional (or alternate) procedure to manually put the VSV actuators in the open position.

(3) You must open the right thrust reverser to get access to do this task.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-700-818-H01	Test No. 19 - Variable Stator Vane Operational Test (MAT Initiated test) (P/B 501)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-2103	Hand Pump - Hydraulic, Portable Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-7880	Set - Adapter, VSV/VBV Part #: 9C1393G01 Supplier: 06083
STD-201	Container - Fuel Resistant, 5 U.S.-Gal (19 l)

D. Consumable Materials

Reference	Description	Specification
D00071	Oil - Aircraft Turbine Engine, Synthetic Base	MIL-PRF-7808 Grade 3
G02272	Fuel - Turbine, Aviation (Grades JP-4, JP-5, JP-5/JP-8ST)	MIL-DTL-5624

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Procedure

SUBTASK 75-31-00-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-31-00-869-001-H01

(2) Do these steps to make sure the fuel control valve and the spar valve stay in the closed position:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

1) Install a DO-NOT-OPERATE tag on the FUEL CONTROL switch.

(b) Push the STAT switch on the display select panel of the glareshield (P55).

1) Make sure you do not see the applicable ENG FUEL VALVE L(R) or FUEL SPAR VALVE L(R) status messages.

(c) For the applicable engines, open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

SUBTASK 75-31-00-020-001-H01

WARNING DO NOT LET THE FUEL TOUCH YOUR SKIN OR CLOTHES. REMOVE CLOTHES THAT THE FUEL TOUCHES. FUEL CAN BURN YOUR SKIN. RINSE YOUR SKIN FULLY WITH WATER WHERE THE FUEL TOUCHES.

(3) Do these steps to manually operate the VSV actuators:

(a) Disconnect the VSV rod fuel tube [7] and the VSV head fuel tube [8] from the HMU.

1) Remove the bolt [4] from the clamp [2] that is forward of the HMU on the VSV rod fuel tube [7] and the VSV head fuel tube [8].

2) Put the 5 U.S.-gal (19 l) fuel resistant container, STD-201 below the VSV rod fuel fitting [9] and the VSV head fuel fitting [10].

3) Disconnect the VSV rod fuel tube [7] and the VSV head fuel tube [8].

a) Permit the fuel to drain into the container.

4) Move the VSV rod fuel tube [7] and the VSV head fuel tube [8] away from the HMU.

5) Install the protective caps on the VSV rod fuel fitting [9] and the VSV head fuel fitting [10].

WARNING DO NOT LET THE OIL STAY ON YOUR SKIN. YOU CAN ABSORB POISONOUS MATERIAL FROM THE OIL THROUGH YOUR SKIN.

(b) Do these steps to operate the VSV system:

1) Connect the hydraulic hand pump, SPL-2103 and the VSV/VBV adapter set, SPL-7880 supply and return hoses to the fittings on the VSV rod fuel tube [7] and the VSV head fuel tube [8].

NOTE: Make sure you use the approved oil or fuel (oil, D00071 or fuel, G02272) as the hydraulic fluid.

a) Tighten the VSV rod fuel tube [7] and the VSV head fuel tube [8] to the hydraulic hand pump, SPL-2103 (TASK 70-51-00-910-801-H01).

2) Operate the VSV system to the full open position (VSV actuator rods retracted).

a) Operate the hydraulic actuator at 50-100 psig to retract the rod side of the VSV actuators.

b) Make sure the actuators move smoothly to the full open (rods retracted) position.

3) Operate the VSV system to the fully close position (VSV actuator rods extended):

a) Operate the hydraulic actuator at 50-100 psig to the head side of the VSV actuators.

b) Make sure the actuators move smoothly to the fully close (VSV rods extended) position.

4) Release the hydraulic pressure from the hydraulic hand pump, SPL-2103, if it is no longer necessary.

(c) Disconnect the VSV/VBV adapter set, SPL-7880 hoses from the fittings on the VSV rod fuel tube [7] and the VSV head fuel tube [8]:

1) Put the 5 U.S.-gal (19 l) fuel resistant container, STD-201 below the VSV rod fuel fitting [9] and the VSV head fuel fitting [10].

2) Disconnect the VSV rod fuel tube [7] and the VSV head fuel tube [8].

a) Permit the fuel to drain into the container.

3) Remove the protective caps on the VSV rod fuel fitting [9] and the VSV head fuel fitting [10].

4) Connect the VSV head fuel tube [8] to the VSV head fuel fitting [10].

a) Tighten the tube fitting (TASK 70-51-00-910-801-H01).

5) Connect the VSV rod fuel tube [7] to the VSV rod fuel fitting [9].

a) Tighten the tube fitting (TASK 70-51-00-910-801-H01).

6) Put the clamp [2] in its position on the VSV rod fuel tube [7] and the VSV head fuel tube [8].

7) Install the bolt [4] that attaches the clamp [2] to the VSV rod fuel tube [7] and the VSV head fuel tube [8].

a) Tighten the bolt [4] to 110-120 pound-inches (12.4-13.6 Newton-meters).

H. Put the Airplane Back to its Usual Condition

SUBTASK 75-31-00-869-002-H01

(1) Do these steps to put the fuel control valve and the spar valve to the serviceable condition:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

(b) For the applicable engine, remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

SUBTASK 75-31-00-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

I. VSV System Leak Test

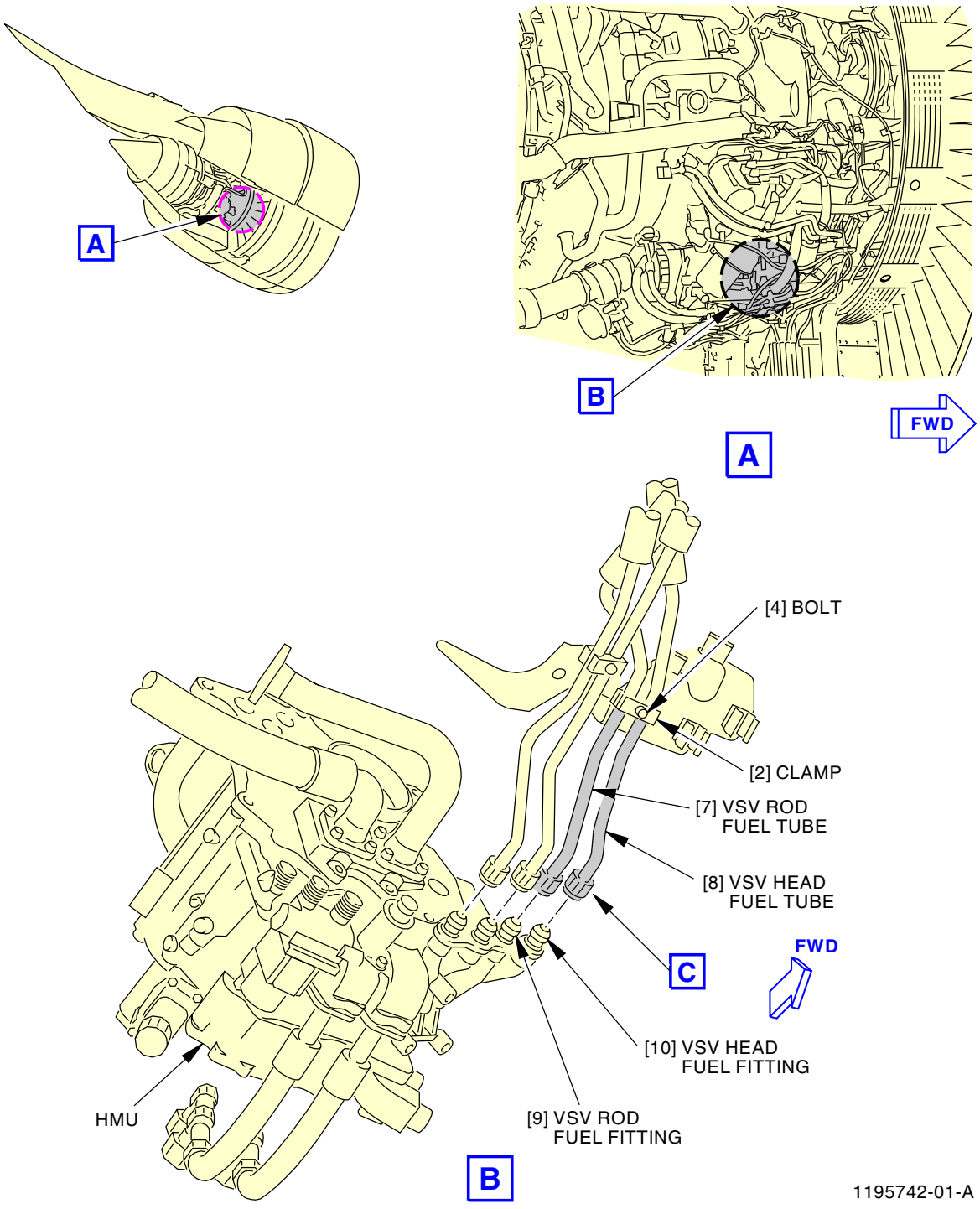
SUBTASK 75-31-00-790-001-H01

(1) Do a visual check of the VSV tube connections for leaks while you do the fuel driven actuator test on the MAT.

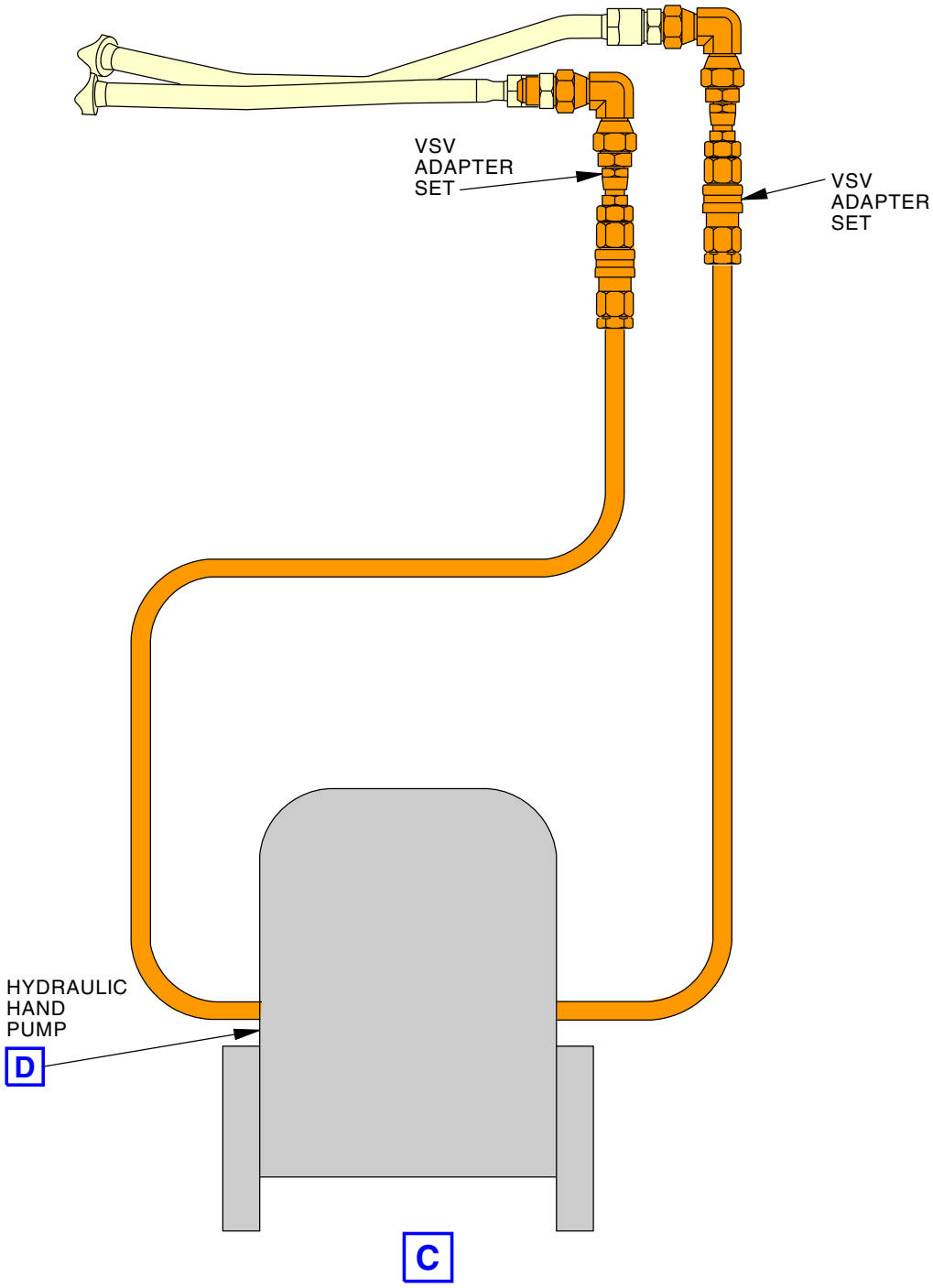
SUBTASK 75-31-00-710-001-H01

(2) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

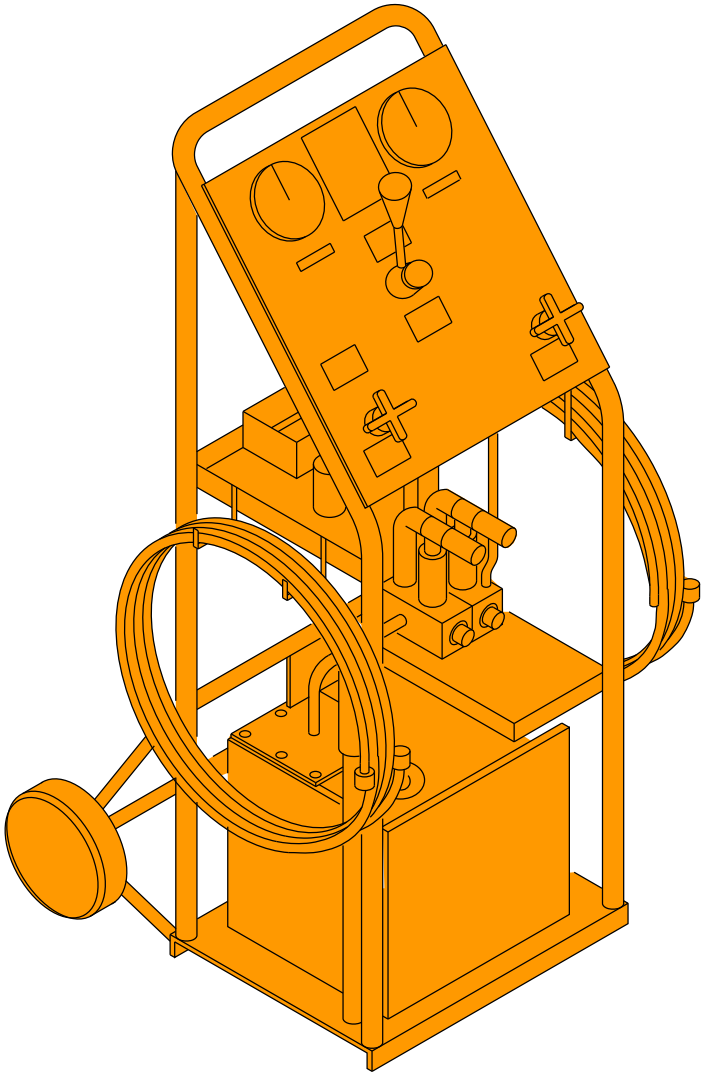
——— END OF TASK ———



Variable Stator Vane (VSV) System Actuation
Figure 201/75-31-00-990-801-H01 (Sheet 1 of 3)



Variable Stator Vane (VSV) System Actuation
Figure 201/75-31-00-990-801-H01 (Sheet 2 of 3)



HYDRAULIC HAND PUMP

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Variable Stator Vane (VSV) System Actuation
Figure 201/75-31-00-990-801-H01 (Sheet 3 of 3)

VARIABLE STATOR VANE (VSV) ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has six tasks:

(1) A removal of the variable stator vane actuator (Selection)

(2) A installation of the variable stator vane actuator (Selection)

(3) A removal of the left variable stator vane actuator

(4) An installation of the left variable stator vane actuator

(5) A removal of the right variable stator vane actuator

(6) An installation of the right variable stator vane actuator.

TASK 75-31-02-000-801-H01

2. Variable Stator Vane (VSV) Actuator Removal

A. Procedure

SUBTASK 75-31-02-020-001-H01

(1) Do one of these tasks to remove the applicable variable stator vane (VSV) actuator:

(a) Do this task: Left Variable Stator Vane (VSV) Actuator Removal, TASK 75-31-02-000-802-H01.

(b) Do this task: Right Variable Stator Vane (VSV) Actuator Removal, TASK 75-31-02-000-803-H01.

——— END OF TASK ———

TASK 75-31-02-400-801-H01

3. Variable Stator Vane (VSV) Actuator Installation

A. Procedure

SUBTASK 75-31-02-420-001-H01

(1) Do one of these tasks to install the applicable variable stator vane (VSV) actuator:

(a) Do this task: Left Variable Stator Vane (VSV) Actuator Installation, TASK 75-31-02-400-802-H01.

(b) Do this task: Right Variable Stator Vane (VSV) Actuator Installation, TASK 75-31-02-400-803-H01.

——— END OF TASK ———

TASK 75-31-02-000-802-H01

4. Left Variable Stator Vane (VSV) Actuator Removal

A. General

(1) This task is the removal procedure for the left variable stator vane actuator (referred to as the left VSV actuator).

(2) You must open the left thrust reverser to get access to the left VSV actuator.

(3) The left VSV actuator is at the 8:30 o'clock position on the engine core.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)

(Continued)

Reference	Title
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

F. Prepare for the Left VSV Actuator Removal

SUBTASK 75-31-02-860-001-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-31-02-010-002-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the left thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(e) For the left thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

G. Left VSV Actuator Removal

SUBTASK 75-31-02-020-002-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(1) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [7] from the left VSV actuator [1](TASK 70-00-01-400-807-H01)(Figure 401).

(a) Install protective covers on the actuator electrical receptacle and the electrical connector [7].

SUBTASK 75-31-02-020-003-H01

(2) Do these steps to remove the ROD fuel tube-hose [9] and HEAD fuel tube-hose [10] from the left VSV actuator [1]:

(a) Disconnect the HEAD drain tube [5] from the HEAD drain can [4].

(b) Disconnect the ROD drain tube [6] from the ROD drain can [3].

(c) Remove the ROD drain can [3] and HEAD drain can [4] from the left VSV actuator [1] as follows:

1) Remove the two captive bolts [19] that attach the ROD drain can [3] to the left VSV actuator [1] and move it back.

2) Remove the two captive bolts [19] that attach the HEAD drain can [4] to the left VSV actuator [1] and move it back.

(d) Disconnect the ROD fuel tube-hose [9] from the left VSV actuator [1].

(e) Remove the preformed packing [18] from the ROD drain can [3] and discard.

(f) Remove the preformed packing [17] from the ROD fuel tube-hose [9] packing groove and discard.

(g) Disconnect the HEAD fuel tube-hose [10] from the left VSV actuator [1].

(h) Remove the preformed packing [18] from the HEAD drain can [4] and discard.

(i) Remove the preformed packing [17] from the HEAD fuel tube-hose [10] packing groove and discard.

SUBTASK 75-31-02-020-004-H01

(3) Remove the left VSV actuator [1] from the VSV actuator support bracket [53] and the VSV actuating shaft [2] as follows:

(a) Remove the bolt [16] and nut [12].

(b) Turn the left VSV actuator [1] away from the HPC case.

(c) Remove the two bolts [51] from the VSV actuator support bracket [53] upper flange.

(d) Turn the left VSV actuator [1] back toward the HPC case.

(e) Install the bolt [16] and nut [12] to attach the VSV actuating shaft [2] to the left VSV actuator [1].

1) Hand tighten the nut [12].

(f) Loosen the nut [13] from the left VSV actuator [1].

(g) Remove the bolt [54] and remove the bracket [55].

(h) Remove the pin [15], spacer [11] and nut [13] from the left VSV actuator [1].

(i) Remove the bolt [16] and nut [12] from the VSV actuating shaft [2].

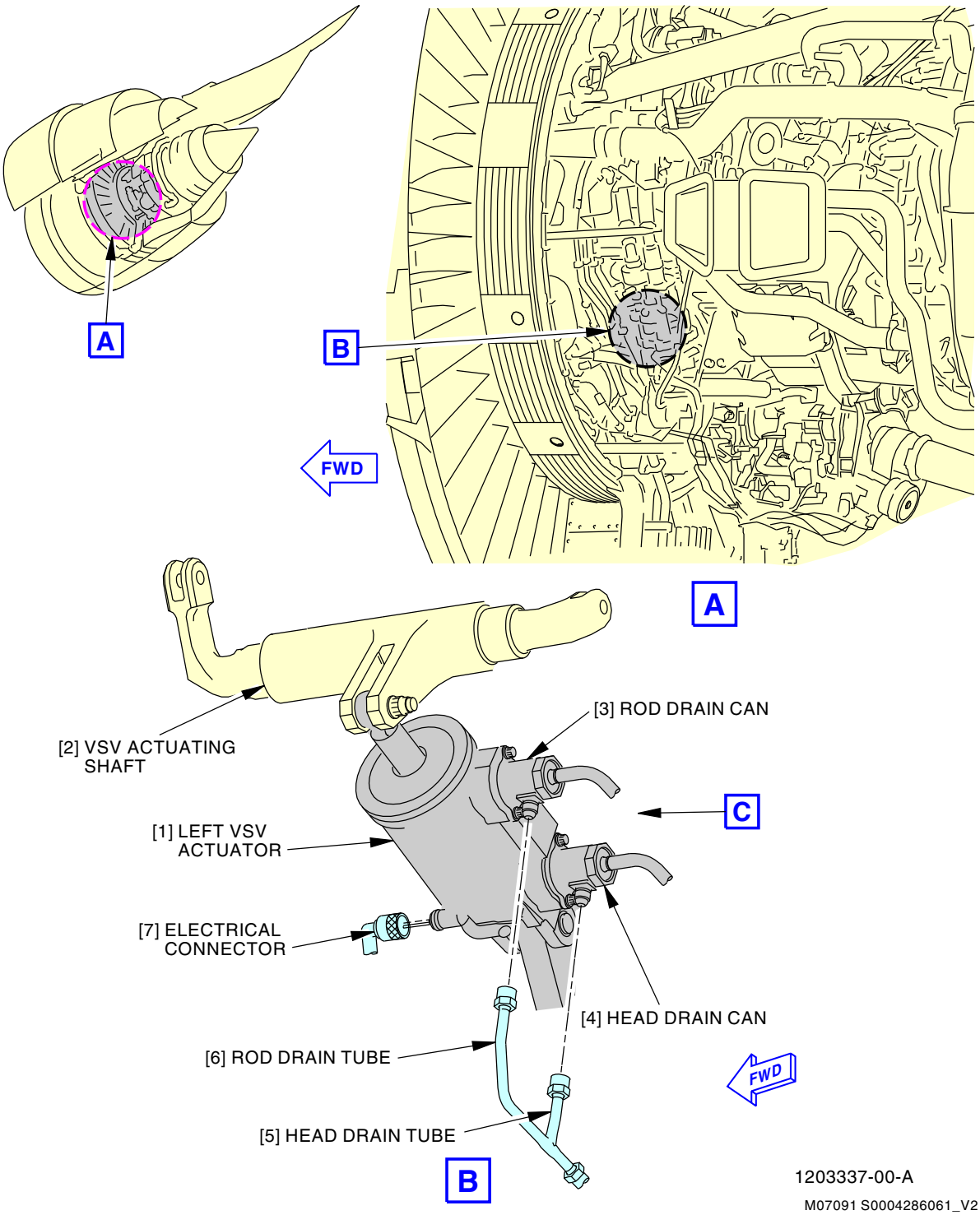
(j) Remove the four bolts [52] from the VSV actuator support bracket [53] lower flange.

(k) Turn the left VSV actuator [1] and VSV actuator support bracket [53] away from the HPC case.

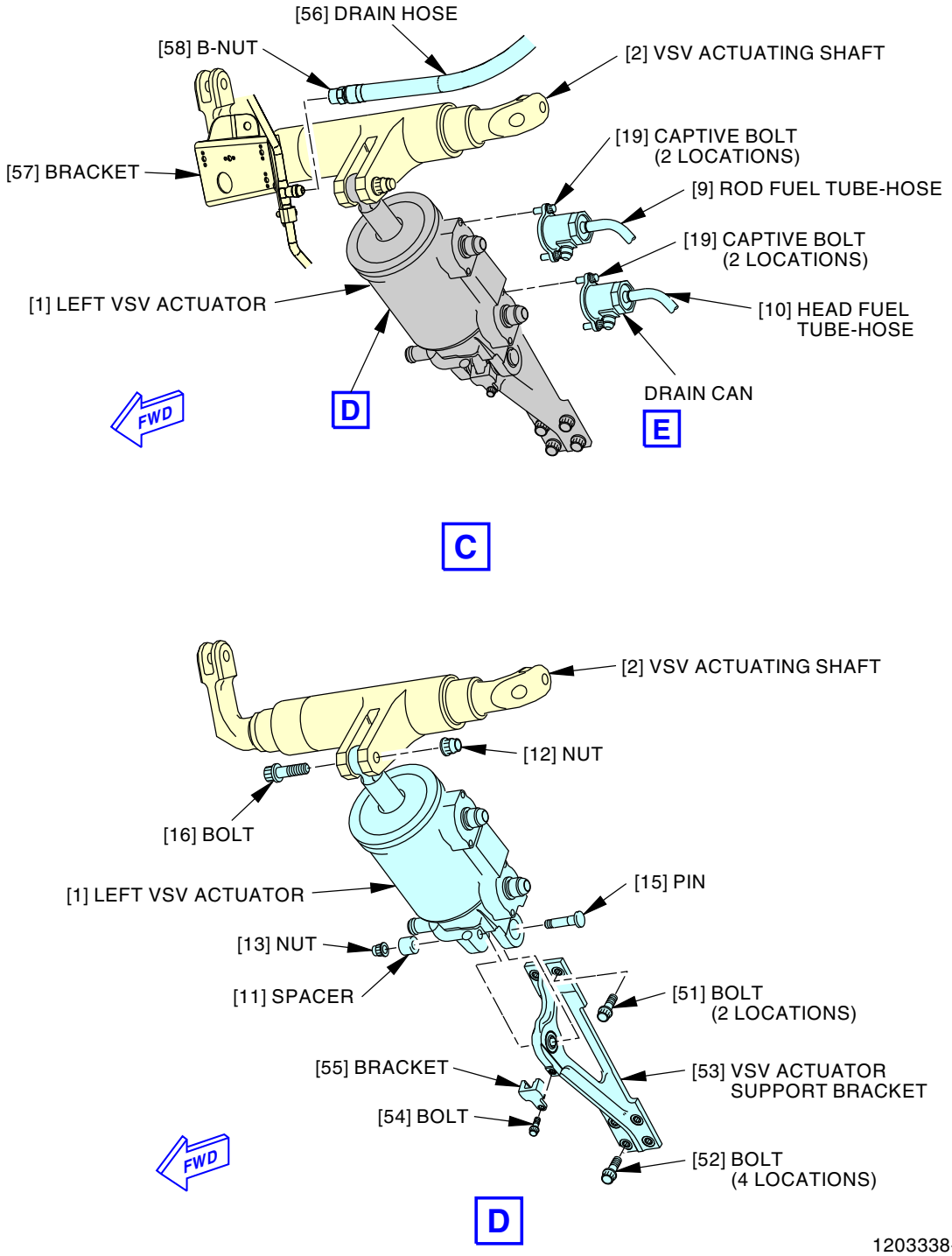
SUBTASK 75-31-02-020-005-H01

(4) Install protective covers on all tube-hoses and tubes.

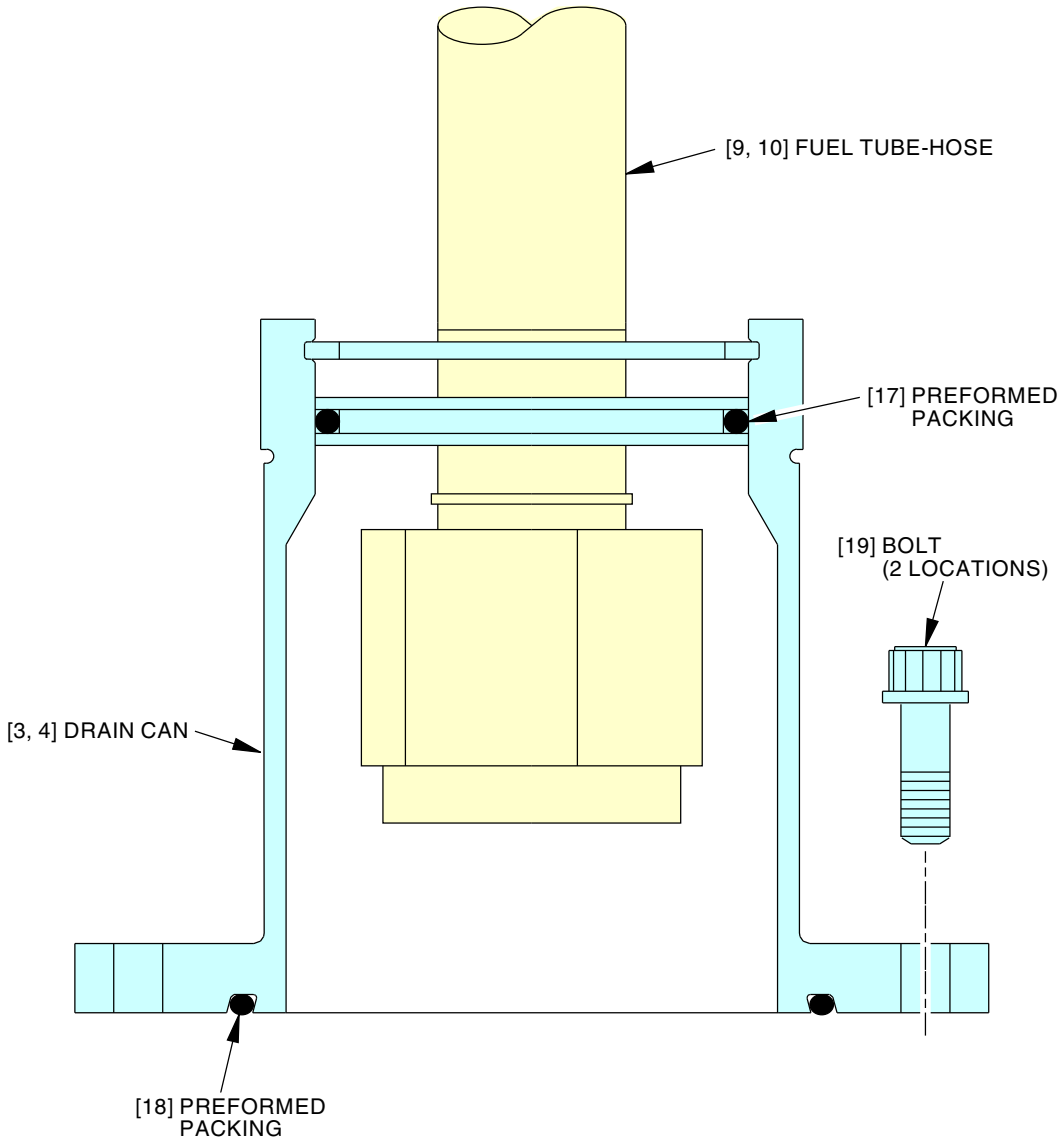
——— END OF TASK ———



Left Variable Stator Vane (VSV) Actuator Installation
Figure 401/75-31-02-990-801-H01 (Sheet 1 of 3)



Left Variable Stator Vane (VSV) Actuator Installation
Figure 401/75-31-02-990-801-H01 (Sheet 2 of 3)



DRAIN CAN (EXAMPLE)

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Left Variable Stator Vane (VSV) Actuator Installation
Figure 401/75-31-02-990-801-H01 (Sheet 3 of 3)

TASK 75-31-02-400-802-H01

5. Left Variable Stator Vane (VSV) Actuator Installation

A. General

(1) This task is the installation procedure for the left variable stator vane actuator (referred to as the left VSV actuator).

(2) You must do the tests that are listed in the power plant test reference table after you install the left VSV actuator.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
D00071	Oil - Aircraft Turbine Engine, Synthetic Base	MIL-PRF-7808 Grade 3
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Left VSV actuator	75-31-02-03-040	ARO ALL
17	Preformed packing	73-11-51-19-090	ARO ALL
18	Preformed packing	73-11-51-19-095	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

H. Left VSV Actuator Installation

SUBTASK 75-31-02-420-002-H01

(1) Install the left VSV actuator [1] as follows (Figure 401):

(a) Attach the VSV actuating shaft [2] to the left VSV actuator [1] with the bolt [16] and nut [12].

1) Do not tighten nut [12] at this time.

(b) Apply Acheson GP460 compound, D50043 [C02-058] to the threads of the pin [15].

(c) Install the pin [15] through the clevis of the left VSV actuator [1] and the VSV actuator support bracket [53].

NOTE: The head of the pin will be on the aft side of the actuator.

1) Install the nut [13] and the spacer [11].

a) Tighten the nut [13] to 176-194 pound-inches (19.9-21.9 Newton-meters).

(d) Install the bracket [55] to the VSV actuator support bracket [53] with the bolts [54].

1) Tighten the bolt [54] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(e) Turn the left VSV actuator [1] and VSV actuator support bracket [53] toward the HPC case.

(f) Install the four bolts [52] to the VSV actuator support bracket [53] lower flange.

1) Tighten the bolts [52] to 225-252 pound-inches (25.4-28.5 Newton-meters).

(g) Remove the bolt [16] and nut [12] that attaches the VSV actuating shaft [2] to the left VSV actuator [1].

(h) Turn the left VSV actuator [1] away from the HPC case.

(i) Install the two bolts [51] to the VSV actuator support bracket [53] upper flange.

1) Tighten the bolts [51] to 225-252 pound-inches (25.4-28.5 Newton-meters).

(j) Turn the left VSV actuator [1] toward the HPC case.

(k) Apply Acheson GP460 compound, D50043 [C02-058] to the threads of the bolt [16].

(l) Install the bolt [16] and nut [12] that attach the left VSV actuator [1] to the VSV actuating shaft [2].

NOTE: The head of the bolt [16] will be on the forward side of the actuator.

1) Tighten the nut [12] to 785-985 pound-inches (89.0-111.3 Newton-meters).

SUBTASK 75-31-02-410-005-H01

(2) Connect the STB valve drain hose [56] at the bracket [57].

(a) Tighten the B-nut [58] (Instruction for Torque, TASK 70-51-00-910-801-H01).

SUBTASK 75-31-02-420-003-H01

(3) Remove the protective covers from all tube-hoses and tubes.

SUBTASK 75-31-02-420-004-H01

(4) Do these steps to install the ROD fuel tube-hose [9], the HEAD fuel tube-hose [10], the ROD drain can [3], and the HEAD drain can [4].

(a) Connect the ROD fuel tube-hose [9] and HEAD fuel tube-hose [10] to the left VSV actuator [1] as follows:

1) Lubricate the two new preformed packings [17] and the two new preformed packings [18] with clean oil, D00071.

2) Install the preformed packings [17] in the packing grooves of the ROD fuel tube-hose [9] and HEAD fuel tube-hose [10].

3) Install the preformed packings [18] in the grooves on the face of the ROD drain can [3] and HEAD drain can [4].

4) Connect the ROD fuel tube-hose [9] to the left VSV actuator [1].
   a) Tighten the B-nut (TASK 70-51-00-910-801-H01)
5) Connect the HEAD fuel tube-hose [10] to the left VSV actuator [1].
   a) Tighten the B-nut (TASK 70-51-00-910-801-H01).

(b) Move the HEAD drain can [4] forward to the left VSV actuator [1] and install the two captive bolts [19].
1) Tighten the captive bolts [19] to 110–120 pound-inches (12.4-13.6 Newton-meters).

(c) Move the ROD drain can [3] forward to the left VSV actuator [1] and install the two captive bolts [19].
1) Tighten the captive bolts [19] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(d) Connect the HEAD drain tube [5] to the HEAD drain can [4].
1) Tighten the B-nuts (TASK 70-51-00-910-801-H01).

(e) Connect the ROD drain tube [6] to the ROD drain can [3].
1) Tighten the B-nuts (TASK 70-51-00-910-801-H01).

SUBTASK 75-31-02-420-005-H01

(5) Remove the protective covers from the left VSV actuator [1] electrical receptacle and the electrical connector [7].

SUBTASK 75-31-02-420-006-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(6) Use teflon-jawed pliers, STD-664 to connect the electrical connector [7] to the left VSV actuator [1](TASK 70-00-01-400-807-H01).
(a) Tighten the electrical connector [7].

I. Put the Airplane Back to its Usual Condition.

SUBTASK 75-31-02-410-003-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left thrust reverser on the applicable engine:
(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.
1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-31-02-860-002-H01

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

J. Left Variable Stator Vane (VSV) Actuator Installation Test

SUBTASK 75-31-02-710-003-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

TASK 75-31-02-000-803-H01

6. Right Variable Stator Vane (VSV) Actuator Removal

A. General

(1) This task is the removal procedure for the right variable stator vane actuator (referred to as the right VSV actuator).

(2) You must open the right thrust reverser half to get access to the right VSV actuator.

(3) The right VSV actuator is at the 2:30 o'clock position on the engine core.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
36-11-01-000-806-004	Engine Duct Removal (P/B 401)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left

(Continued)

Zone	Area
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the Right VSV Actuator Removal

SUBTASK 75-31-02-860-003-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-31-02-010-003-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-31-02-010-005-H01

(3) Remove the HP/IP manifold [60] (TASK 36-11-01-000-806-004)).

G. Right VSV Actuator Removal

SUBTASK 75-31-02-020-006-H01

CAUTION

MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION

USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(1) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [32] from the right VSV actuator [31] (TASK 70-00-01-400-807-H01) (Figure 403).

(a) Install protective covers on the right VSV actuator [31] electrical receptacle and the electrical connector [32]

SUBTASK 75-31-02-020-008-H01

(2) Do these steps to remove the ROD fuel tube-hose [41] and the HEAD fuel tube-hose [39] from the right VSV actuator [31]:

(a) Disconnect the HEAD drain tube [35] from the HEAD drain can [33].

(b) Disconnect the ROD drain tube [36] from the ROD drain can [34].

(c) Remove the ROD drain can [34] and HEAD drain can [33] from the right VSV actuator [31] as follows:

1) Remove the two captive bolts [49] that attach the ROD drain can [34] to the right VSV actuator [31] and move it back.

2) Remove the two captive bolts [49] that attach the HEAD drain can [33] to the right VSV actuator [31] and move it back.

(d) Disconnect the ROD fuel tube-hose [41] from the right VSV actuator [31].

(e) Remove and discard the preformed packing [48] from the ROD drain can [34].

(f) Remove and discard the preformed packing [47] from the ROD fuel tube-hose [41] packing groove.

(g) Disconnect the HEAD fuel tube-hose [39] from the right VSV actuator [31].

(h) Remove and discard the preformed packing [48] from the HEAD drain can [33].

(i) Remove and discard the preformed packing [47] from the HEAD fuel tube-hose [39] packing groove.

SUBTASK 75-31-02-020-009-H01

(3) Remove the right VSV actuator [31] from the VSV actuator support bracket [43] and the VSV actuating shaft [37] as follows:

(a) Remove the pin [44], spacer [42A] and nut [42]that attaches the right VSV actuator [31] to the VSV actuator support bracket [43].

(b) Remove the bolt [45] and nut [46] that attach the right VSV actuator [31] to the VSV actuating shaft [37].

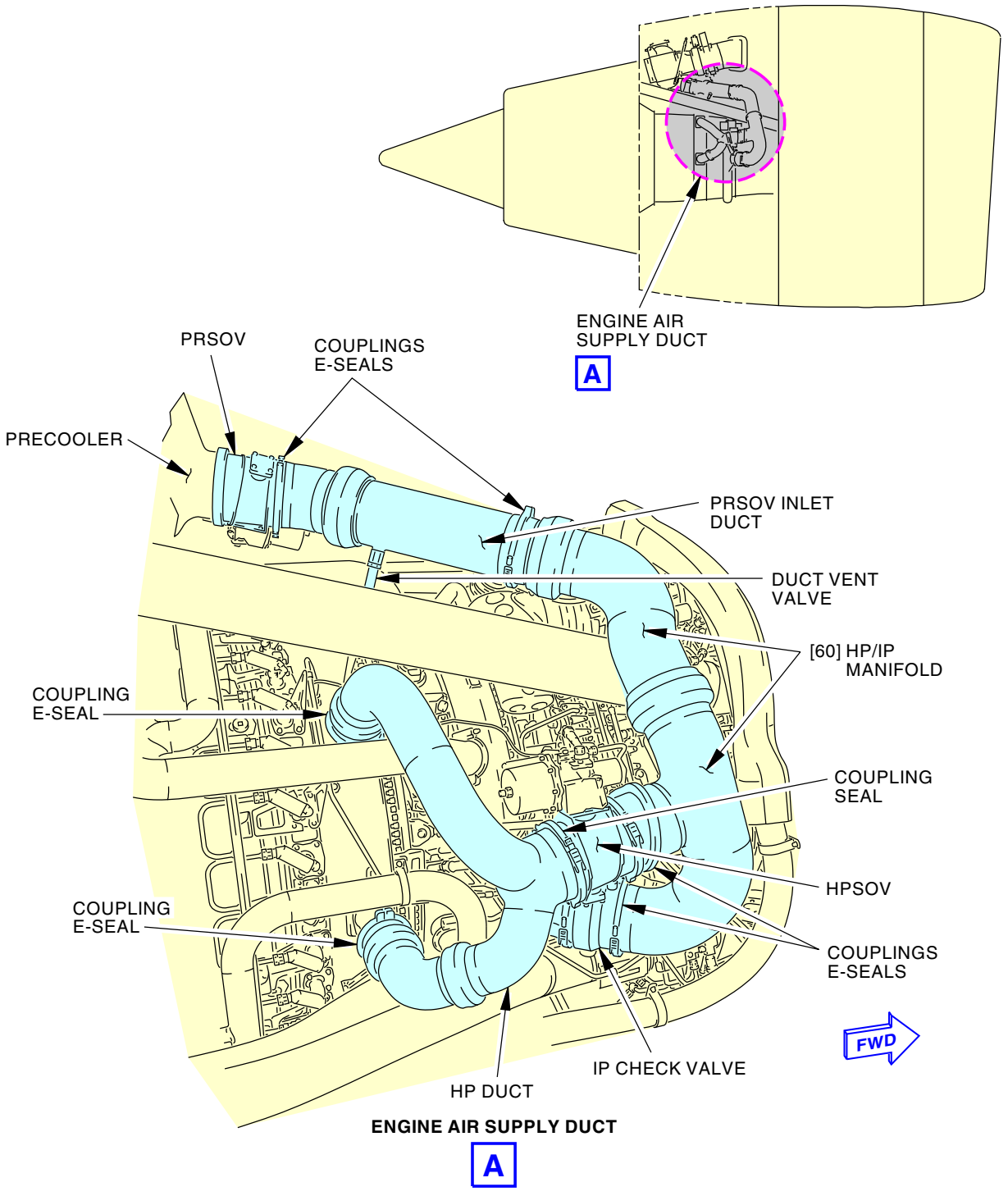
(c) Move the right VSV actuator [31] away from the VSV actuating shaft [37].

(d) Remove the right VSV actuator [31] from the VSV actuator support bracket [43].

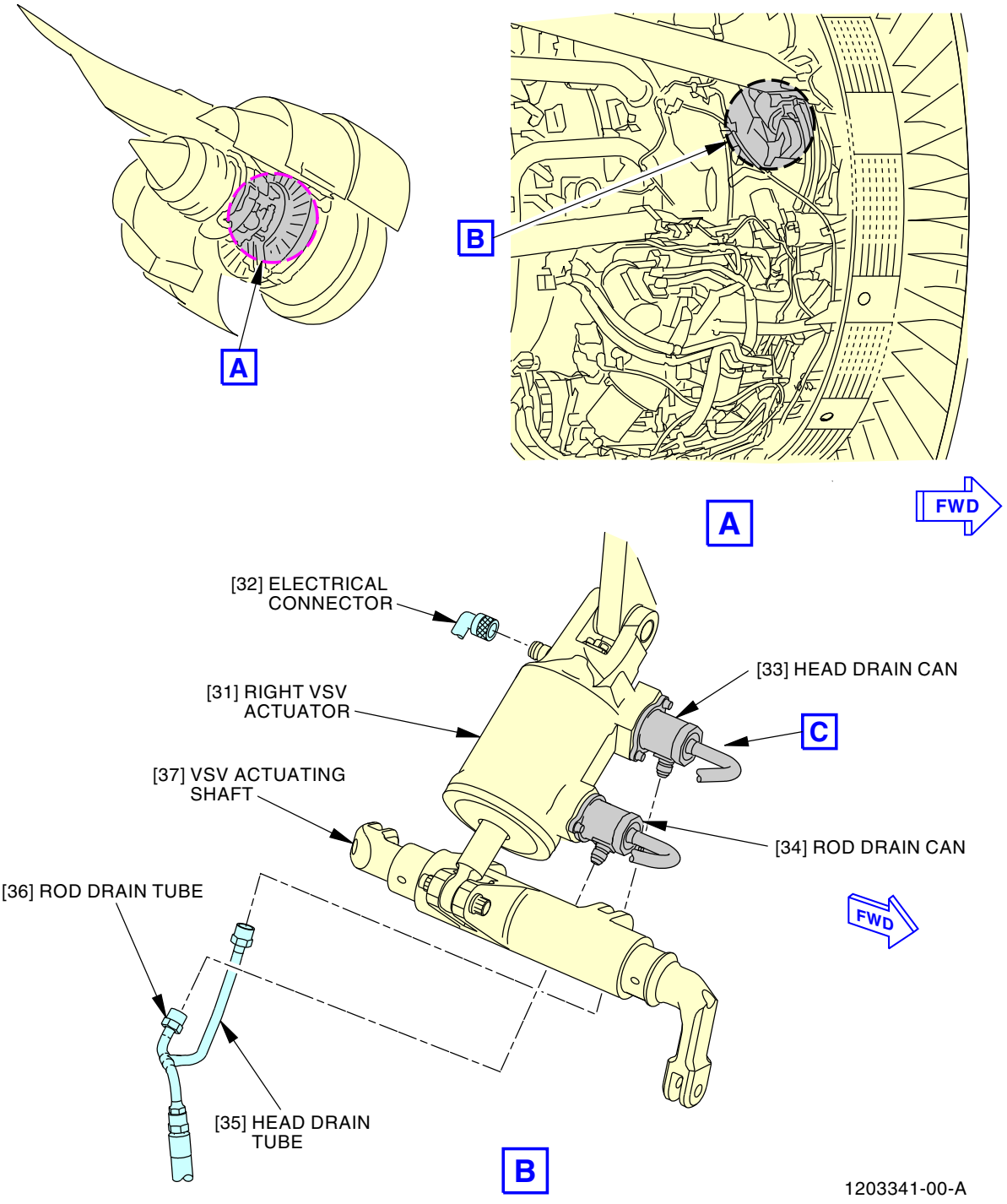
SUBTASK 75-31-02-020-010-H01

(4) Install protective covers on all tube-hoses and tubes.

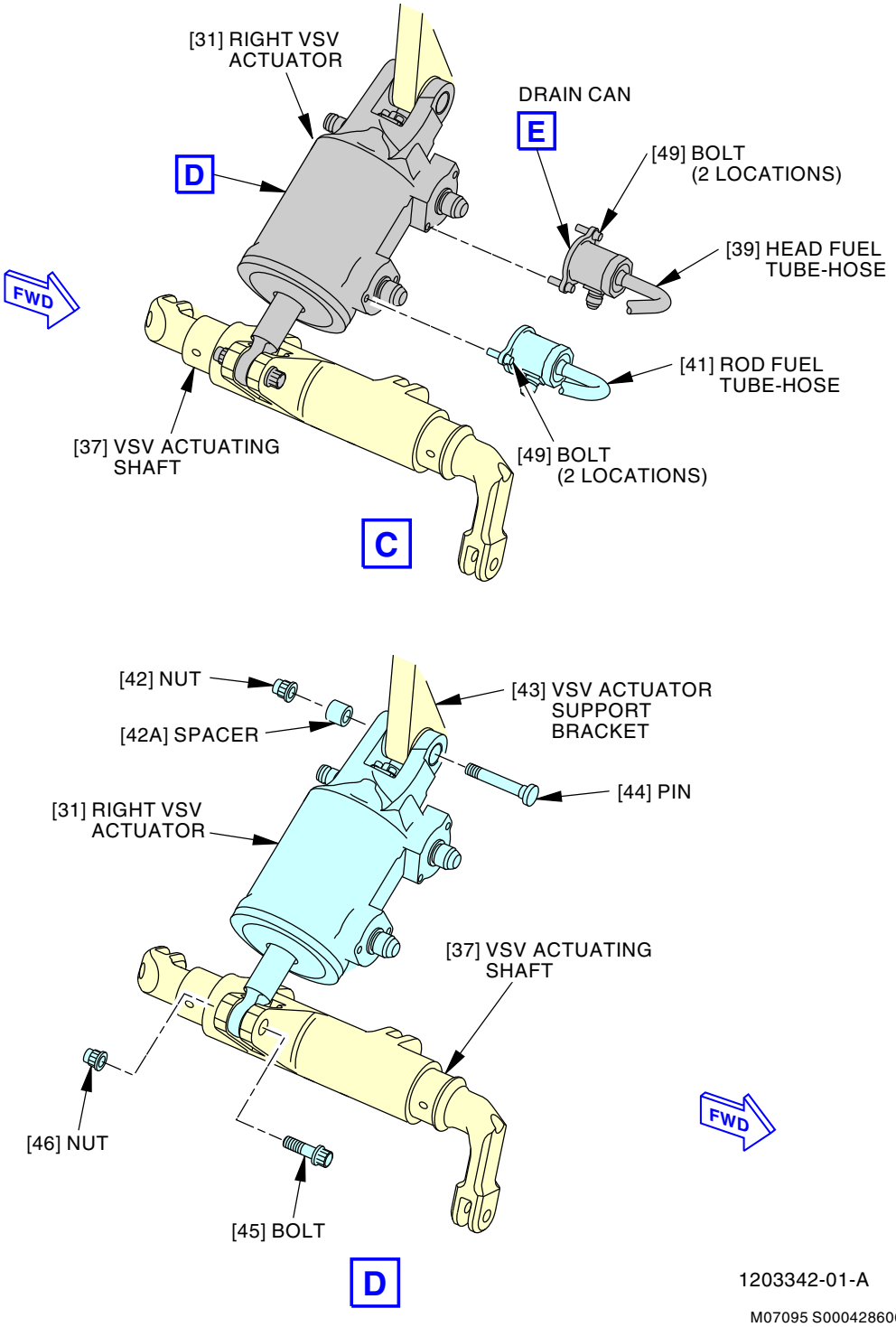
END OF TASK



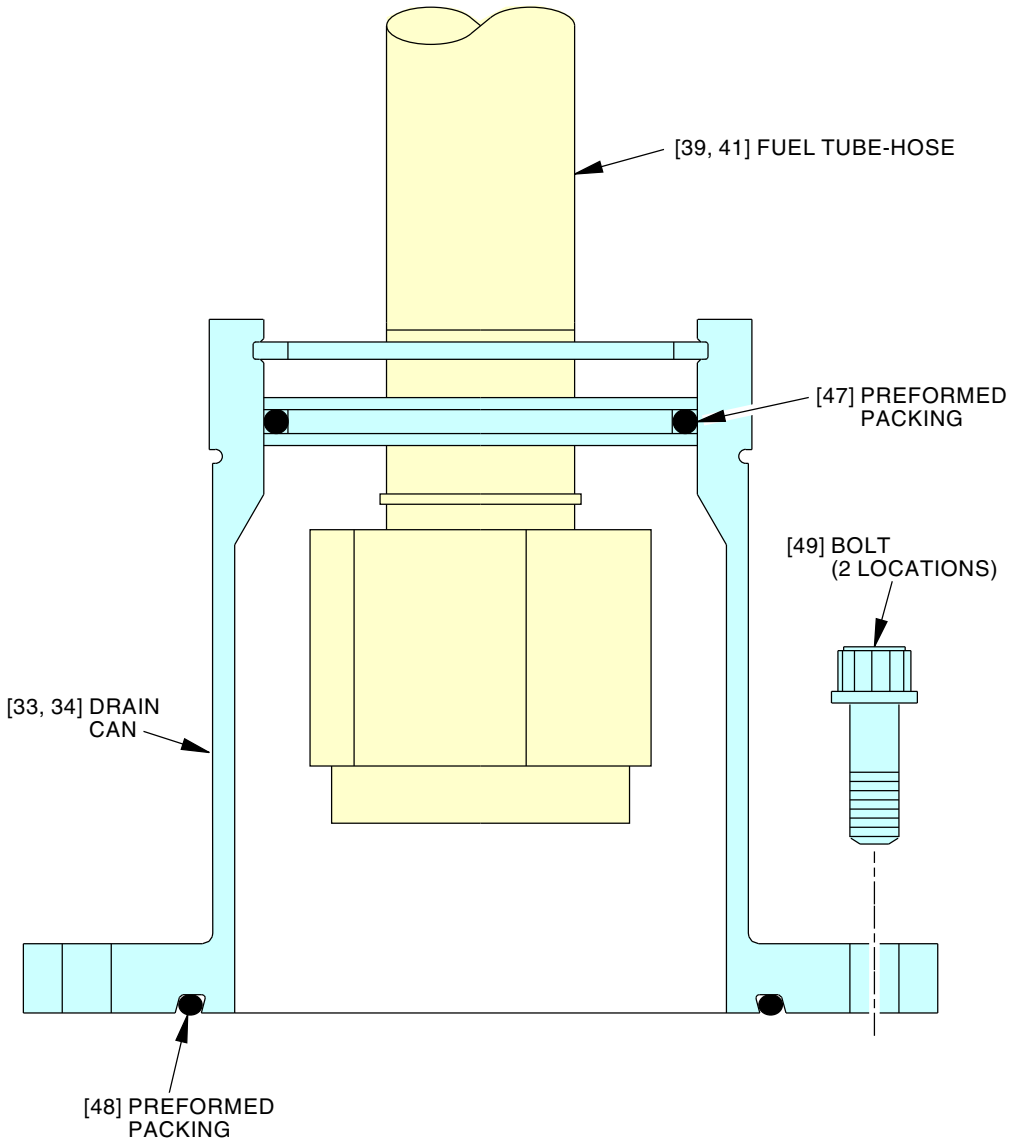
Engine Air Supply Duct Installation
Figure 402/75-31-02-990-804-H01



Right Variable Stator Vane (VSV) Actuator Installation
Figure 403/75-31-02-990-802-H01 (Sheet 1 of 3)



Right Variable Stator Vane (VSV) Actuator Installation
Figure 403/75-31-02-990-802-H01 (Sheet 2 of 3)



DRAIN CAN (EXAMPLE)

E

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Right Variable Stator Vane (VSV) Actuator Installation
Figure 403/75-31-02-990-802-H01 (Sheet 3 of 3)

TASK 75-31-02-400-803-H01

7. Right Variable Stator Vane (VSV) Actuator Installation

A. General

(1) This task is the installation procedure for the right variable stator vane actuator (referred to as the right VSV actuator).

(2) You must do the tests that are listed in the power plant test reference table after you install the right VSV actuator.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
36-11-01-400-806-004	Engine Duct Installation (P/B 401)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
D00071	Oil - Aircraft Turbine Engine, Synthetic Base	MIL-PRF-7808 Grade 3
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
31	Right VSV actuator	75-31-02-03-040	ARO ALL
47	Preformed packing	73-11-51-19-090	ARO ALL
48	Preformed packing	73-11-51-19-095	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

H. Right VSV Actuator Installation

SUBTASK 75-31-02-420-007-H01

(1) Install the right VSV actuator [31] to the VSV actuator support bracket [43] and the VSV actuating shaft [37] as follows (Figure 403):

(a) Apply Acheson GP460 compound, D50043 [C02-058] to the threads of the pin [44].

(b) Install the pin [44] through the clevis of the right VSV actuator [31] and the VSV actuator support bracket [43].

NOTE: The head of the pin will be on the forward side of the actuator.

(c) Install the spacer [42A] and the nut [42] from the aft side of the actuator.

1) Tighten the nut [42] to 176-194 pound-inches (19.9-21.9 Newton-meters).

(d) Apply Acheson GP460 compound, D50043 [C02-058] to the threads of the bolt [45].

(e) Install the bolt [45] and nut [46] that attaches the right VSV actuator [31] to the VSV actuating shaft [37].

1) Tighten the nut [46] to 785-985 pound-inches (89.0-111.3 Newton-meters).

SUBTASK 75-31-02-420-008-H01

(2) Remove the protective covers from all tube-hoses and tubes.

SUBTASK 75-31-02-420-009-H01

(3) Do these steps to install the ROD fuel tube-hose [41] and HEAD fuel tube-hose [39] and the HEAD drain can [33]and ROD drain can [34]:

(a) Connect the ROD fuel tube-hose [41] and HEAD fuel tube-hose [39] to the right VSV actuator [31] as follows:

1) Lubricate the two new preformed packings [47] and the two new preformed packings [48] with clean oil, D00071.

2) Install the preformed packing [47] in the packing grooves of the ROD fuel tube-hose [41] and HEAD fuel tube-hose [39].

3) Install the preformed packing [48] in the grooves on the face of the HEAD drain can [33] and ROD drain can [34].

4) Connect the ROD fuel tube-hose [41] to the right VSV actuator [31].

Tighten the ROD fuel tube-hose [41] with the triple torque method as follows:

a) Tighten the B-nut connection to 460 in-lb (52 N·m)-540 in-lb (61 N·m).

b) Loosen the B-nut of the fuel tube-hose and tighten it again to 460 in-lb (52 N·m)-540 in-lb (61 N·m).

c) Apply the specified torque again to make sure the torque of the B-nut of the oil tube/hose is 460 in-lb (52 N·m)-540 in-lb (61 N·m).

5) Connect the HEAD fuel tube-hose [39] to the right VSV actuator [31].

Tighten the HEAD fuel tube-hose [39] with the triple torque method as follows:

a) Tighten the B-nut connection to 460 in-lb (52 N·m)-540 in-lb (61 N·m).

b) Loosen the B-nut of the fuel tube-hose and tighten it again to 460 in-lb (52 N·m)-540 in-lb (61 N·m).

c) Apply the specified torque again to make sure the torque of the B-nut of the oil/hose is 460 in-lb (52 N·m)-540 in-lb (61 N·m).

(b) Move the HEAD drain can [33] forward to the right VSV actuator [31] and install the two captive bolts [49].

1) Tighten the captive bolts [49] to 110-120 pound inches (12.4-13.6 Newton-meters).

(c) Move the ROD drain can [34] forward to the right VSV actuator [31] and install the two captive bolts [49].

1) Tighten the captive bolts [49] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(d) Connect the ROD drain tube [36] to the ROD drain can [34].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

(e) Connect the HEAD drain tube [35] to the HEAD drain can [33].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

SUBTASK 75-31-02-420-010-H01

(4) Remove the protective covers from the right VSV actuator [31] electrical receptacle and the electrical connector [32].

SUBTASK 75-31-02-420-011-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(5) Use teflon-jawed pliers, STD-664 to connect the electrical connector [32] to the right VSV actuator [31](TASK 70-00-01-400-807-H01).

(a) Tighten the electrical connector [32].

SUBTASK 75-31-02-410-006-H01

(6) Install the HP/IP manifold [60] (TASK 36-11-01-400-806-004).

I. Put the Airplane Back to its Usual Condition.

SUBTASK 75-31-02-410-004-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-31-02-860-004-H01

(2) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

J. Right Variable Stator Vane (VSV) Actuator Installation Test

SUBTASK 75-31-02-710-004-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

VARIABLE BYPASS VALVE (VBV) SYSTEM - MAINTENANCE PRACTICES

1. General

A. This section contains the task to manually operate the variable bypass (VBV) system to the open or closed position. You will do this task when you do work on the VBV system.

TASK 75-32-00-700-801-H01

2. Variable Bypass Valve (VBV) Operation

(Figure 201 and Figure 202)

A. General

(1) This task is the procedure to manually put the VBV actuators in the open position.

(2) You must open the right thrust reverser to get access to do this task.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-4	Actuator - Hydraulic Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-2103	Hand Pump - Hydraulic, Portable Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-7880	Set - Adapter, VSV/VBV Part #: 9C1393G01 Supplier: 06083
STD-201	Container - Fuel Resistant, 5 U.S.-Gal (19 l)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Variable Bypass Valve (VBV) Operation

SUBTASK 75-32-00-010-002-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-32-00-869-001-H01

(2) Do these steps to make sure the fuel control valve and the spar valve stay in the closed position:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

1) Install a DO-NOT-OPERATE tag on the FUEL CONTROL switch.

(b) Push the STAT switch on the display select panel of the glareshield (P55).

1) Make sure you do not see the applicable ENG FUEL VALVE L(R) or FUEL SPAR VALVE L(R) status messages.

(c) For the applicable engines, open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

SUBTASK 75-32-00-020-001-H01

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING DO NOT LET OIL STAY ON YOUR SKIN. THE SYNTHETIC OIL CONTAINS ADDITIVES THAT CAN BE POISONOUS IF THEY ARE ABSORBED THROUGH THE SKIN. CLEAN AWAY ALL OIL THAT GETS ON THE SKIN.

WARNING DO NOT PUT EQUIPMENT OR PERSONNEL NEAR THE VSV OR VBV ACTUATOR AND ITS PARTS IF THERE IS FUEL PRESSURE. THE VSV AND VBV USES FUEL PRESSURE TO MOVE. DAMAGE TO EQUIPMENT AND INJURY COULD OCCUR IF THE VSV OR VBV MOVES.

(3) Install the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 and VSV/VBV adapter set, SPL-7880 as follows:

(a) Disconnect the VBV extend fuel tube [16] and the VBV retract fuel tube [17] from the HMU [8]:

1) Put the 5 U.S.-gal (19 l) fuel resistant container, STD-201 below the VBV retract fitting (VBV ret) [18] and VBV extend fitting (VBV ext) [19].

2) Disconnect the VBV extend fuel tube [16] from the VBV extend fitting (VBV ext) [19].

3) Disconnect the VBV retract fuel tube [17] from the VBV retract fitting (VBV ret) [18].

4) Permit the fuel to drain into the container.

5) Remove the bolt [4] from the clamp [2] that is forward of the HMU [8] on the VBV extend fuel tube [16] and the VBV retract fuel tube [17].

6) Move the VBV extend fuel tube [16] and the VBV retract fuel tube [17] away from the HMU [8].

7) Install the protective caps on the VBV retract fitting (VBV ret) [18] and the VBV extend fitting (VBV ext) [19].

(b) Connect the VSV/VBV adapter set, SPL-7880 extend and retract hoses to the VBV extend fuel tube [16] and the VBV retract fuel tube [17].

SUBTASK 75-32-00-980-001-H00

(4) Operate the VBV system to the fully close position:

NOTE: The VBV actuator shafts are extended when the VBV system is in the fully close position.

(a) Put the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 directional valve selector to the extend (Head End) position.

(b) Operate the hydraulic actuator at 50-100 psig to extend the shafts of the VBV actuators.

(c) Make sure that the shafts of the actuators move smoothly to the fully extended position.

NOTE: A bind in the system will cause an increase in the pressure reading during actuation.

SUBTASK 75-32-00-980-002-H00

(5) Operate the VBV system to the fully open position:

NOTE: The VBV actuator shafts are retracted when the VBV system is in the fully open position.

(a) Put the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 directional valve selector to the retract (Rod End) position.

(b) Operate the hydraulic actuator at 50-100 psig to extend the shafts of the VBV actuators.

(c) Make sure that the shafts of the actuators move smoothly to the fully retracted position.

NOTE: A bind in the system will cause an increase in the pressure reading during actuation.

(d) Release the pressure from the hydraulic hand pump, SPL-2103, if it is no longer necessary.

SUBTASK 75-32-00-090-001-H00

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING DO NOT LET OIL STAY ON YOUR SKIN. THE SYNTHETIC OIL CONTAINS ADDITIVES THAT CAN BE POISONOUS IF THEY ARE ABSORBED THROUGH THE SKIN. CLEAN AWAY ALL OIL THAT GETS ON THE SKIN.

(6) Disconnect the VSV/VBV adapter set, SPL-7880 extend and retract supply hoses as follows:

(a) Put the 5 U.S.-gal (19 l) fuel resistant container, STD-201 below the VBV retract fitting (VBV ret) [18] and the VBV extend fitting (VBV ext) [19].

(b) Disconnect the VSV/VBV adapter set, SPL-7880 extend supply hose from the VBV retract fuel tube [17].

(c) Disconnect the VSV/VBV adapter set, SPL-7880 retract supply hose from the VBV retract fuel tube [17].

(d) Permit the fuel to drain into the container.

SUBTASK 75-32-00-430-001-H00

(7) Connect the VBV extend fuel tube [16] and the VBV retract fuel tube [17] to the HMU as follows:

(a) Remove the protective caps on the VBV retract fitting (VBV ret) [18] and the VBV extend fitting (VBV ext) [19].

(b) Connect the VBV extend fuel tube [16] to the VBV extend fitting (VBV ext) [19].

(c) Connect the VBV retract fuel tube [17] to the VBV retract fitting (VBV ret) [18].

(d) Tighten the VBV extend fuel tube [16] and VBV retract fuel tube [17] B-nuts (TASK 70-51-00-910-801-H01).

SUBTASK 75-32-00-410-003-H00

(8) Install the clamp [2] as follows:

(a) Put the clamp [2] in its position on the VBV extend fuel tube [16] and the VBV retract fuel tube [17].

(b) Install the bolt [4] that attaches the clamp [2] to the VBV extend fuel tube [16] and the VBV retract fuel tube [17].

(c) Tighten the bolt [4] to 110-120 pound-inches (12.4-13.6 Newton-meters).

G. Put the Airplane Back to its Usual Condition.

SUBTASK 75-32-00-869-002-H01

(1) Do these steps to put the fuel control valve and the spar valve to the serviceable condition:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

(b) For the applicable engine, remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

SUBTASK 75-32-00-410-002-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

H. VBV System Leak Test

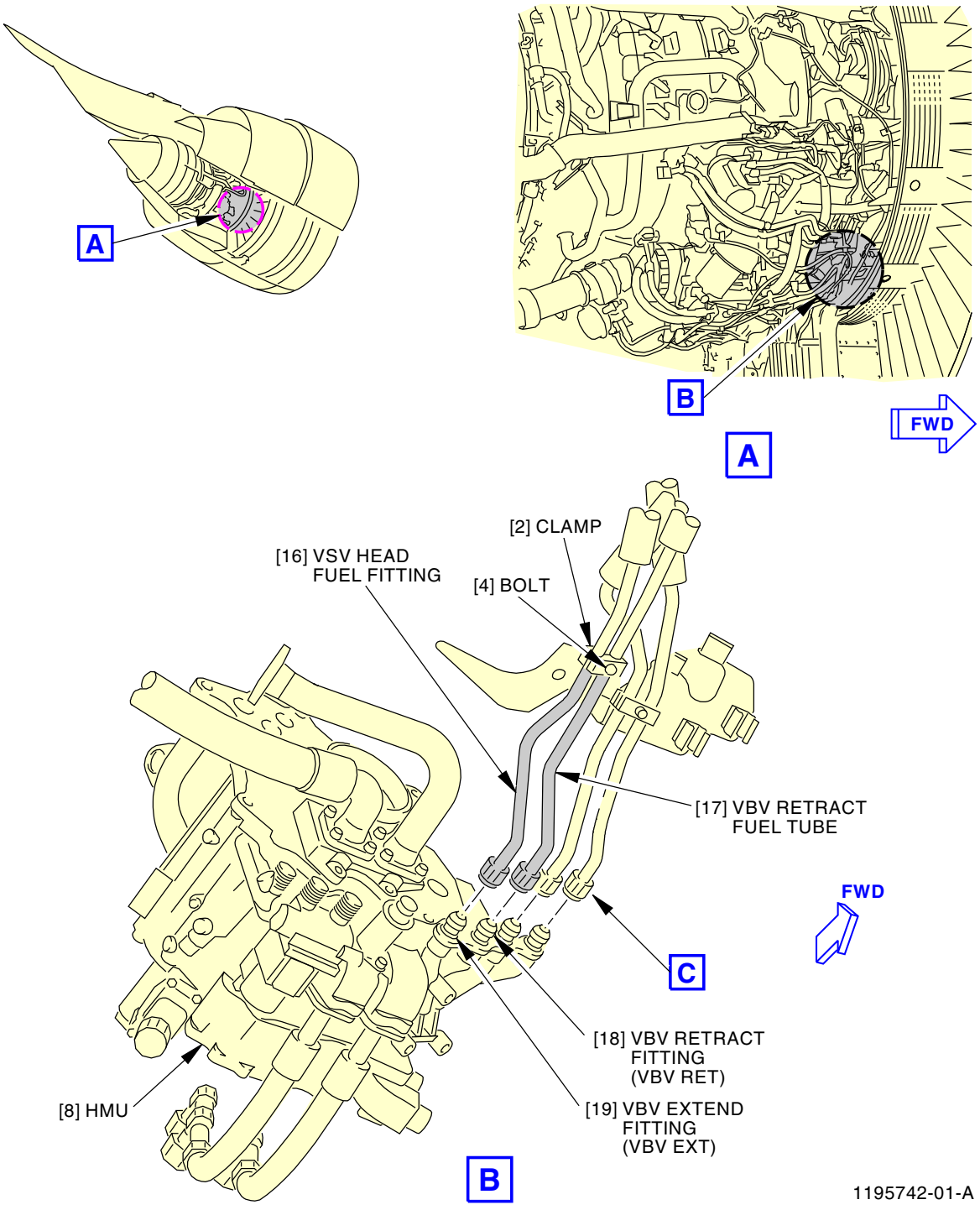
SUBTASK 75-32-00-790-001-H01

(1) Do a visual check of the VBV tube connections for leaks while you do the fuel driven actuator test on the MAT.

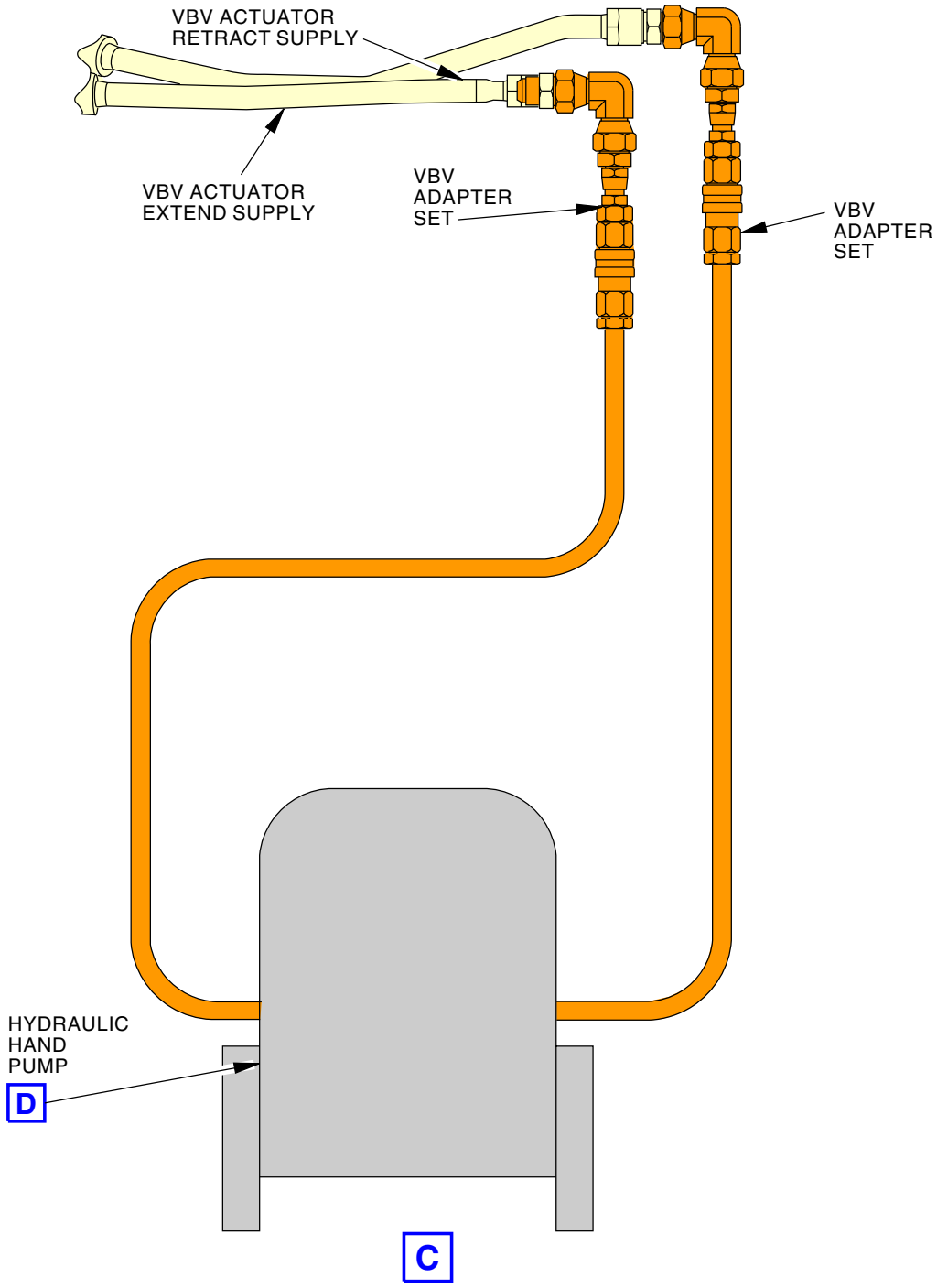
SUBTASK 75-32-00-710-001-H01

(2) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

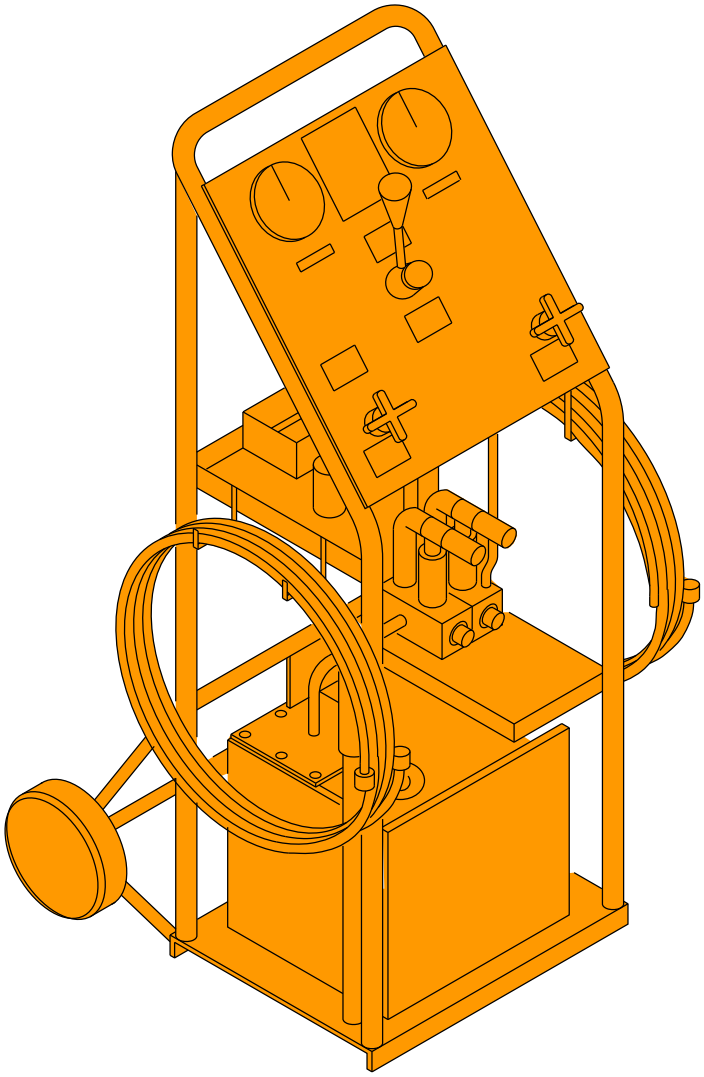
END OF TASK



Hydraulic Hand Pump Installation
Figure 201/75-32-00-990-802-H00 (Sheet 1 of 3)



Hydraulic Hand Pump Installation
Figure 201/75-32-00-990-802-H00 (Sheet 2 of 3)



HYDRAULIC HAND PUMP

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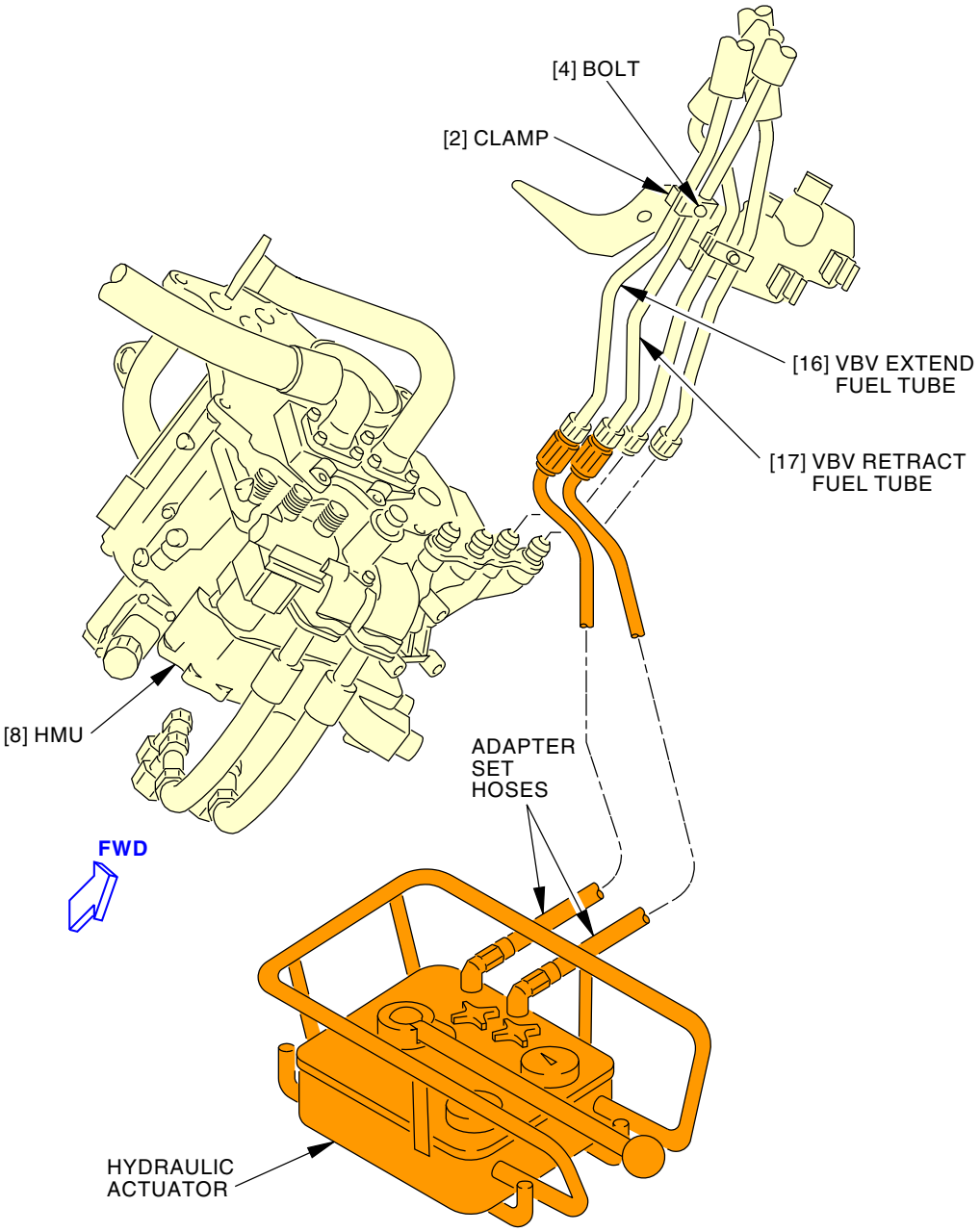
Hydraulic Hand Pump Installation
Figure 201/75-32-00-990-802-H00 (Sheet 3 of 3)



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Hydraulic Actuator Installation
Figure 202/75-32-00-990-801-H01

VBV DOOR AND ACTUATOR BELLCRANK TO UNISON RING CONNECTION HARDWARE - REMOVAL/INSTALLATION

1. General

A. This procedure has one task:

(1) An installation of the VBV door and actuator bellcrank to unison ring connection hardware.

TASK 75-32-00-400-802-H00

2. VBV Door and Actuator Bellcrank to Unison Ring Connection Hardware - Installation

A. General

(1) This procedure has two tasks:

(a) An installation of the VBV door/actuator bellcranks to unison ring.

(b) An installation of the VBV door/actuator bellcranks that connect to the unison.

NOTE: There are 10 VBV door bellcranks and two VBV actuator bellcranks that connect to the unison ring.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
72-21-01-000-801-H01	Fan Rotor Spinner Removal (P/B 401)
72-21-01-400-801-H01	Fan Rotor Spinner Installation (P/B 401)
72-21-02-020-801-H01	Fan Blades Removal (Selection) (P/B 401)
72-21-02-400-801-H01	Fan Blades Installation (Selection) (P/B 401)
72-21-04-000-801-H01	Fan Booster Acoustic Panel Removal (P/B 401)
72-21-04-400-801-H01	Fan Booster Acoustic Panel Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-585	Mat - Protective, Closed Cell Neoprene, 30-50 duro, Weather and Oil Resistant, 3/8 Inch Min Thickness, Minimum 42x60 Inches with Warning Streamers

D. Consumable Materials

Reference	Description	Specification
A01050 [C01-007]	Adhesive - Silicone Elastomer - RTV 106	
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Prepare for the Removal

SUBTASK 75-32-00-860-003-H00

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-32-00-010-003-H00

(2) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task: Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00.

Open these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task: Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00.

Open these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine

(Continued)

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-32-00-800-001-H00

CAUTION PUT THE PROTECTIVE MAT IN THE INLET COWL. THIS WILL PREVENT DAMAGE TO THE INLET COWL OR ENGINE BY TOOLS, PARTS, OR UNWANTED MATERIALS THAT FALL ON THE INLET COWL SURFACE.

(3) Put the protective mat, STD-585 in the lower half of the inlet cowl to prevent damage to the cowl and the engine.

SUBTASK 75-32-00-010-004-H00

(4) Do this task: Fan Rotor Spinner Removal, TASK 72-21-01-000-801-H01.

SUBTASK 75-32-00-010-005-H00

(5) Do this task: Fan Blades Removal (Selection), TASK 72-21-02-020-801-H01.

SUBTASK 75-32-00-010-006-H00

(6) Do this task: Fan Booster Acoustic Panel Removal, TASK 72-21-04-000-801-H01.

H. Procedure

SUBTASK 75-32-00-420-003-H00

(1) Attach the actuator bellcranks as follows (Figure 401):

(a) Apply Acheson GP460 compound, D50043 [C02-058] to the threads and the washer faces of the bolt [1, 18], nut [3, 21], and pin [19].

NOTE: Use a minimum quantity of lubricant necessary for assembly. After assembly, remove the unwanted lubricant with a clean cloth.

(b) Install the pin [19], the bolt [18], and the nut [21] to hold the actuator bellcranks to the unison ring. The bolts and the pins must be installed from the outboard side of the unison ring and through the bellcranks.

(c) Tighten the nuts to 110 in-lb (12.4 N·m)-120 in-lb (13.6 N·m).

(d) Remove excess graphite grease from nut [21] and bolt [18] end.

(e) Apply RTV 106 adhesive, A01050 [C01-007] to fully cover nut [21] and bolt [18] end (Figure 402).

SUBTASK 75-32-00-420-004-H00

(2) Attach the VBV door bellcranks as follows (Figure 401):

(a) Apply Acheson GP460 compound, D50043 [C02-058] to the threads and the washer faces of the bolts [1, 18], nuts [3, 21], and pin [19].

NOTE: Use a minimum quantity of lubricant necessary for assembly. After assembly, remove the unwanted lubricant with a clean cloth.

(b) Install the bolt [1] and the nut [3] to hold the bypass door bellcranks to the unison ring. The bolts must be installed from the outboard side of the unison ring and through the bellcranks.

(c) Tighten the nuts to 60 in-lb (6.8 N·m)-70 in-lb (7.9 N·m).

(d) Remove excess graphite grease from nut [3] and bolt [1] end.

(e) Apply RTV 106 adhesive, A01050 [C01-007] to fully cover nut [3] and bolt [1] end (Figure 402).

I. Put the Airplane Back to Its Usual Condition

SUBTASK 75-32-00-410-006-H00

(1) Do this task: Fan Booster Acoustic Panel Installation, TASK 72-21-04-400-801-H01.

SUBTASK 75-32-00-410-007-H00

(2) Do this task: Fan Blades Installation (Selection), TASK 72-21-02-400-801-H01.

SUBTASK 75-32-00-410-008-H00

(3) Do this task: Fan Rotor Spinner Installation, TASK 72-21-01-400-801-H01.

SUBTASK 75-32-00-800-002-H00

CAUTION

MAKE SURE THERE ARE NO TOOLS, PARTS, OR OTHER UNWANTED MATERIAL IN THE INLET COWL. IF YOU DO NOT OBEY THESE INSTRUCTIONS, YOU CAN CAUSE DAMAGE TO THE ENGINE.

(4) Remove the mats from the engine inlet cowl.

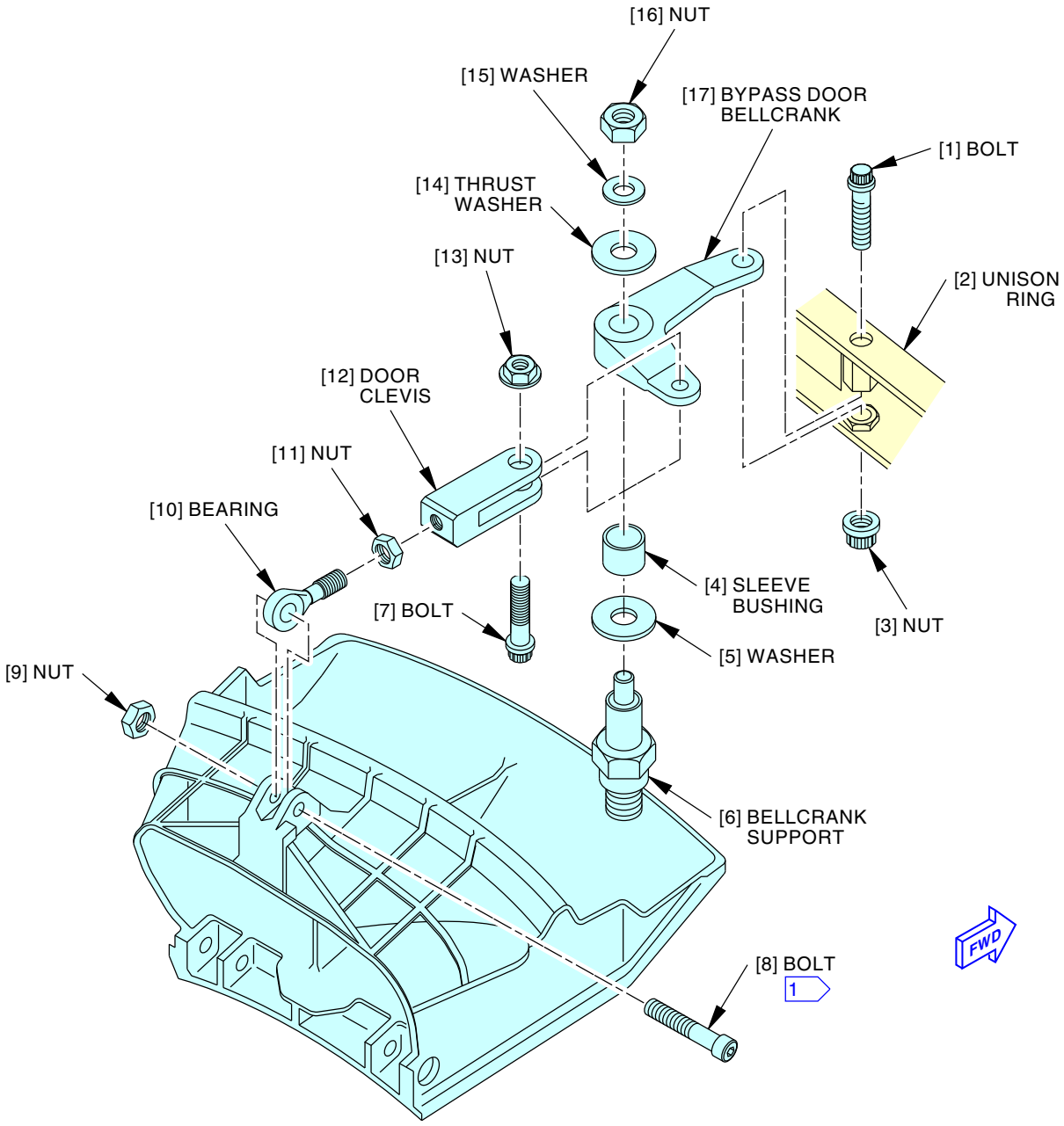
SUBTASK 75-32-00-860-004-H00

(5) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

END OF TASK



NOTE:

1 BOLT HEAD MUST BE INSTALLED IN THE UPPER (HEAD UP) POSITION AT EACH DOOR

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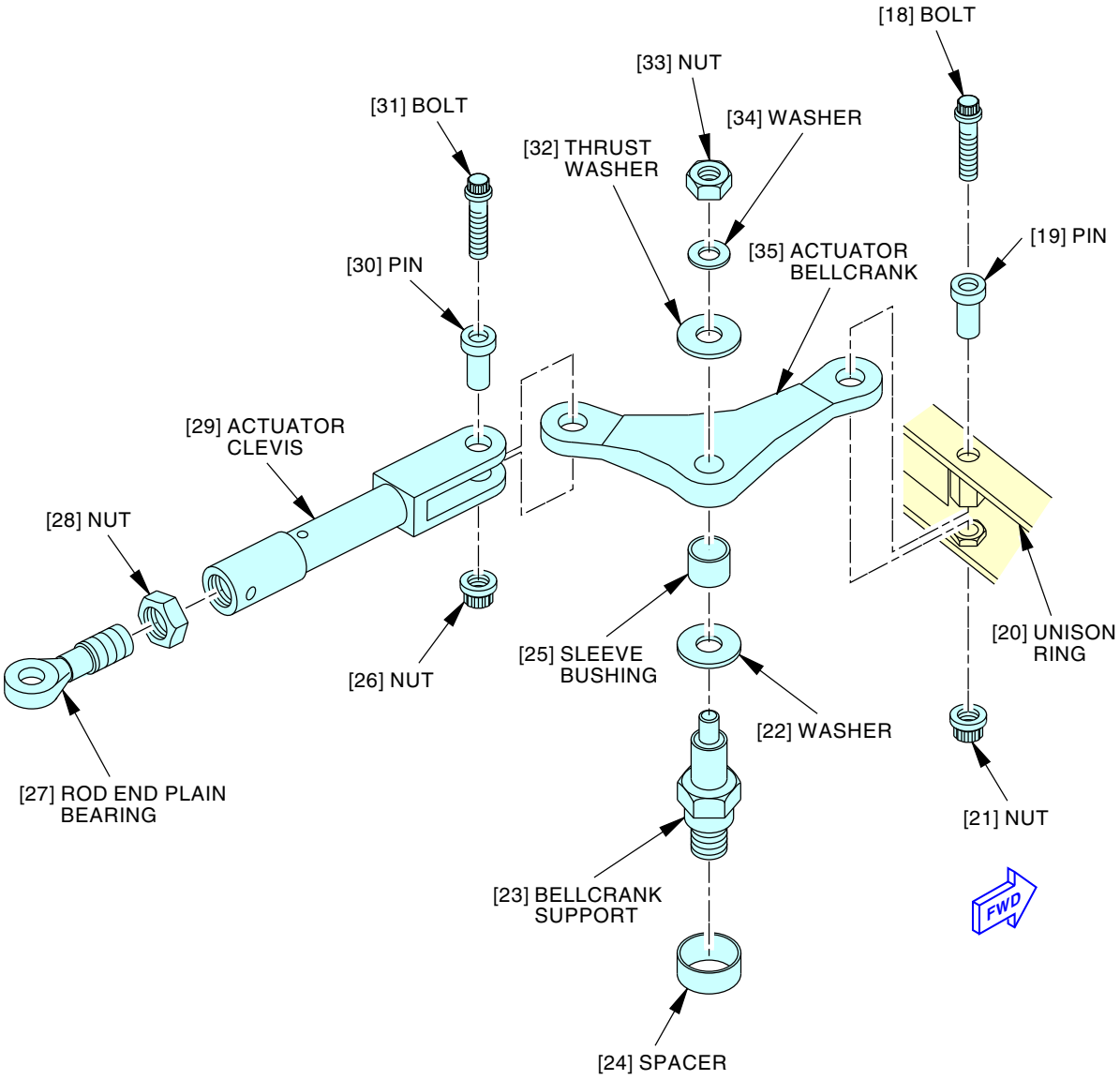
VBV DOOR AND ACTUATOR BELLCRANK TO UNISON RING CONNECTION HARDWARE INSTALLATION
Figure 401/75-32-00-990-803-H00 (Sheet 1 of 2)



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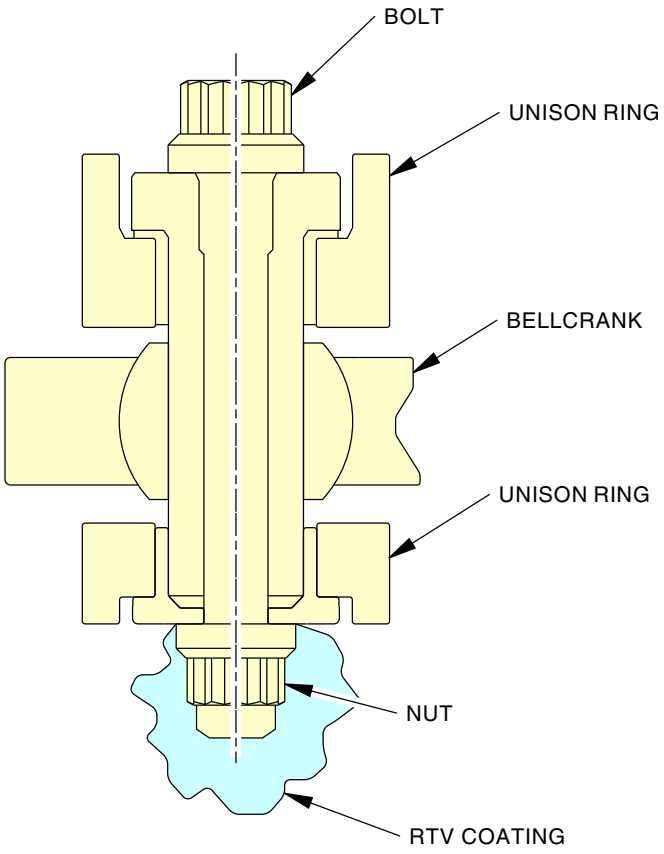
VBV DOOR AND ACTUATOR BELLCRANK TO UNISON RING CONNECTION HARDWARE INSTALLATION
Figure 401/75-32-00-990-803-H00 (Sheet 2 of 2)



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VBV Door and Actuator Bellcrank to Unison Ring Sealant Application
Figure 402/75-32-00-990-804-H00

LEFT VARIABLE BYPASS VALVE (VBV) ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the left variable bypass valve actuator

(2) An installation of the left variable bypass valve actuator.

TASK 75-32-01-000-801-H01

2. Left Variable Bypass Valve (VBV) Actuator Removal

Figure 401, Figure 402 and Figure 403

A. General

(1) This task is the removal procedure for the left variable bypass valve actuator (referred to as the left VBV actuator).

(2) The left VBV actuator is at the 10:00 o'clock position on the engine core.

(3) You must open the left thrust reverser to get access to the left VBV actuator.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-4	Actuator - Hydraulic Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-2103	Hand Pump - Hydraulic, Portable Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-7880	Set - Adapter, VSV/VBV Part #: 9C1393G01 Supplier: 06083
STD-201	Container - Fuel Resistant, 5 U.S.-Gal (19 l)
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

F. Prepare for the Removal

SUBTASK 75-32-01-860-004-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-32-01-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the left thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(e) For the left thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

SUBTASK 75-32-01-869-001-H01

(3) Do these steps to make sure the fuel control valve and the spar valve stay in the closed position:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

1) Install a DO-NOT-OPERATE tag on the FUEL CONTROL switch.

(b) Push the STAT switch on the display select panel of the glareshield (P55).

1) Make sure you do not see the applicable ENG FUEL VALVE L(R) or FUEL SPAR VALVE L(R) status messages.

(c) For the applicable engines, open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

G. Left VBV Actuator Removal

SUBTASK 75-32-01-480-001-H01

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING DO NOT LET OIL STAY ON YOUR SKIN. THE SYNTHETIC OIL CONTAINS ADDITIVES THAT CAN BE POISONOUS IF THEY ARE ABSORBED THROUGH THE SKIN. CLEAN AWAY ALL OIL THAT GETS ON THE SKIN.

WARNING DO NOT PUT EQUIPMENT OR PERSONNEL NEAR THE VSV OR VBV ACTUATOR AND ITS PARTS IF THERE IS FUEL PRESSURE. THE VSV AND VBV USES FUEL PRESSURE TO MOVE. DAMAGE TO EQUIPMENT AND INJURY COULD OCCUR IF THE VSV OR VBV MOVES.

(1) Install the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 and VSV/VBV adapter set, SPL-7880 to the VBV fuel manifold as follows:

(a) Disconnect the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5] from the HMU [1].

1) Put the 5 U.S.-gal (19 l) fuel resistant container, STD-201 below the VBV retract fitting [6] and the VBV extend fitting [7].

2) Disconnect the VBV extend (Head End) fuel tube [4] from the VBV extend fitting [7].

3) Disconnect the VBV retract (Rod End) fuel tube [5] from VBV retract fitting [6].

4) Permit the fuel to drain into the container.

5) Remove the bolts [3] from the clamps [2] at the forward end of the HMU [1] on the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].

6) Move the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5] away from the HMU [1].

7) Install protective caps on the VBV retract fitting [6] and the VBV extend fitting [7].

(b) Connect the VSV/VBV adapter set, SPL-7880 extend and retract supply hoses to the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].

SUBTASK 75-32-01-430-001-H00

(2) Connect the hydraulic hand pump, SPL-2103 supply and return hoses to the corresponding hoses of the VSV/VBV adapter set, SPL-7880.

SUBTASK 75-32-01-860-002-H01

(3) Move the VBV system to the fully open position.

(a) Put the hydraulic hand pump, SPL-2103 or the hydraulic actuator, SPL-4 directional valve selector to the retracted (Rod End) position.

1) Move the left VBV actuator [48] to the fully retracted position.

2) Release the hydraulic pressure from the left VBV actuator [48].

SUBTASK 75-32-01-010-005-H01

(4) Remove the two saddle clamps [22] attached to the hose-tube [23].

(a) Remove the four bolts [21] from the two saddle clamps [22].

(b) Remove the saddle clamps [22].

SUBTASK 75-32-01-010-002-H01

(5) Remove the blankoff panel [32] (position 7) from the inner cowl support at the fan hub frame.

(a) Loosen the captive screws [31] from the blankoff panel [32] to the inner cowl support.

(b) Remove the blankoff panel [32].

SUBTASK 75-32-01-010-003-H01

(6) Remove the cover plate [34] from the inner cowl support at the fan hub frame.

(a) Remove the four bolts [33] from the cover plate [34] at the inner cowl support.

(b) Remove the cover plate [34] from the inner cowl support.

SUBTASK 75-32-01-010-004-H01

CAUTION

MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION

USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(7) Use the teflon-jawed pliers, STD-664 to disconnect the electrical connector [49] from the left VBV actuator [48](TASK 70-00-01-400-807-H01).

(a) Disconnect the electrical connector [49] from the left VBV actuator [48].

(b) Install the protective covers to the electrical receptacle of the left VBV actuator [48] and the electrical connector [49].

SUBTASK 75-32-01-020-001-H01

WARNING

DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(8) Remove the extend (Head End) drain can [42] and the retract (Rod End) drain can [43] from the left VBV actuator [48].

(a) Remove the drain tube-hose [46] from the extend (Head End) drain can [42] and the retract (Rod End) drain can [43].

(b) Remove the two bolts [41] at the extend (Head End) drain can [42] of the left VBV actuator [48].

(c) Move the extend (Head End) drain can [42] away from the left VBV actuator [48].

(d) Remove the two bolts [41] at the retract (Rod End) drain can [43] of the left VBV actuator [48].

(e) Move the retract (Rod End) drain can [43] away from the left VBV actuator [48].

SUBTASK 75-32-01-020-002-H01

(9) Remove the extend (Head End) tube-hose [50] and the retract (Rod End) tube-hose [45] from the left VBV actuator [48].

(a) Remove and discard the preformed packings [51] and the preformed packings [44] from the extend (Head End) tube-hose [50].

(b) Remove and discard the preformed packings [51] and the preformed packings [44] from the retract (Rod End) tube-hose [45].

SUBTASK 75-32-01-020-003-H01

(10) Remove the left VBV actuator [48] from the fan hub frame.

(a) Install the extend (Head End) tube-hose [50] and the retract (Rod End) tube-hose [45] to the left VBV actuator [48].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

(b) Remove the four bolts [47] from the left VBV actuator [48] at the fan hub frame.

(c) Move the left VBV actuator [48] rearward with the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 as follows:

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING DO NOT LET OIL STAY ON YOUR SKIN. THE SYNTHETIC OIL CONTAINS ADDITIVES THAT CAN BE POISONOUS IF THEY ARE ABSORBED THROUGH THE SKIN. CLEAN AWAY ALL OIL THAT GETS ON THE SKIN.

1) Make sure that you connect the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 retract and extend supply hoses to the VBV extend (Head End) fuel tube [4] and VBV retract (Rod End) fuel tube [5].

2) Put the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 directional valve selector to the extend (Head End) position.

3) Extend the left VBV actuator shaft [63] to push the actuator away from the fan hub frame.

4) When you see the actuator left VBV actuator [48] moves rearward, stop and hold the left VBV actuator [48] with your hands.

5) Align the bolt [61] with the access port in the inner cowl support.

6) Release the hydraulic pressure from the left VBV actuator [48].

SUBTASK 75-32-01-020-004-H01

CAUTION MAKE SURE THAT YOU DO NOT REMOVE THE BOLT FROM THE PIVOT SLEEVE ASSEMBLY. IF YOU REMOVE THE BOLT FROM THE PIVOT SLEEVE, THE PIVOT SLEEVE CAN FALL INTO THE ENGINE AND CAUSE DAMAGE TO EQUIPMENT.

CAUTION DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(11) Hold the left VBV actuator [48] and remove the bolt [61] and the pivot sleeve [62] from the left VBV actuator shaft [63] clevis and the VBV actuator adjusting rod [64].

NOTE: The bolt will be loose in the pivot sleeve when it is free from the nut on the actuator shaft

SUBTASK 75-32-01-020-005-H01

(12) Remove the extend (Head End) tube-hose [50] and the retract (Rod End) tube-hose [45] from the left VBV actuator [48].

SUBTASK 75-32-01-020-006-H01

CAUTION DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(13) Remove the left VBV actuator [48].

SUBTASK 75-32-01-480-002-H01

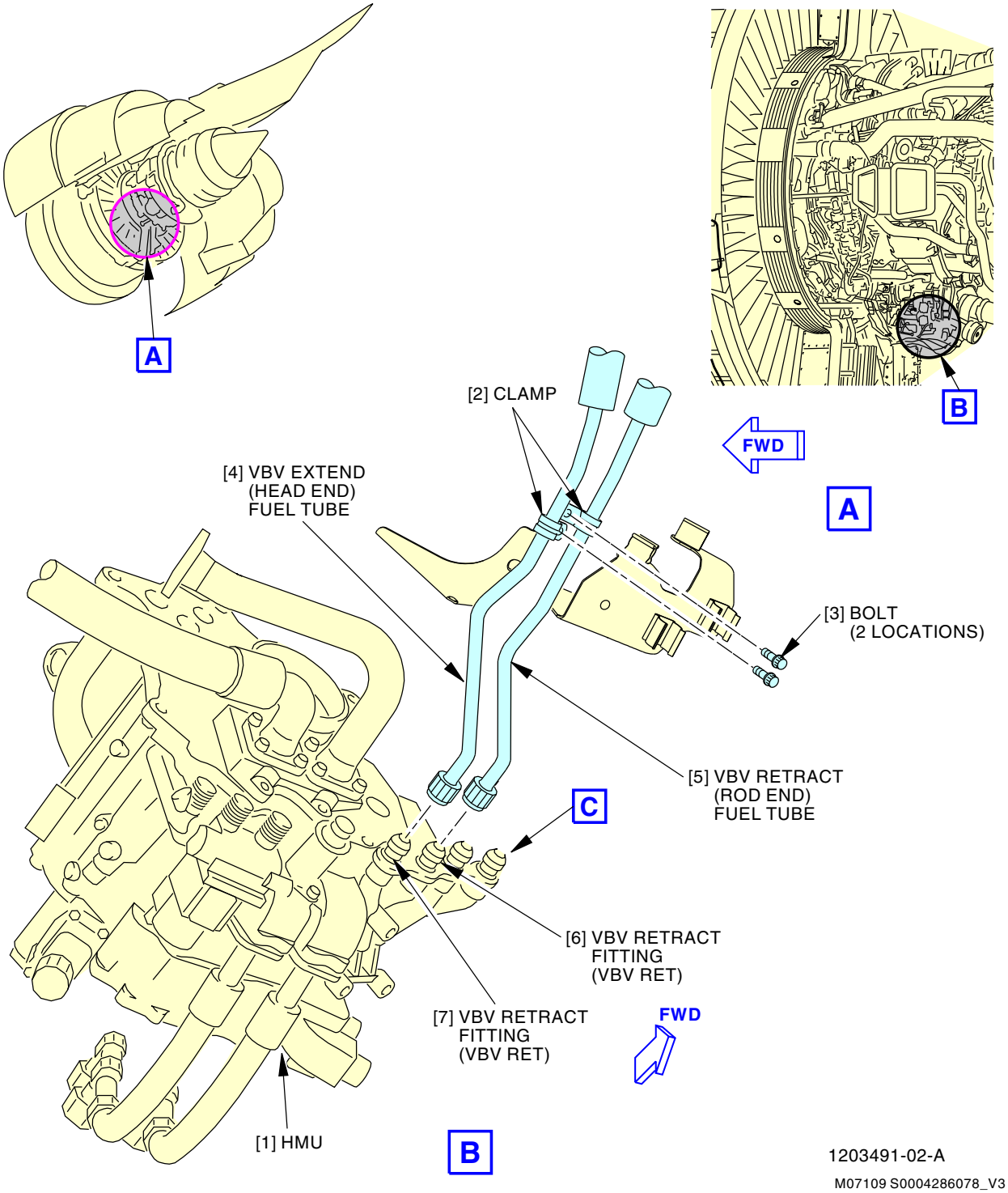
CAUTION DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(14) Install the protective cover over the left VBV actuator shaft [63].

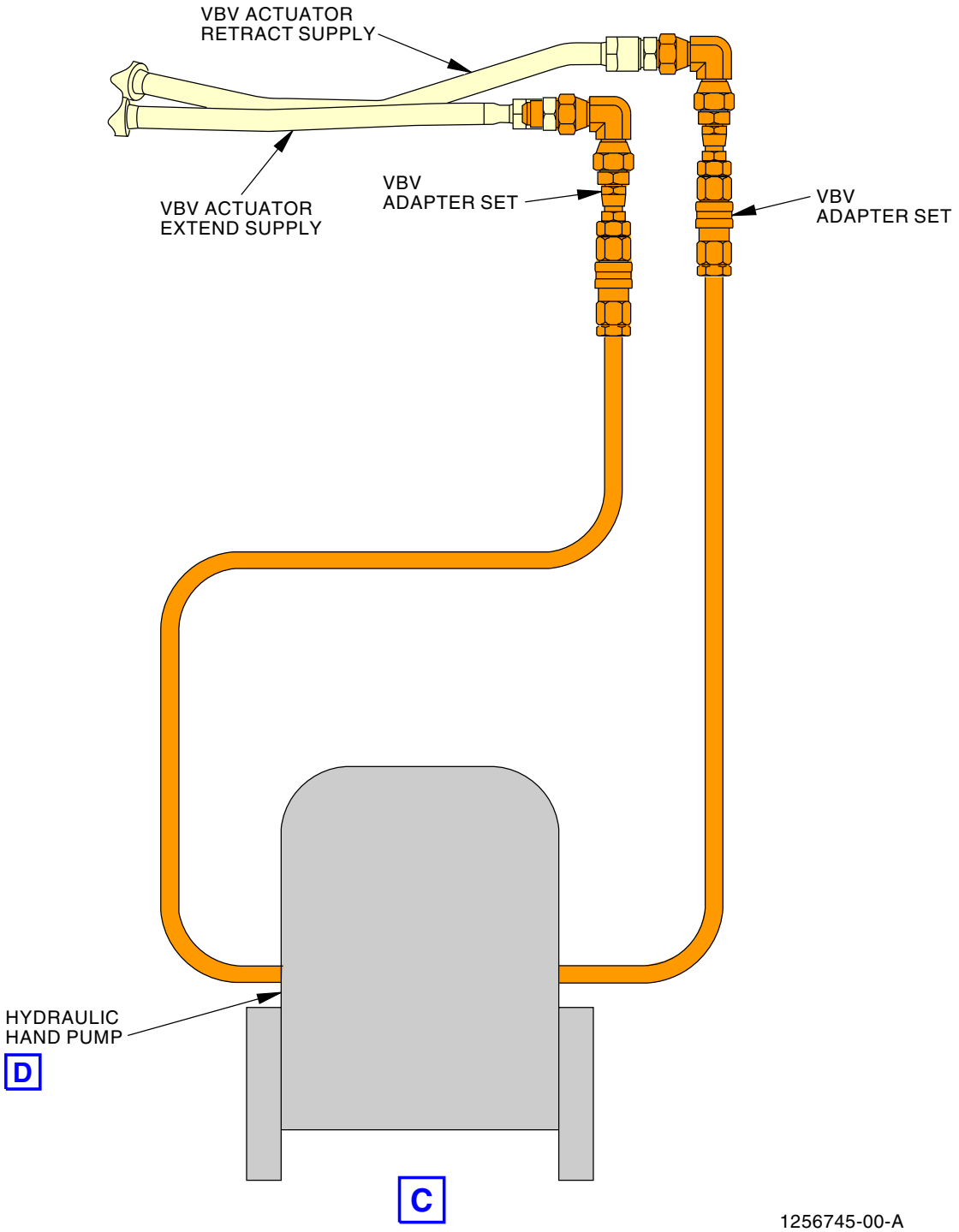
SUBTASK 75-32-01-400-001-H01

(15) Install the protective covers on all tube-hoses, tubes, fittings, and openings.

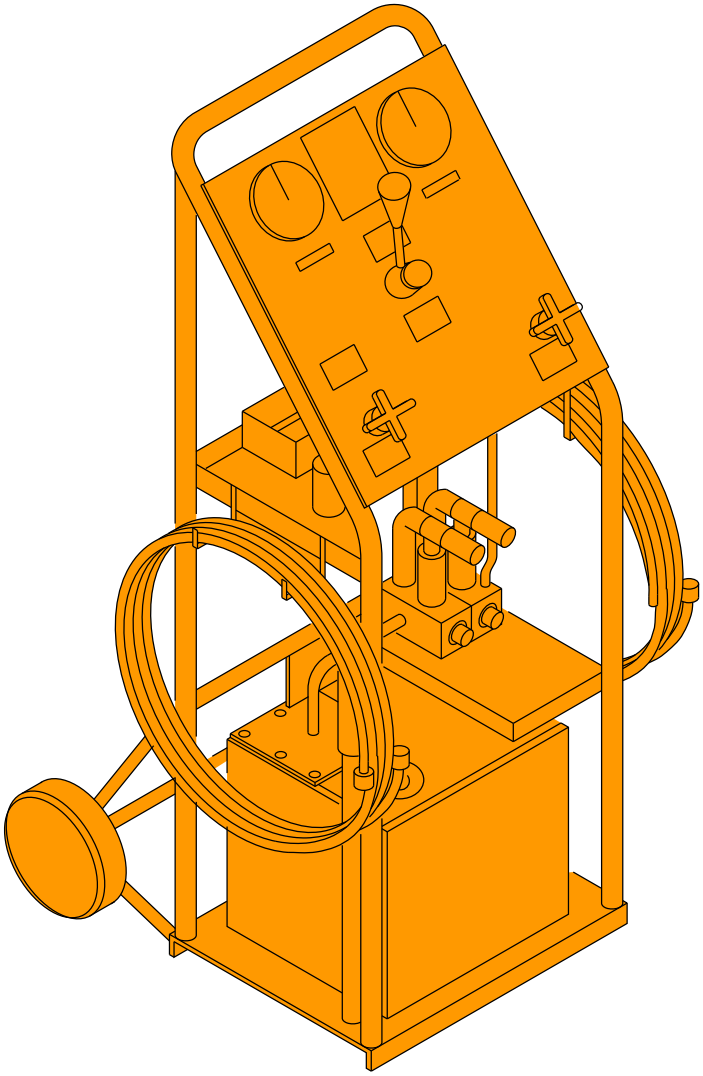
——— END OF TASK ———



Hydraulic Hand Pump Installation
Figure 401/75-32-01-990-801-H01 (Sheet 1 of 3)



Hydraulic Hand Pump Installation
Figure 401/75-32-01-990-801-H01 (Sheet 2 of 3)



HYDRAULIC HAND PUMP

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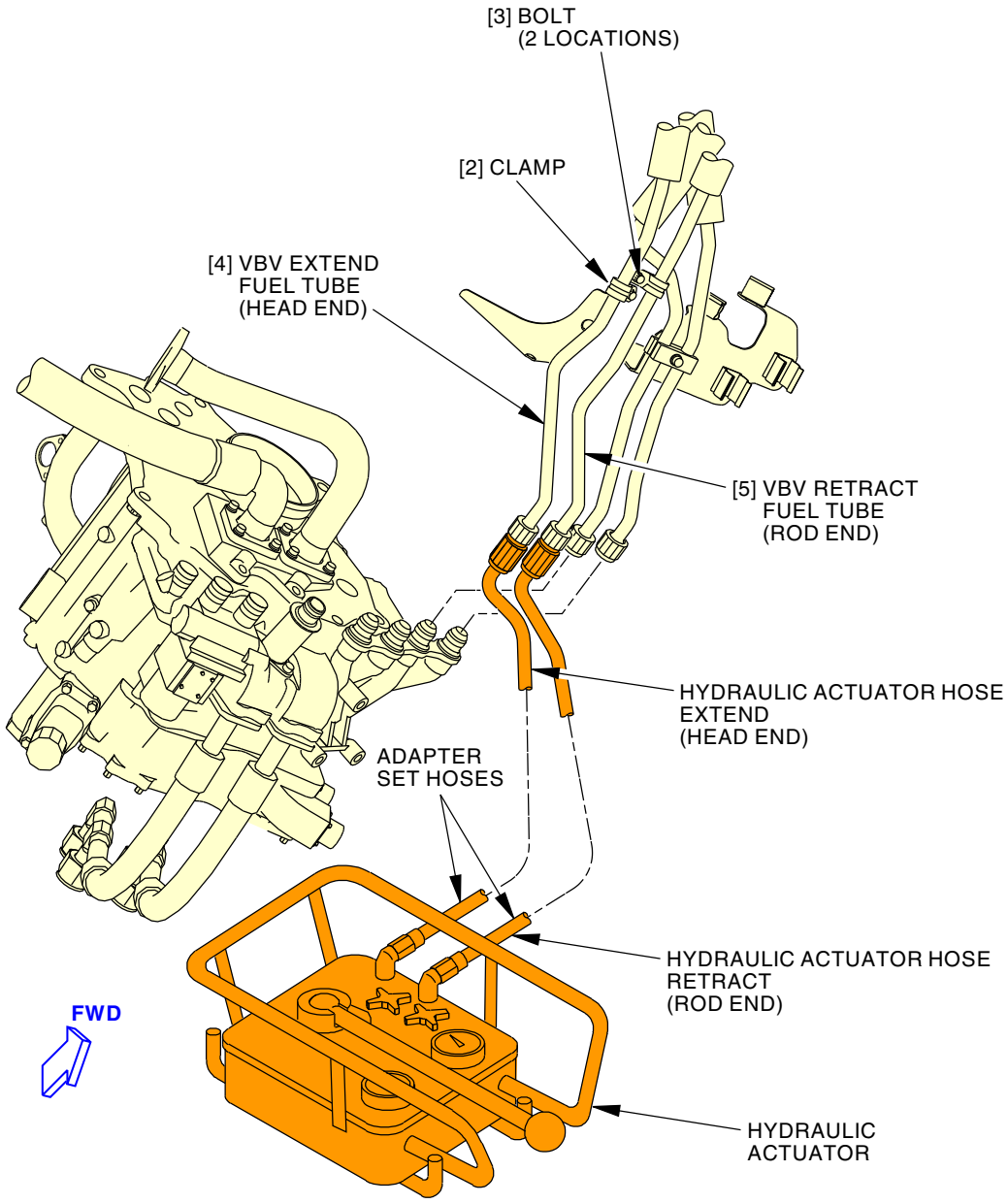
Hydraulic Hand Pump Installation
Figure 401/75-32-01-990-801-H01 (Sheet 3 of 3)



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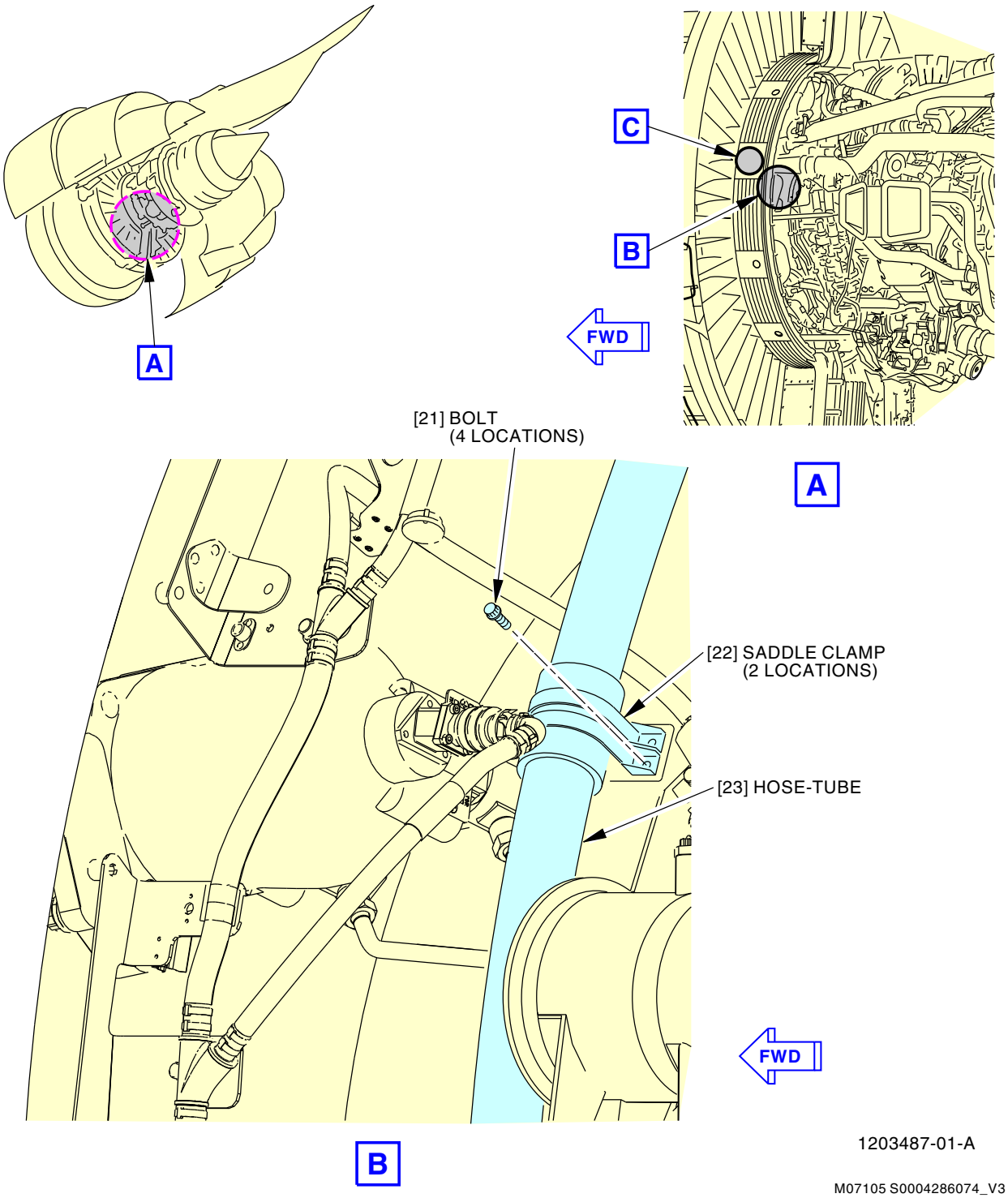
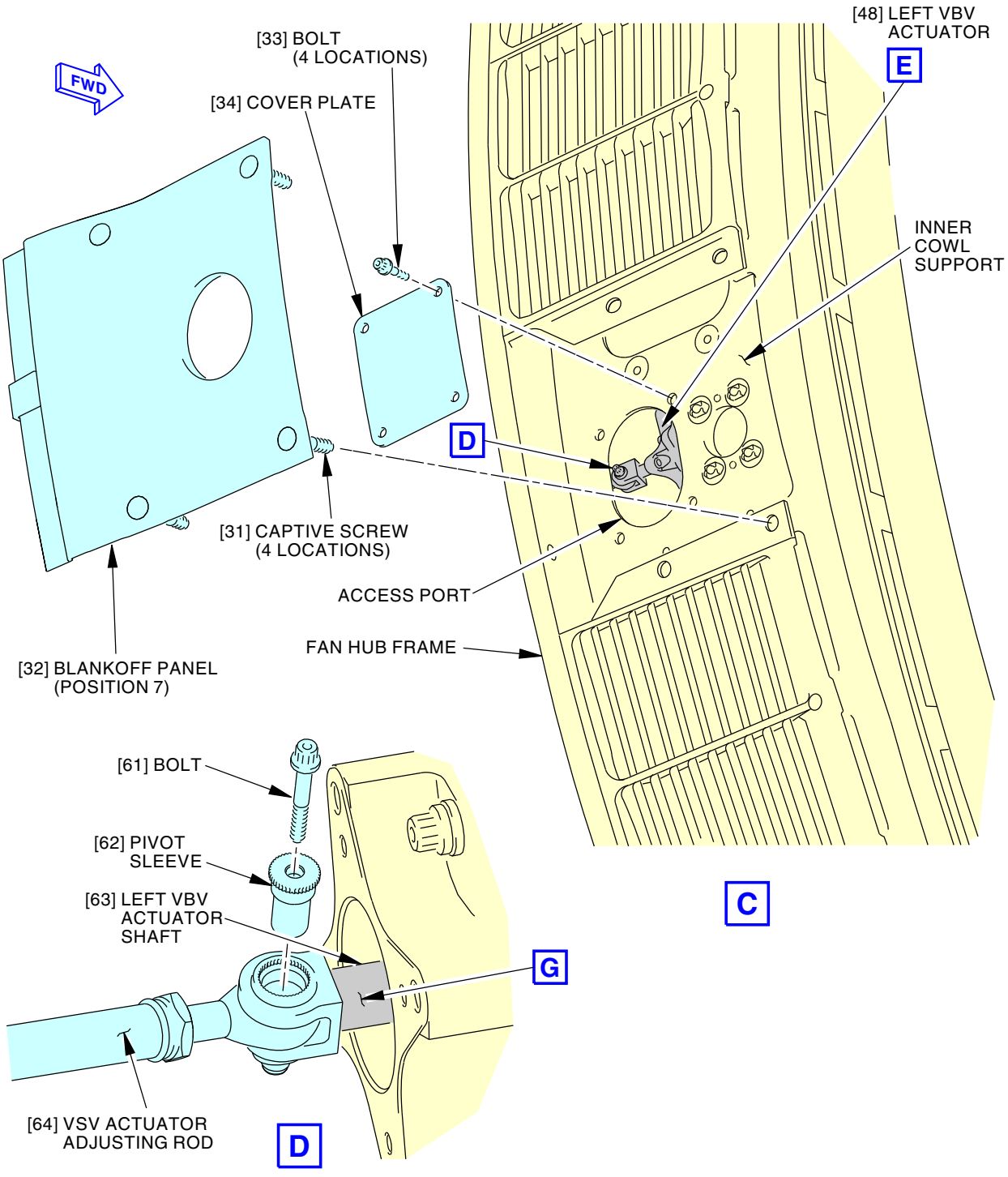
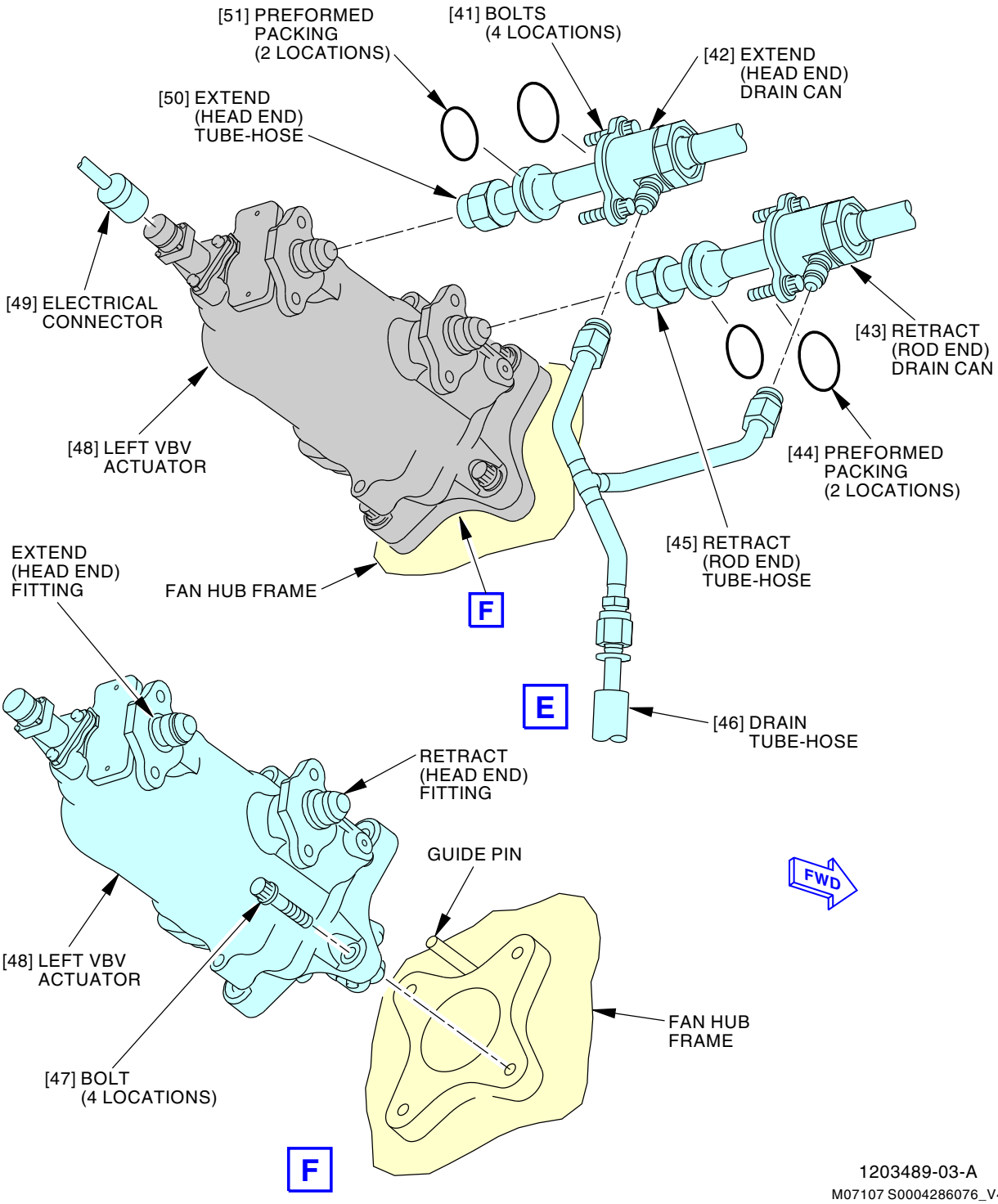
Hydraulic Actuator Installation
Figure 402/75-32-01-990-804-H00



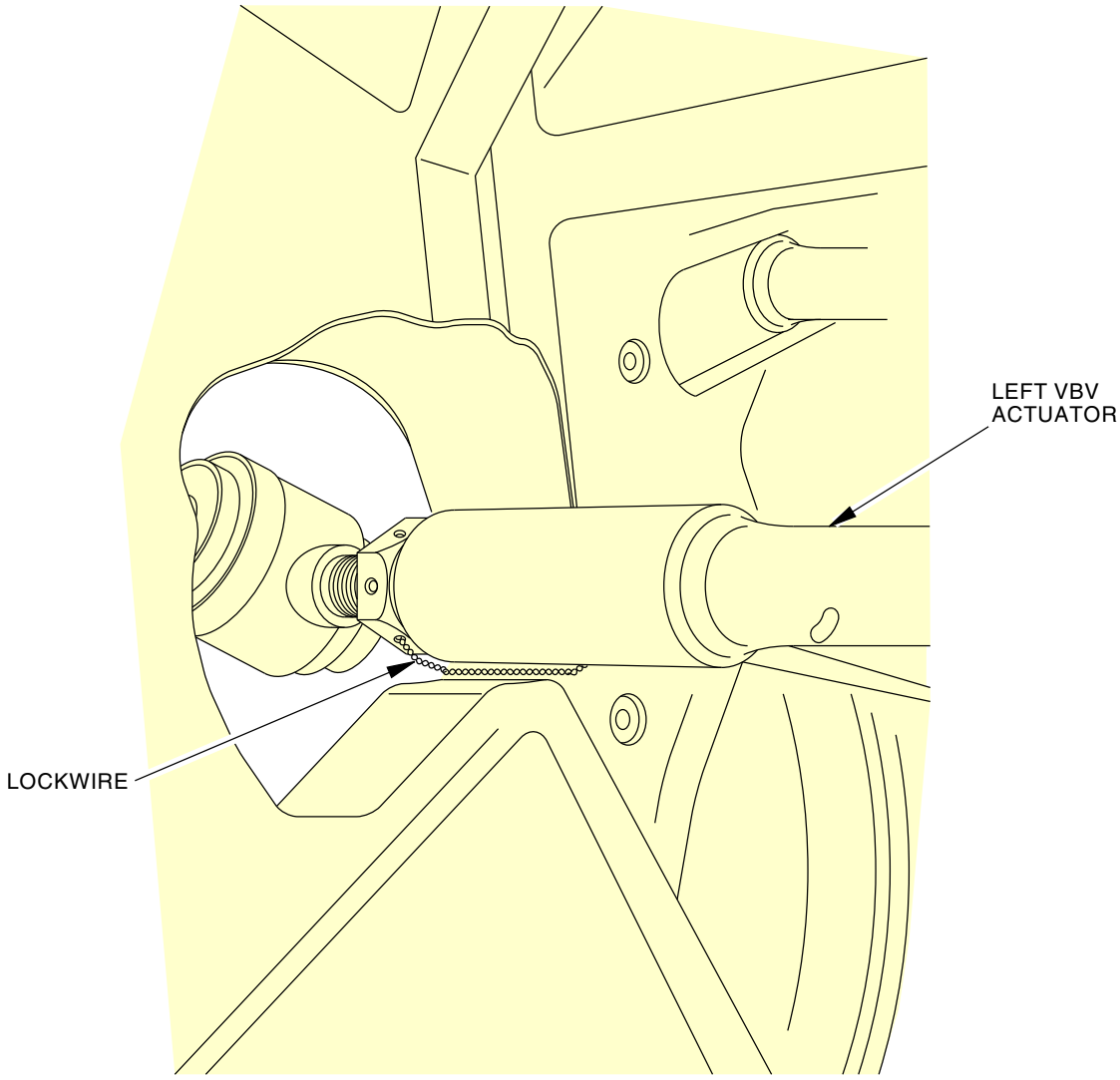
Left VBV Actuator Installation
Figure 403/75-32-01-990-803-H01 (Sheet 1 of 4)



Left VBV Actuator Installation
Figure 403/75-32-01-990-803-H01 (Sheet 2 of 4)



Left VBV Actuator Installation
Figure 403/75-32-01-990-803-H01 (Sheet 3 of 4)



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Left VBV Actuator Installation
Figure 403/75-32-01-990-803-H01 (Sheet 4 of 4)

TASK 75-32-01-400-801-H01

3. Left Variable Bypass Valve (VBV) Actuator Installation

(Figure 401, Figure 402 and Figure 403)

A. General

(1) This task provides the installation instructions for the left variable bypass valve actuator (referred to as the left VBV actuator).

(2) You must do the tests that are listed in the power plant test reference table after you install the left VBV actuator.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-4	Actuator - Hydraulic Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-769	Set - Pin, Control Alternator and VBV Actuator Guide Part #: 9C1163G02 Supplier: 06083
SPL-2103	Hand Pump - Hydraulic, Portable Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-7880	Set - Adapter, VSV/VBV Part #: 9C1393G01 Supplier: 06083
STD-201	Container - Fuel Resistant, 5 U.S.-Gal (19 l)
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
44	Preformed packing	73-11-51-19-090	ARO ALL
48	Left VBV actuator	Not Specified	

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
51	Preformed packing	73-11-51-19-095	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

H. Left VBV Actuator Installation

SUBTASK 75-32-01-420-001-H01

(1) Remove the protective covers from all tube-hoses, tubes, fittings, and openings.

SUBTASK 75-32-01-420-002-H01

(2) Remove the protective cover from the left VBV actuator shaft [63].

SUBTASK 75-32-01-420-003-H01

CAUTION

DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(3) Make sure that the nut on the left VBV actuator shaft [63] is on the same side as the pressure fittings of the left VBV actuator [48].

SUBTASK 75-32-01-420-004-H01

CAUTION

DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(4) Install the left VBV actuator [48] to the fan hub frame.

(a) Put one guide pin from the control alternator and VBV actuator guide pin set, SPL-769 in the upper guide pin hole of the left VBV actuator [48].

NOTE: The guide pin is a support device to hold the actuator for maintenance.

(b) Install the guide pin and the left VBV actuator [48] to the fan hub frame.

(c) Install the extend (Head End) tube-hose [50] and the retract (Rod End) tube-hose [45] to the left VBV actuator [48].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

(d) Extend the left VBV actuator shaft [63] to align the shaft clevis with the access port:

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

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

1) Make sure you connect the VSV/VBV adapter set, SPL-7880 extend (Head End) and retract (Rod End) hoses to the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].
2) Put the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 directional valve selector to the extend (Head End) position.
3) Move the left VBV actuator shaft [63] to the extend position.
4) Release the hydraulic pressure from the left VBV actuator [48].

CAUTION MAKE SURE THE PIVOT SLEEVE IS SEATED CORRECTLY IN THE ACTUATOR SHAFT CLEVIS BEFORE YOU TIGHTEN THE BOLT. IF THE PIVOT SLEEVE IS NOT SEATED CORRECTLY YOU CAN DAMAGE THE COMPONENTS AND THE ENGINE.

CAUTION DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(e) Install the pivot sleeve [62] and the bolt [61] to the left VBV actuator shaft [63] clevis and the VBV actuator adjusting rod [64].

NOTE: The nut on the left VBV actuator shaft clevis is to be toward the engine centerline.

1) Make sure that the pivot sleeve [62] is seated correctly in the VBV actuator shaft [63] clevis.
2) Tighten the bolt [61] to 110-125 pound-inches (12.4-14.1 Newton-meters).

(f) Retract the left VBV actuator [48] until you make contact with the fan hub frame as follows:

1) Put the hydraulic hand pump, SPL-2103 selector to the retract (Rod End) position.
2) Move the left VBV actuator shaft [63] to the retract position.
3) Release the hydraulic pressure from the left VBV actuator [48].

(g) Remove the extend (Head End) tube-hose [50] and the retract (Rod End) tube-hose [45] from the left VBV actuator [48].

NOTE: The extend and retract tube hoses are removed to gain access to tighten the bolts for the left VBV actuator.

(h) Install the four bolts [47] to the left VBV actuator [48] and fan hub frame.

1) Tighten the bolts [47] to 380-420 pound-inches (42.9-47.5 Newton-meters).

(i) Remove the control alternator and VBV actuator guide pin set, SPL-769 from the left VBV actuator [48] and the fan hub frame.

SUBTASK 75-32-01-420-005-H01

(5) Install the extend (Head End) tube-hose [50] and the retract (Rod End) tube-hose [45].

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

(a) Lubricate the two new preformed packings [51] and the preformed packings [44] with clean engine oil, D00552 [C02-019].

(b) Install the preformed packings [51] and the preformed packings [44] to the extend (Head End) tube-hose [50] and the retract (Rod End) tube-hose [45].

(c) Connect the extend (Head End) tube-hose [50] and the retract (Rod End) tube-hose [45] to the left VBV actuator [48].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

SUBTASK 75-32-01-420-006-H01

(6) Install the extend (Head End) drain can [42] and the retract (Rod End) drain can [43]:

(a) Move the extend (Head End) drain can [42] and the retract (Rod End) drain can [43] against the left VBV actuator [48].

(b) Install the four bolts [41] that attach the extend (Head End) drain can [42] and the retract (Rod End) drain can [43] to the left VBV actuator [48].

1) Tighten the bolts [41] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-32-01-420-007-H01

(7) Connect the drain tube-hose [46] to the extend (Head End) drain can [42] and the retract (Rod End) drain can [43].

(a) Tighten the drain tube-hose [46] with the triple torque method as follows:

1) Tighten the B-nut connection to 262-308 pound-inches (30-35 Newton-meters).

2) Loosen the B-nut of the drain tube-hose and tighten it again to 262-308 pound-inches (30-35 Newton-meters).

3) Apply the specified torque again to make sure the torque of the B-nut of the oil tube-hose is 262-308 pound-inches (30-35 Newton-meters).

SUBTASK 75-32-01-420-008-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(8) Use the teflon-jawed pliers, STD-664 to connect the electrical connector [49] to the left VBV actuator [48] (TASK 70-00-01-400-807-H01).

(a) Remove the protective covers from the electrical receptacle of the left VBV actuator [48] and the electrical connector [49]

(b) Connect the electrical connector [49] to the left VBV actuator [48].

SUBTASK 75-32-01-080-002-H01

(9) Disconnect the VSV/VBV adapter set, SPL-7880 extend (Head End) and retract (Rod End) hoses:

(a) Put the 5 U.S.-gal (19 l) fuel resistant container, STD-201 below the VBV retract fitting [6] and the VBV extend fitting [7].

(b) Disconnect the VSV/VBV adapter set, SPL-7880 extend (Head End) hose from the VBV extend (Head End) fuel tube [4].

(c) Disconnect the VSV/VBV adapter set, SPL-7880 retract (Rod End) hose from the VBV retract (Rod End) fuel tube [5].

(d) Permit the fuel to drain into the container.

(e) Remove the protective caps on the VBV retract fitting [6] and VBV extend fitting [7].

(f) Connect the VBV extend (Head End) fuel tube [4] to the VBV extend fitting [7].

1) Tighten the tube fitting (TASK 70-51-00-910-801-H01).

(g) Connect the VBV retract (Rod End) fuel tube [5] to the VBV retract fitting [6].

1) Tighten the tube fitting (TASK 70-51-00-910-801-H01).

(h) Put the clamps [2] in its position on the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].

(i) Install the bolts [3] that attach the clamps [2] to the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].

1) Tighten the bolts [3] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 75-32-01-420-010-H01

(10) Install the cover plate [34] to the inner cowl support of the fan hub frame (Figure 403).

CAUTION MAKE SURE THAT SAFETY LOCKWIRE IS TIGHTENED AND CORRECTLY INSTALLED. LOOSE SAFETY WIRE CAN LEAD TO PISTON ROTATION AND EXTENSION. VBV DISAGREEMENT FAULTS CAN OCCUR.

(a) Apply the Acheson GP460 compound, D50043 [C02-058] to the threads and friction surfaces of the four bolts [33].

(b) Attach the cover plate [34] to the inner cowl support with four bolts [33].

(c) Tighten the bolts [33] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 75-32-01-410-001-H01

(11) Install the blankoff panel [32] (position 7) on the inner cowl support.

(a) Apply the Acheson GP460 compound, D50043 [C02-058] to the threads and friction surfaces of the four captive screws [31] of the blankoff panel [32].

(b) Install the blankoff panel [32] with the four captive screws [31] to the inner cowl support.

(c) Tighten the captive screws [31] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-32-01-410-003-H01

(12) Install the saddle clamps [22] that attach the hose-tube [23] to the engine.

(a) Install the four bolts [21].

(b) Tighten the bolts [21] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 75-32-01-080-004-H01

(13) Disconnect the VSV/VBV adapter set, SPL-7880 hoses from the hydraulic hand pump, SPL-2103 or the hydraulic actuator, SPL-4.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 75-32-01-869-002-H01

(1) Do these steps to put the fuel control valve and the spar valve to the serviceable condition:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

(b) For the applicable engine, remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

SUBTASK 75-32-01-410-002-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do these tasks in sequence to safely close the left thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-32-01-860-005-H01

(3) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

J. Left VBV Actuator Installation Test

SUBTASK 75-32-01-710-001-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

RIGHT VARIABLE BYPASS VALVE (VBV) ACTUATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the right variable bypass valve actuator.

(2) An installation of the right variable bypass valve actuator.

TASK 75-32-02-000-801-H01

2. Right Variable Bypass Valve (VBV) Actuator Removal

(Figure 401, Figure 402 and Figure 403)

A. General

(1) This task is the removal procedure for the right variable bypass valve actuator (referred to as the right VBV actuator).

(2) The right VBV actuator is at the 4:00 o'clock position on the engine core.

(3) You must open the right thrust reverser to get access to the right VBV actuator.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-4	Actuator - Hydraulic Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-2103	Hand Pump - Hydraulic, Portable Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-7880	Set - Adapter, VSV/VBV Part #: 9C1393G01 Supplier: 06083
STD-201	Container - Fuel Resistant, 5 U.S.-Gal (19 l)
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the Removal

SUBTASK 75-32-02-860-004-H01

(1) Open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

SUBTASK 75-32-02-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 75-32-02-869-001-H01

(3) Do these steps to make sure the fuel control valve and the spar valve stay in the closed position:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

1) Install a DO-NOT-OPERATE tag on the FUEL CONTROL switch.

(b) Push the STAT switch on the display select panel of the glareshield (P55).

1) Make sure you do not see the applicable ENG FUEL VALVE L(R) or FUEL SPAR VALVE L(R) status messages.

(c) For the applicable engines, open these circuit breakers and install safety tags:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

G. Right VBV Actuator Removal

SUBTASK 75-32-02-480-001-H01

(1) Install the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 as follows:

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Disconnect the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5] at the HMU [1]:

1) Put the 5 U.S.-gal (19 l) fuel resistant container, STD-201 below the VBV retract fitting [6] and the VBV extend fitting [7].
2) Disconnect the VBV extend (Head End) fuel tube [4] from the VBV extend fitting [7].
3) Disconnect the VBV retract (Rod End) fuel tube [5] from VBV retract fitting [6].
4) Permit the fuel to drain into the container.
5) Remove the bolts [3] from the clamps [2] at the forward of the HMU [1] on the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].
6) Move the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5] away from the HMU [1].
7) Install protective caps on the VBV retract fitting [6] and the VBV extend fitting [7].

WARNING DO NOT GET MIL-L-1010 OIL ON YOUR SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE OIL THROUGH YOUR SKIN.

(b) Connect the VSV/VBV adapter set, SPL-7880 extend and retract supply hoses to the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].

SUBTASK 75-32-02-860-002-H01

(2) Move the VBV system to the fully open position.

(a) Put the hydraulic hand pump, SPL-2103 or the hydraulic actuator, SPL-4 directional valve selector to the retract (Rod End) position.

1) Move the right VBV actuator [32] to the fully retracted position.
2) Release the hydraulic pressure from the right VBV actuator [32].

SUBTASK 75-32-02-010-006-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE PLIERS THAT HAVE TEFLON JAWS TO LOOSEN THE ELECTRICAL CONNECTOR. DO NOT USE PLIERS THAT HAVE METAL JAWS. DAMAGE TO THE ELECTRICAL CONNECTOR CAN OCCUR.

(3) Use teflon-jawed pliers, STD-664 to disconnect the W721 harness [22] from the LPTACC valve [24].

(a) Disconnect the electrical connector [21] and the electrical connector [23] from the LPTACC valve [24].

(b) Install protective covers to the electrical receptacles of the LPTACC valve [24], electrical connector [21] and electrical connector [23].

SUBTASK 75-32-02-010-007-H01

(4) Disconnect the fuel hose [39] and the fuel hose [40] from the bracket [36].

(a) Remove the bolt [31] that attaches loop clamp [33] to the bracket [36].

(b) Remove the bolt [37] that attaches loop clamp [38] to the bracket [36].

SUBTASK 75-32-02-010-002-H01

(5) Remove the blankoff panel [54] (position 3) from the inner cowl support at the fan hub frame:

(a) Loosen the captive screws [53] from the blankoff panel [54] to the inner cowl support.

(b) Remove the blankoff panel [54].

SUBTASK 75-32-02-010-003-H01

(6) Remove the cover plate [52] from the inner cowl support at the fan hub frame:

(a) Remove the four bolts [51] from the cover plate [52] at the inner cowl support.

(b) Remove the cover plate [52] from the inner cowl support.

SUBTASK 75-32-02-010-004-H01

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(7) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [62] from the right VBV actuator [32] (TASK 70-00-01-400-807-H01):

(a) Disconnect the electrical connector [62] from the right VBV actuator [32].

(b) Install the protective covers to the electrical receptacle of the right VBV actuator [32] and the electrical connector [62].

SUBTASK 75-32-02-020-001-H01

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(8) Remove the extend (Head End) drain can [67] and the retract (Rod End) drain can [69] from the right VBV actuator [32].

(a) Remove the drain tube-hose [66] from the extend (Head End) drain can [67] and the retract (Rod End) drain can [69].

(b) Remove the two bolts [68] at the extend (Head End) drain can [67] of the right VBV actuator [32].

(c) Move the extend (Head End) drain can [67] away from the right VBV actuator [32].

(d) Remove the two bolts [68] at the retract (Rod End) drain can [69] of the right VBV actuator [32].

(e) Move the retract (Rod End) drain can [69] away from the right VBV actuator [32].

SUBTASK 75-32-02-020-002-H01

(9) Remove the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71] from the right VBV actuator [32].

(a) Remove and discard the preformed packings [70] and the preformed packings [64] from the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71].

SUBTASK 75-32-02-020-003-H01

(10) Remove the right VBV actuator [32] from the fan hub frame.

(a) Remove the two bolts [65] from the left side of the right VBV actuator [32] at the fan hub frame.

(b) Install the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71] to the right VBV actuator [32].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

(c) Remove the two bolts [65] from the right side of the right VBV actuator [32] at the fan hub frame.

(d) Move the right VBV actuator [32] rearward with the hydraulic hand pump, SPL-2103:

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING DO NOT LET OIL STAY ON YOUR SKIN. THE SYNTHETIC OIL CONTAINS ADDITIVES THAT CAN BE POISONOUS IF THEY ARE ABSORBED THROUGH THE SKIN. CLEAN AWAY ALL OIL THAT GETS ON THE SKIN.

1) Make sure that you connect the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 retract and extend supply hoses to the VBV extend (Head End) fuel tube [4] and VBV retract (Rod End) fuel tube [5].

2) Put the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 directional valve selector to the extend (Head End) position.

3) Extend the right VBV actuator shaft [83] to push the actuator away from the fan hub frame.

4) When you see the right VBV actuator [32] moves rearward, stop and hold the right VBV actuator [32] with your hands.

5) Align the bolt [81] with the access port in the inner cowl support.

6) Release the pressure from the right VBV actuator [32].

SUBTASK 75-32-02-020-004-H01

CAUTION

MAKE SURE THAT YOU DO NOT REMOVE THE BOLT FROM THE BOLT AND LOCKING GEAR ASSEMBLY. IF YOU REMOVE THE BOLT FROM THE LOCKING GEAR ASSEMBLY, THE LOCKING GEAR ASSEMBLY CAN FALL INTO THE ENGINE AND CAUSE DAMAGE TO EQUIPMENT.

CAUTION

DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(11) Hold the right VBV actuator [32] and remove the bolt [81] and the locking gear [82] from the right VBV actuator shaft [83] clevis and the VBV actuator adjusting rod [84].

NOTE: The bolt will be loose in the locking gear when it is free from the nut on the actuator shaft

SUBTASK 75-32-02-020-005-H01

(12) Remove the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71] from the right VBV actuator [32].

SUBTASK 75-32-02-020-006-H01

CAUTION

DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(13) Remove the right VBV actuator [32].

SUBTASK 75-32-02-480-002-H01

CAUTION

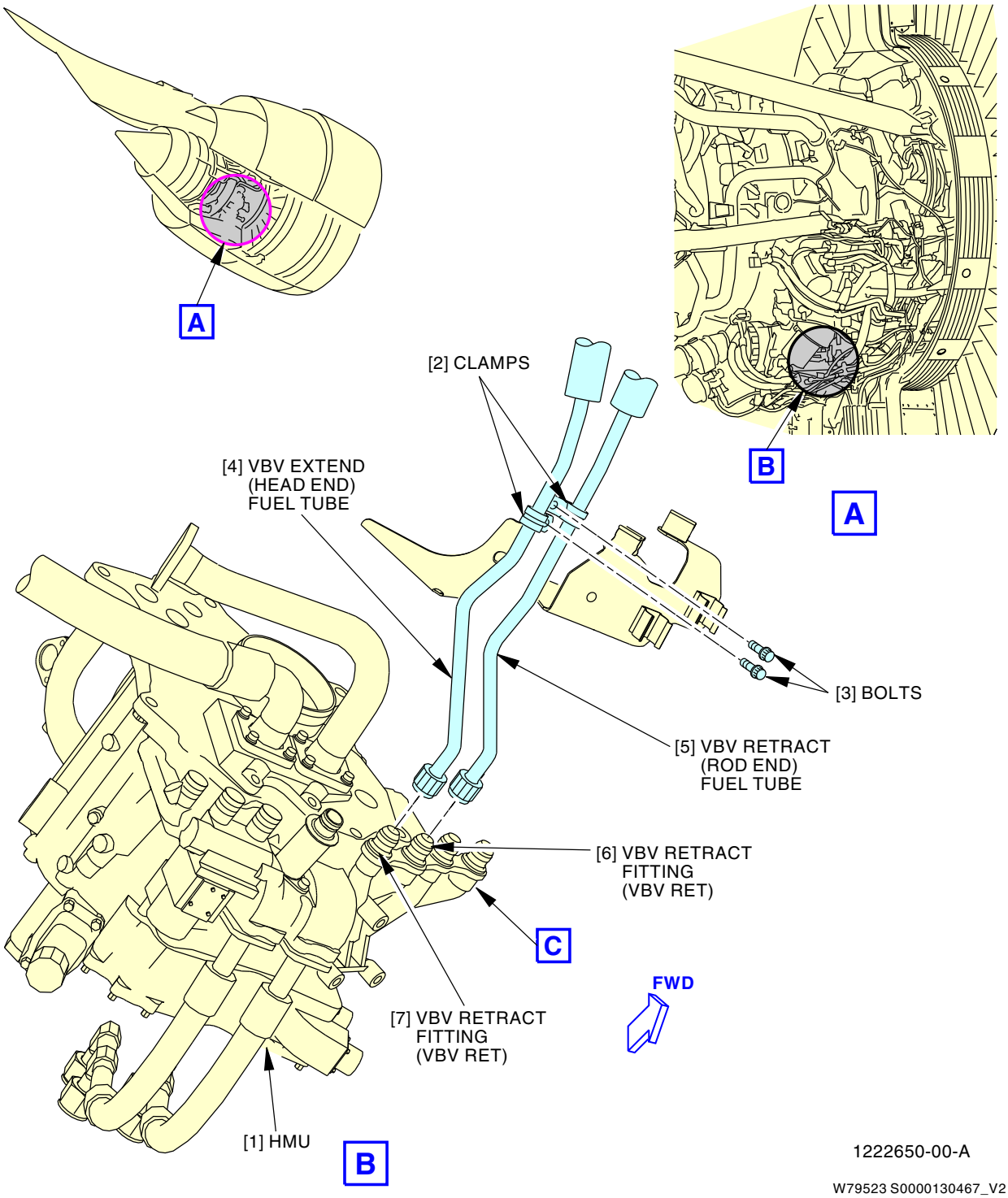
DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(14) Install a protective cover over the right VBV actuator shaft [83].

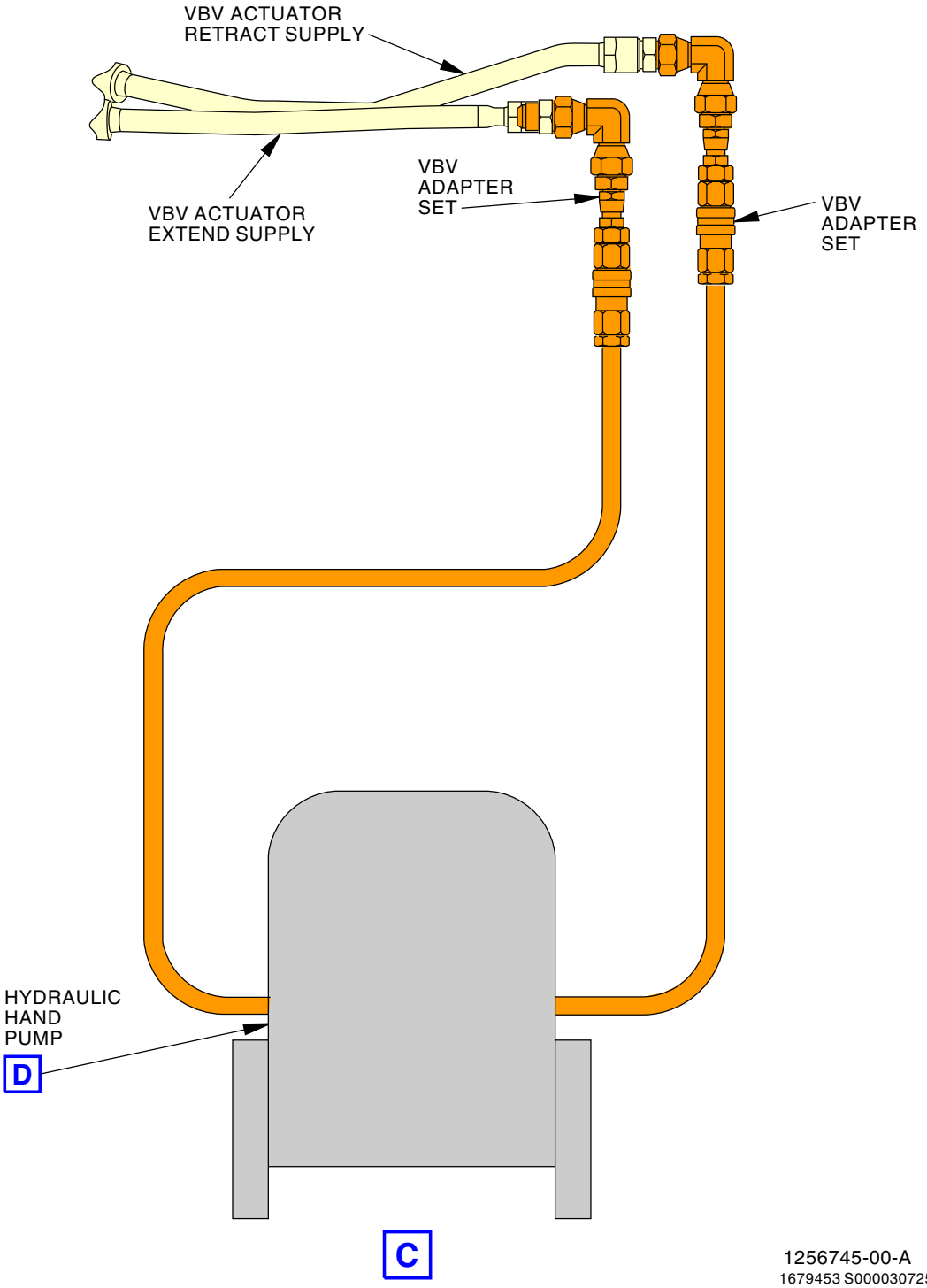
SUBTASK 75-32-02-480-003-H01

(15) Install protective covers on all tube-hoses, fittings, and openings

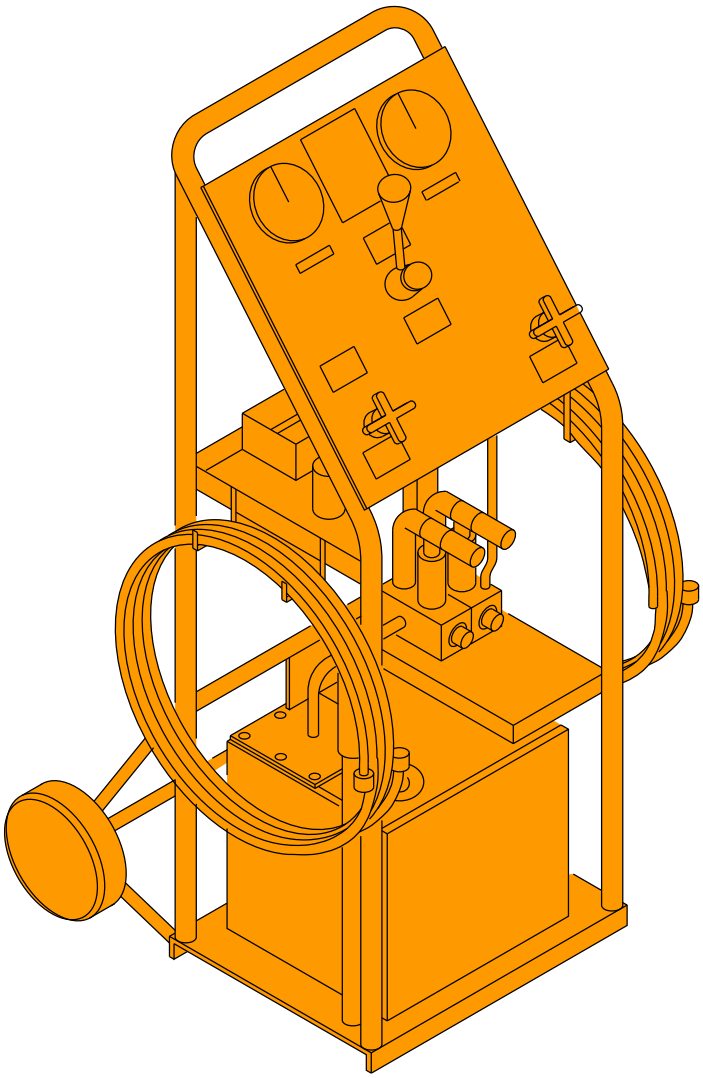
END OF TASK



Hydraulic Hand Pump Installation
Figure 401/75-32-02-990-804-H00 (Sheet 1 of 3)



Hydraulic Hand Pump Installation
Figure 401/75-32-02-990-804-H00 (Sheet 2 of 3)

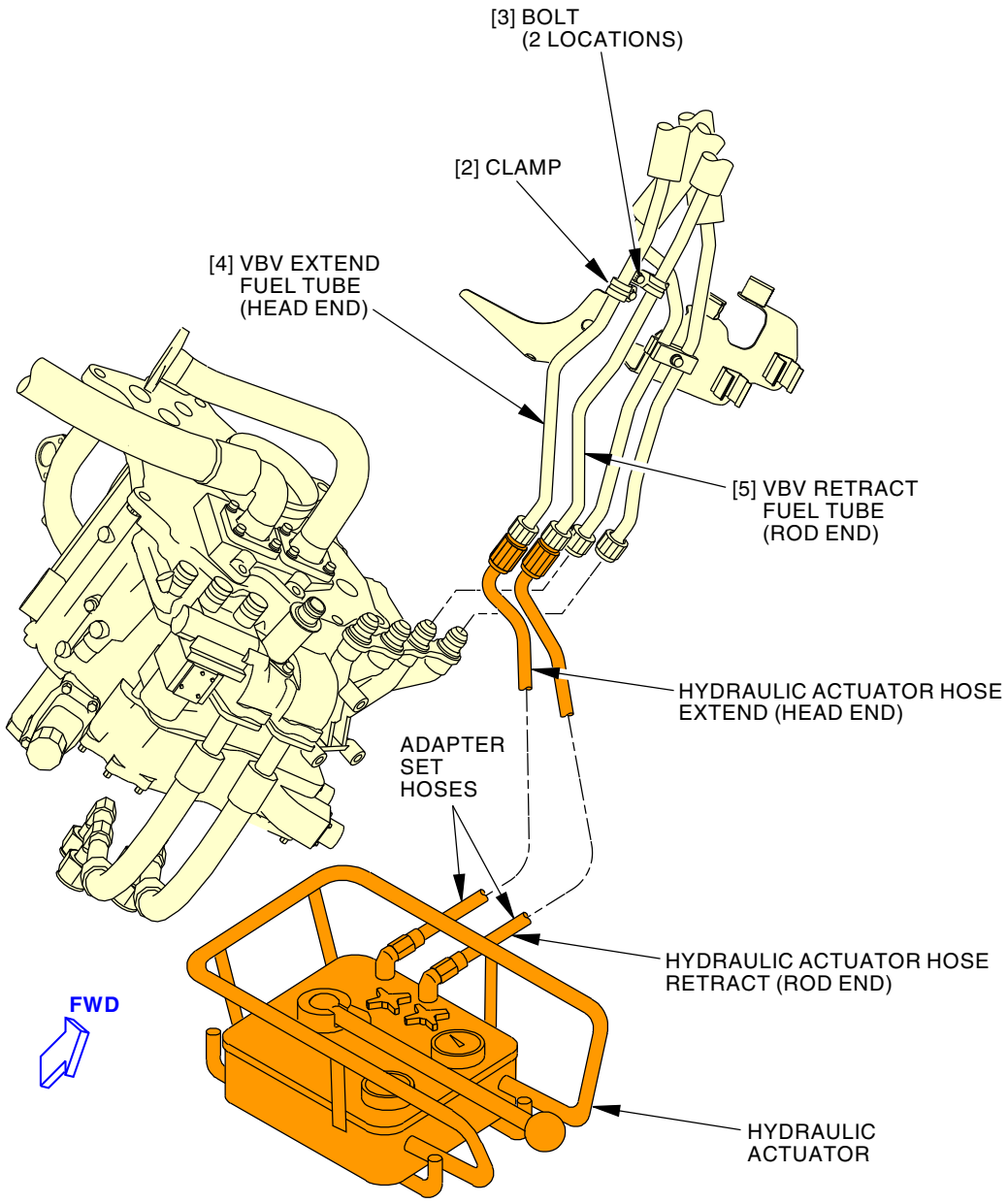


HYDRAULIC HAND PUMP

D

1679592 S0000307252_V3

Hydraulic Hand Pump Installation
Figure 401/75-32-02-990-804-H00 (Sheet 3 of 3)



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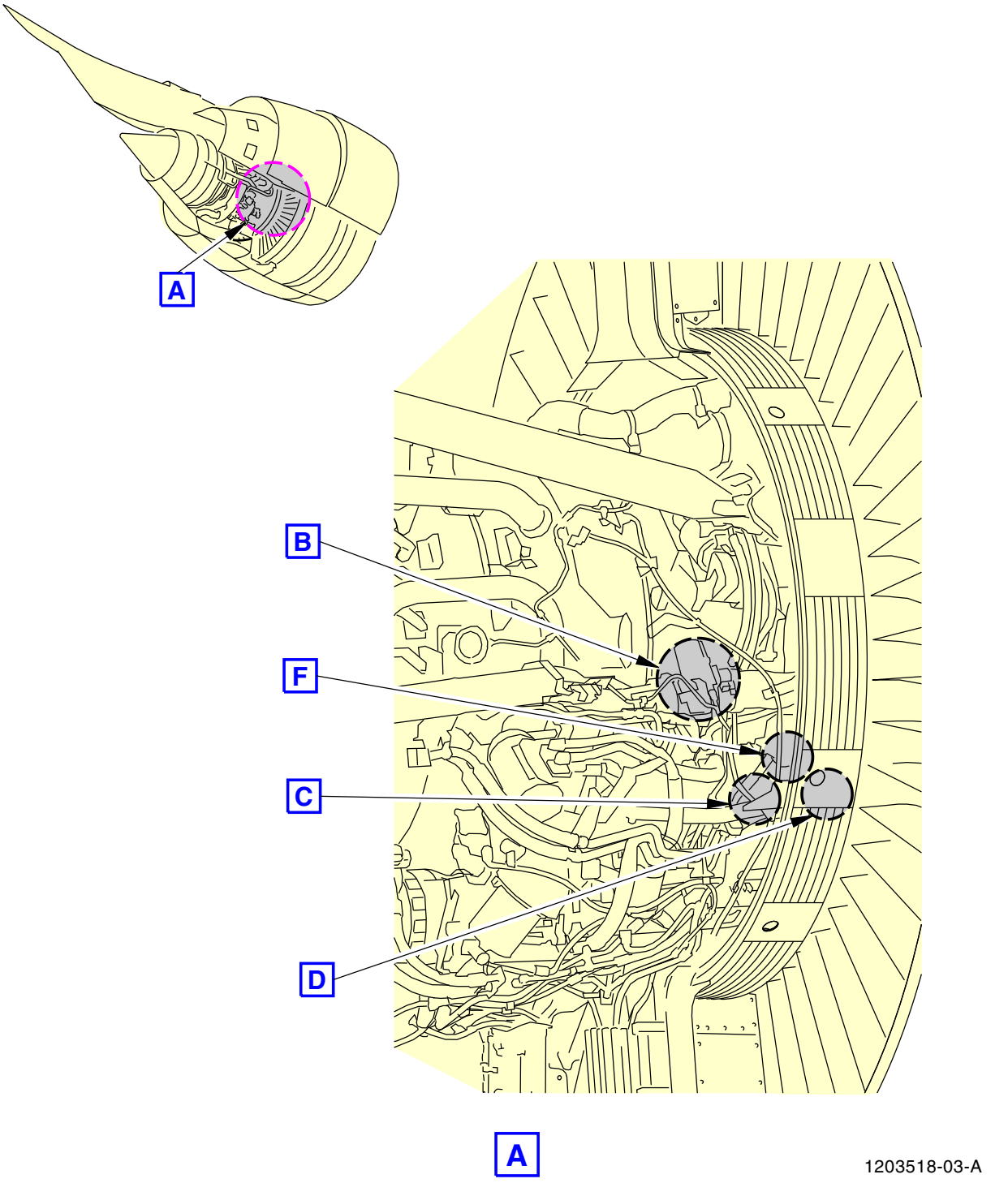
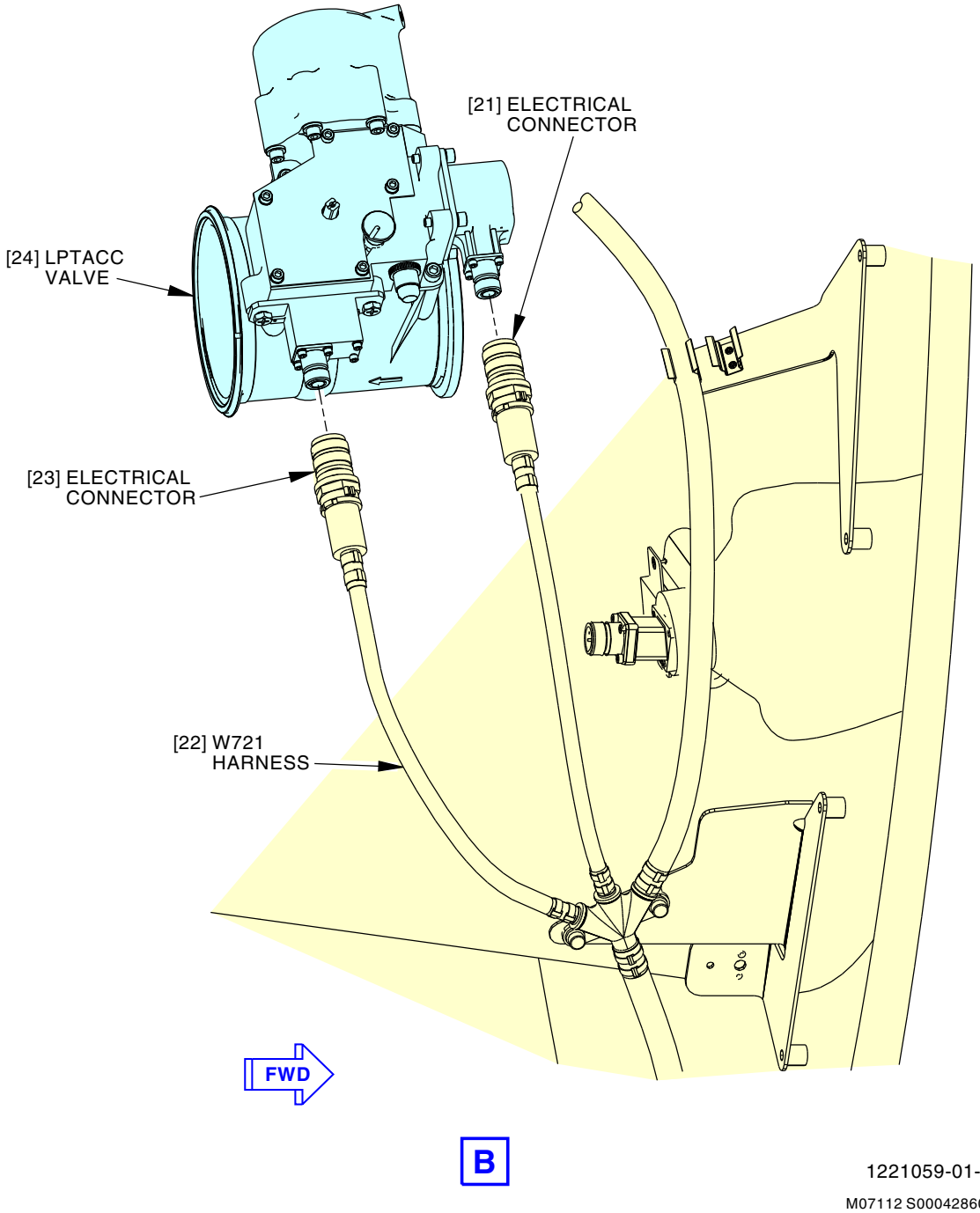
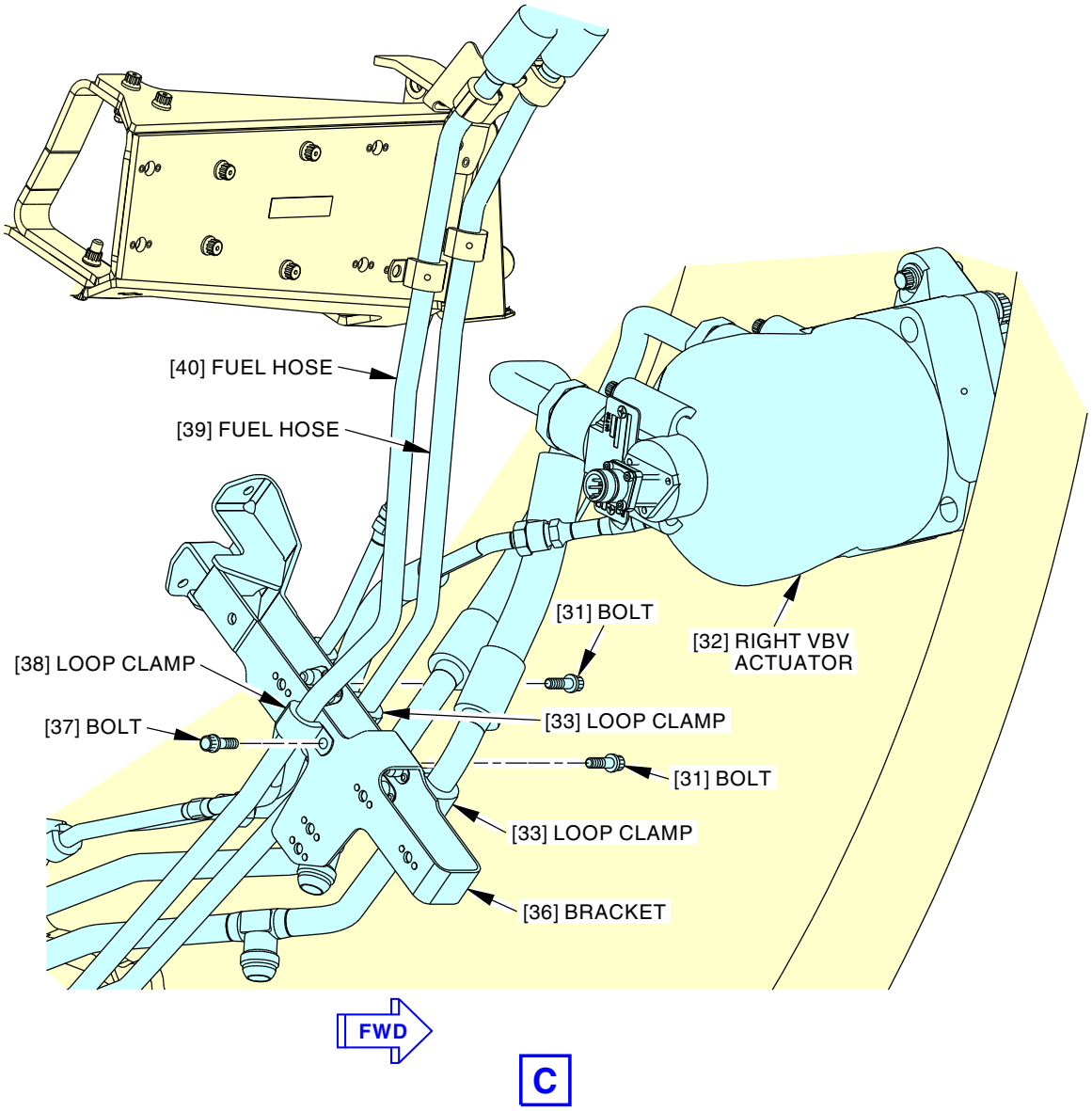
Hydraulic Actuator Installation
Figure 402/75-32-02-990-801-H01



Right VBV Actuator Installation
Figure 403/75-32-02-990-803-H01 (Sheet 1 of 7)



Right VBV Actuator Installation
Figure 403/75-32-02-990-803-H01 (Sheet 2 of 7)



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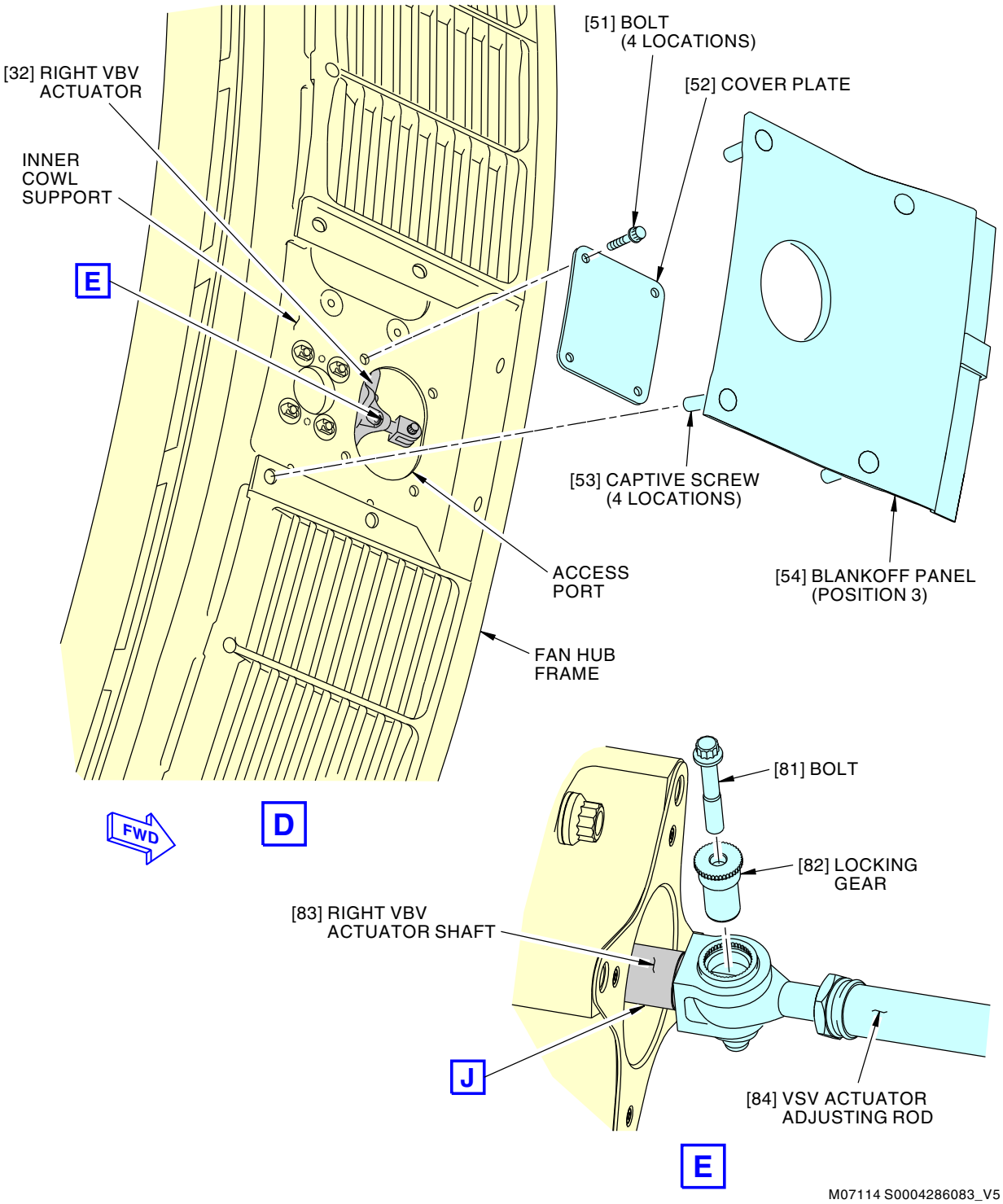
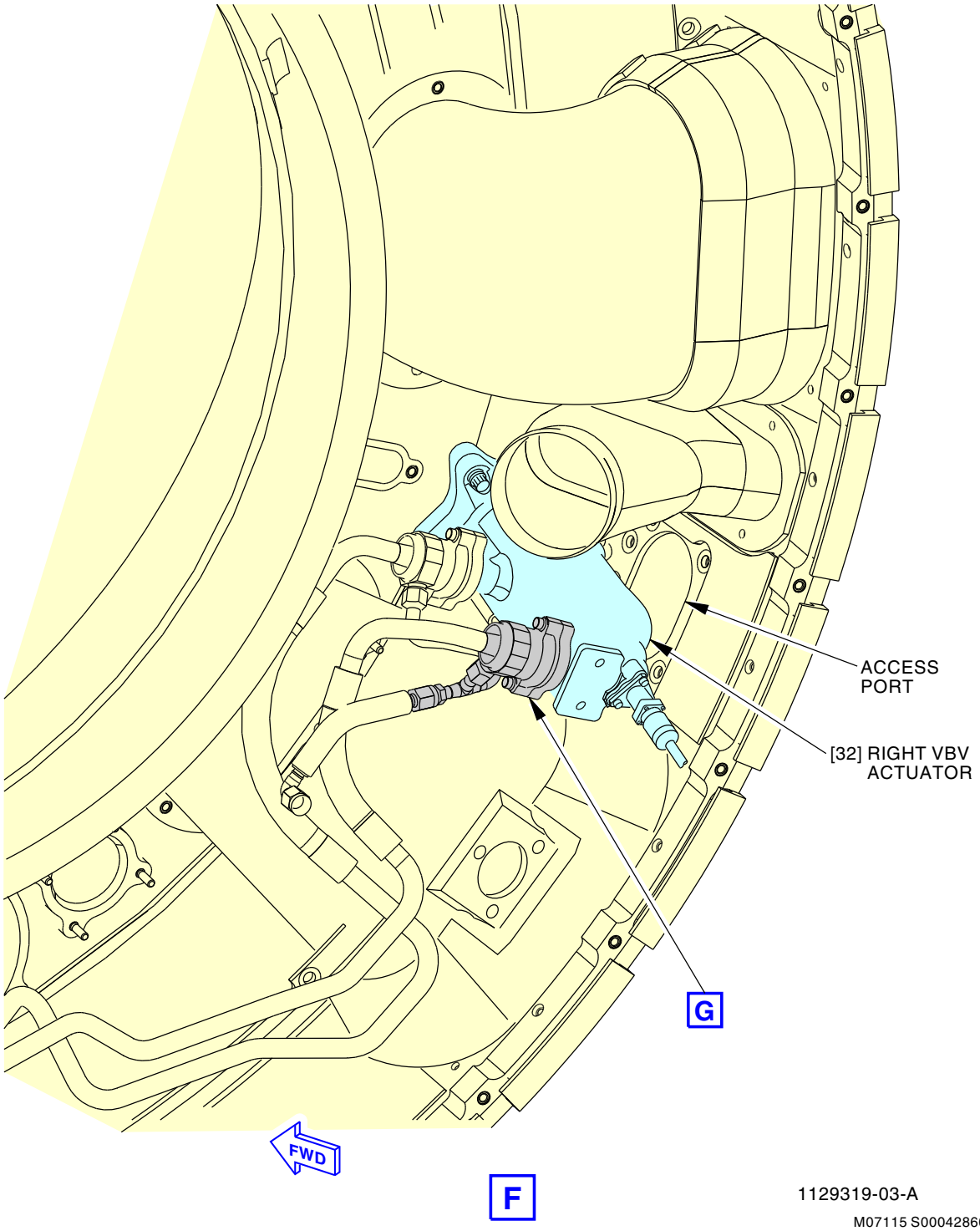
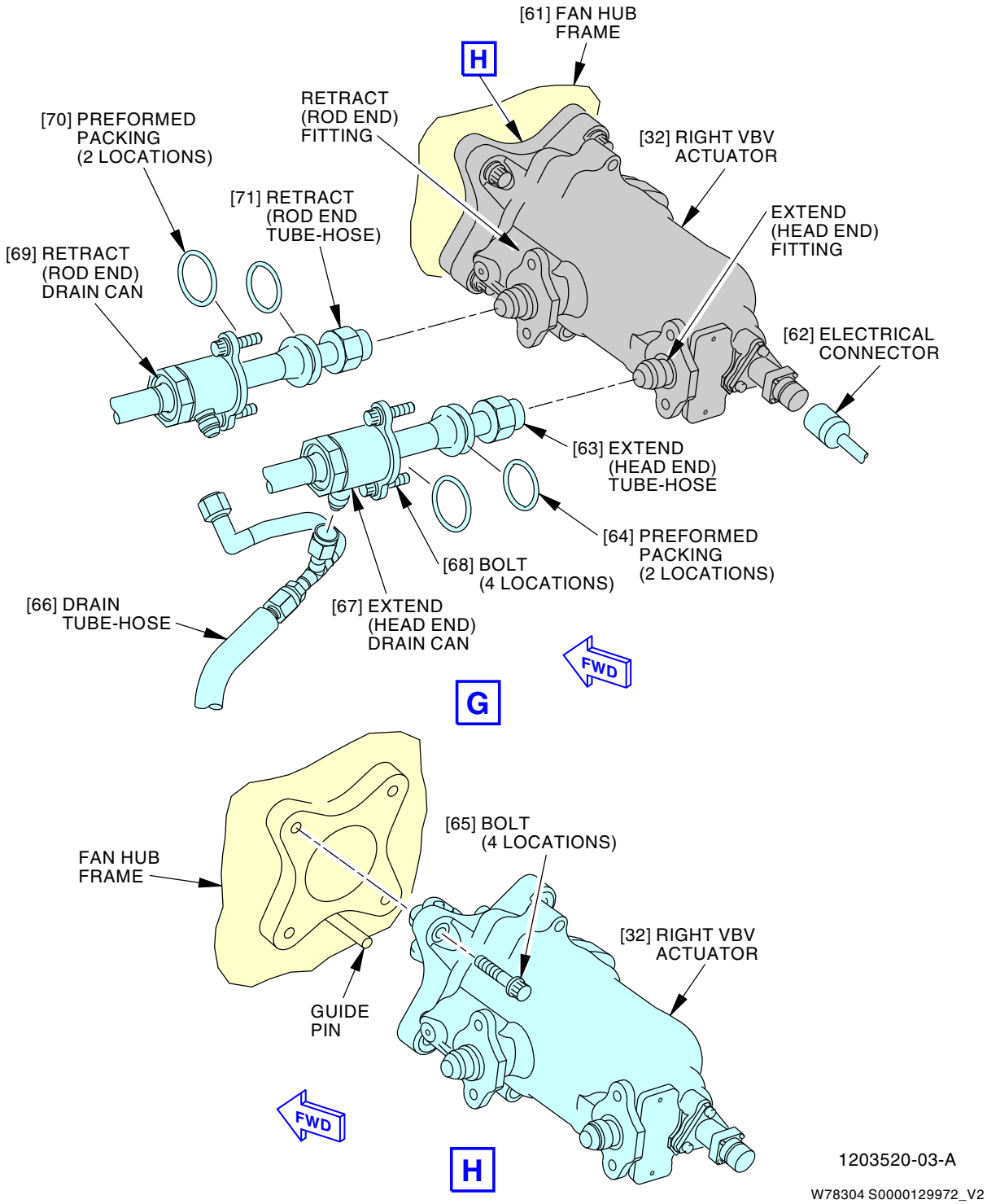
Right VBV Actuator Installation
Figure 403/75-32-02-990-803-H01 (Sheet 3 of 7)



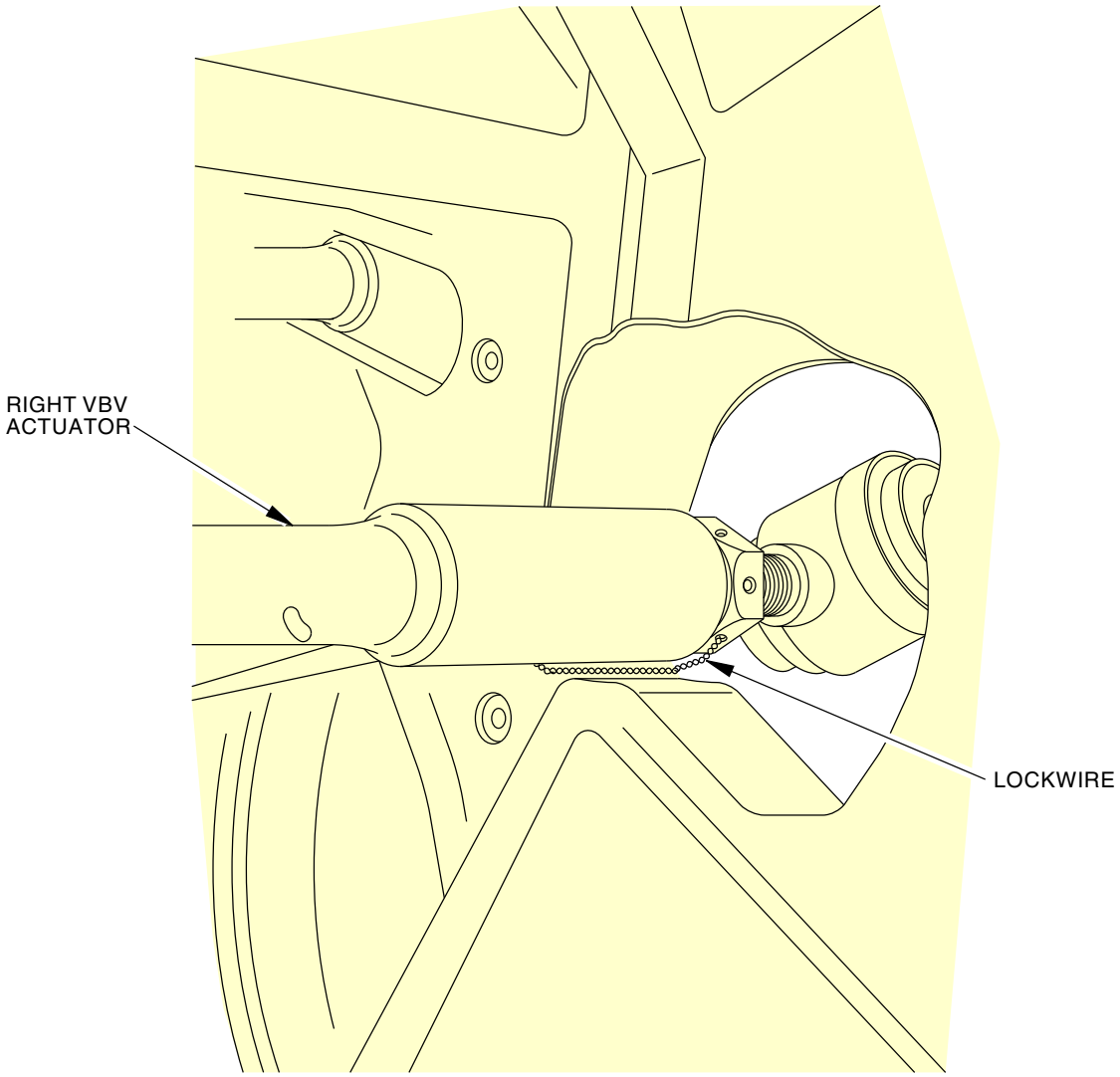
Right VBV Actuator Installation
Figure 403/75-32-02-990-803-H01 (Sheet 4 of 7)



Right VBV Actuator Installation
Figure 403/75-32-02-990-803-H01 (Sheet 5 of 7)



Right VBV Actuator Installation
Figure 403/75-32-02-990-803-H01 (Sheet 6 of 7)



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2525969 S0000595434_V1

Right VBV Actuator Installation
Figure 403/75-32-02-990-803-H01 (Sheet 7 of 7)

TASK 75-32-02-400-801-H01

3. Right Variable Bypass Valve (VBV) Actuator Installation

(Figure 401, Figure 402 and Figure 403)

A. General

(1) This task provides the installation instructions for the right variable bypass valve actuator (referred to as the right VBV actuator).

(2) You must do the tests that are listed in the power plant test reference table after you install the right VBV actuator.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-4	Actuator - Hydraulic Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-769	Set - Pin, Control Alternator and VBV Actuator Guide Part #: 9C1163G02 Supplier: 06083
SPL-2103	Hand Pump - Hydraulic, Portable Part #: 9461M39P02 Supplier: 06083 Opt Part #: 9C1256G01 Supplier: 06083
SPL-7880	Set - Adapter, VSV/VBV Part #: 9C1393G01 Supplier: 06083
STD-201	Container - Fuel Resistant, 5 U.S.-Gal (19 l)
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
32	Right VBV actuator	Not Specified	
64	Preformed packing	73-11-51-19-095	ARO ALL
70	Preformed packing	73-11-51-19-090	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

H. Right VBV Actuator Installation

SUBTASK 75-32-02-420-001-H01

(1) Remove the protective covers from all tube-hoses, tubes, fittings, and openings.

SUBTASK 75-32-02-420-002-H01

(2) Remove the protective cover from the right VBV actuator shaft [83].

SUBTASK 75-32-02-420-003-H01

CAUTION

DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(3) Make sure that the nut on the right VBV actuator shaft [83] is on the same side as the pressure fittings of the right VBV actuator [32].

SUBTASK 75-32-02-420-004-H01

CAUTION

DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(4) Install the right VBV actuator [32] to the fan hub frame :

(a) Put one guide pin from the control alternator and VBV actuator guide pin set, SPL-769 in the upper guide pin hole of the right VBV actuator [32].

NOTE: The guide pin is a support device to hold the actuator for maintenance. Remove the guide pin if you have interference between the actuator and the air duct.

(b) Install the guide pin and the right VBV actuator [32] to the fan hub frame.

(c) Install the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71] to the right VBV actuator [32].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

(d) Extend the right VBV actuator shaft [83] to align the shaft clevis with the access port.

WARNING

DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(WARNING PRECEDES)

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

1) Make sure that you connect VSV/VBV adapter set, SPL-7880 extend (Head End) and retract (Rod End) hoses to the VBV extend (Head End) fuel tube [4] and VBV retract (Rod End) fuel tube [5].
2) Put the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 directional valve selector to the extend (Head End) position.
3) Move the right VBV actuator shaft [83] to the extend position.
4) Release the hydraulic pressure from the right VBV actuator [32].

CAUTION MAKE SURE THE PIVOT SLEEVE IS SEATED CORRECTLY IN THE ACTUATOR SHAFT CLEVIS BEFORE YOU TIGHTEN THE BOLT. IF THE PIVOT SLEEVE IS NOT SEATED CORRECTLY YOU CAN DAMAGE THE COMPONENTS AND THE ENGINE.

CAUTION DO NOT MAKE ADJUSTMENTS OR CHANGE THE POSITION OF THE VBV ACTUATOR ROD. IF YOU MAKE THE ADJUSTMENT ON THE VBV ACTUATOR ROD, YOU WILL CHANGE THE VBV SYSTEM RIGGING OR CAN CAUSE ENGINE PROBLEMS OR DAMAGE.

(e) Install the locking gear [82] and the bolt [81] to the right VBV actuator shaft [83] clevis and the VBV actuator adjusting rod [84].

NOTE: The nut on the right VBV actuator shaft clevis is to be toward the engine centerline.

1) Make sure the locking gear [82] is seated correctly in the VBV actuator shaft [83] clevis.
2) Tighten the bolt [81] to 110-125 pound-inches (12.4–14.1 Newton-meters).

(f) Retract the right VBV actuator [32] until you make contact with the fan hub frame as follows:

1) Put the hydraulic hand pump, SPL-2103 or hydraulic actuator, SPL-4 directional valve selector to the retract (Rod End) position.
2) Move the right VBV actuator shaft [83] to the retract position.
3) Release the hydraulic pressure from the right VBV actuator [32].

(g) Remove the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71] from the right VBV actuator [32].

NOTE: The extend and retract tube hoses are removed to gain access to tighten the bolts for the right VBV actuator.

(h) Install the four bolts [65] to the right VBV actuator [32] and the fan hub frame.

1) Tighten the bolts [65] to 380-420 pound inches (49.9-47.5 Newton-meters).

(i) Remove the control alternator and VBV actuator guide pin set, SPL-769 guide pin from the right VBV actuator [32].

SUBTASK 75-32-02-420-005-H01

(5) Install the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71].

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

(a) Lubricate the two new preformed packings [70] and the preformed packings [64] with clean engine oil, D00552 [C02-019].

(b) Install the preformed packings [70] and the preformed packings [64] to the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71].

(c) Connect the extend (Head End) tube-hose [63] and the retract (Rod End) tube-hose [71] to the right VBV actuator [32].

1) Tighten the B-nut (TASK 70-51-00-910-801-H01).

SUBTASK 75-32-02-420-006-H01

(6) Install the extend (Head End) drain can [67] and the retract (Rod End) drain can [69]:

(a) Move the extend (Head End) drain can [67] and the retract (Rod End) drain can [69] against the right VBV actuator [32].

(b) Install the four bolts [68] that attach the extend (Head End) drain can [67] and the retract (Rod End) drain can [69] to the right VBV actuator [32].

1) Tighten the bolts [68] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-32-02-420-007-H01

(7) Connect the drain tube-hose [66] to the extend (Head End) drain can [67] and the retract (Rod End) drain can [69].

(a) Tighten the B-nut (TASK 70-51-00-910-801-H01).

SUBTASK 75-32-02-420-008-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(8) Use teflon-jawed pliers, STD-664 to connect the electrical connector [62] to the right VBV actuator [32] (TASK 70-51-00-910-801-H01).

(a) Remove the protective covers from the electrical receptacle of the right VBV actuator [32] and the electrical connector [62].

(b) Connect the electrical connector [62] to the right VBV actuator [32].

SUBTASK 75-32-02-080-004-H01

(9) Disconnect the VSV/VBV adapter set, SPL-7880 extend (Head End) and retract (Rod End) hoses:

(a) Put the 5 U.S.-gal (19 l) fuel resistant container, STD-201 below the VBV retract fitting [6] and the VBV extend fitting [7].

(b) Disconnect the VSV/VBV adapter set, SPL-7880 extend (Head End) hose from the VBV extend (Head End) fuel tube [4].

(c) Disconnect the VSV/VBV adapter set, SPL-7880 retract (Rod End) hose from the VBV retract (Rod End) fuel tube [5].

(d) Permit the fuel to drain into the container.

(e) Remove the protective caps on the VBV retract fitting [6] and the VBV extend fitting [7].

(f) Connect the VBV extend (Head End) fuel tube [4] to the VBV extend fitting [7].

1) Tighten the tube fitting (TASK 70-51-00-910-801-H01).

(g) Connect the VBV retract (Rod End) fuel tube [5] to the VBV retract fitting [6].

1) Tighten the tube fitting (TASK 70-51-00-910-801-H01).

(h) Put the clamps [2] in its position on the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].

(i) Install the bolts [3] that attach the clamps [2] to the VBV extend (Head End) fuel tube [4] and the VBV retract (Rod End) fuel tube [5].

1) Tighten the bolts [3] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 75-32-02-420-010-H01

(10) Install cover plate [52] to the inner cowl support of the fan hub frame (Figure 403).

CAUTION MAKE SURE THAT SAFETY LOCKWIRE IS TIGHTENED AND CORRECTLY INSTALLED. LOOSE SAFETY WIRE CAN LEAD TO PISTON ROTATION AND EXTENSION. VBV DISAGREEMENT FAULTS CAN OCCUR.

(a) Apply the Acheson GP460 compound, D50043 [C02-058] to the threads and friction surfaces of the four bolts [51].

(b) Attach the cover plate [52] to the inner cowl support with four bolt [51].

1) Tighten the bolt [51] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 75-32-02-410-002-H01

(11) Install the blankoff panel [54] (position 3) to the inner cowl support.

(a) Apply the Acheson GP460 compound, D50043 [C02-058] to the threads and friction surfaces of the four captive screws [53] of the blankoff panel [54].

(b) Install the blankoff panel [54] with the four captive screws [53] to the inner cowl support.

(c) Tighten the captive screws [53] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-32-02-410-007-H01

(12) Attach the fuel hose [39] and the fuel hose [40] to the bracket [36] (Figure 403).

(a) Install the bolt [37] to the loop clamp [38] to attach the fuel hose [40] to the bracket [36]

1) Tighten the bolt [37] to 55-70 pound-inches (6.2-7.9 Newton-meters).

(b) Install the bolt [31] to the loop clamp [33] to attach the fuel hose [39] to the bracket [36].

1) Tighten the bolt [31] to 55-70 pound-inches (6.2-7.9 Newton-meters).

SUBTASK 75-32-02-410-008-H01

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

(CAUTION PRECEDES)

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(13) Use teflon-jawed pliers, STD-664 to connect the W721 harness [22] to the LPTACC valve [24](TASK 70-51-00-910-801-H01):

(a) Remove the protective covers from the electrical receptacles of the LPTACC valve [24], the electrical connector [21] and the electrical connector [23].

(b) Connect the electrical connector [21] to the LPTACC valve [24].

(c) Connect the electrical connector [23] to the LPTACC valve [24].

SUBTASK 75-32-02-090-001-H00

(14) Disconnect the VSV/VBV adapter set, SPL-7880 hoses from the hydraulic hand pump, SPL-2103 or the hydraulic actuator, SPL-4.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 75-32-02-869-002-H01

(1) Do these steps to put the fuel control valve and the spar valve to the serviceable condition:

(a) Make sure that the FUEL CONTROL switch is in the CUTOFF position.

(b) For the applicable engine, remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
A	5	C28001	L ENGINE FUEL SPAR VALVE
A	19	C28002	R ENGINE FUEL SPAR VALVE
B	4	C76601	L ENG FUEL VALVE
B	19	C76600	R ENG FUEL VALVE

SUBTASK 75-32-02-410-001-H02

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 75-32-02-860-005-H01

(3) Remove the safety tags and close these circuit breakers:

Overhead Circuit Breaker Panel, P11

Row	Col	Number	Name
B	1	C80601	L ENG START VALVE
B	3	C80605	L ENG START SW
B	16	C80600	R ENG START VALVE
B	18	C80606	R ENG START SW

J. Right VBV Actuator Installation Test

SUBTASK 75-32-02-710-001-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———