STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-R03
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGIN/STRUT	NOTE			011	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	POWER PLANT		ALL	4000

ZONES	ACCESS PANELS
410 420	413AL 414AR 415AL 416AR 417AL 418AR 423AL 424AR 425AL 426AR 427AL 428AR

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MPD ITEM NUMBER

REMOVE THE POWER PLANT N71-00-02-4A

NOTE: TASK CARDS 24-003-01 AND 36-005-01 TO BE ACCOMPLISHED AT ENGINE CHANGE.

THIS CARD IS NOT A SCHEDULED MAINTENANCE TASK. IT IS A COMPONENT CHANGE CARD AND IT IS PROVIDED FOR OPERATOR CONVENIENCE DURING UNSCHEDULED MAINTENANCE ACTIVITIES. SEE APPENDIX A OF THE 767 MAINTENANCE PLANNING DATA (MPD) DOCUMENT,D622T001, FOR A DESCRIPTION OF THE COMPONENT CHANGE CARDS.

1. General

A. This procedure includes the six tasks that follow:
- Prepare for the Power Plant Removal
- Remove the Power Plant with the Bootstrap Equipment (Recommended)
- Remove the Power Plant with the PT90-E (Optional)
- Install the Power Plant with the Bootstrap Equipment (Recommended)
- Install the Power Plant with the PT90-E (Optional)
- Put the Airplane Back to Its Usual Configuration.

B. The platforms and stands are necessary to get access to the points where you will disconnect specified parts. These points are approximately 13 feet (4 meters) above the ground.

C. The power plant weighs approximately 11,000 pounds when you remove it from the airplane. You must add the weight of the ground support equipment and persons (that you will lift) to the weight of the power plant when you calculate the load.

D. For the removal and installation of the power plant, you must do the steps as follows:

(1) Install the hold-open equipment for the thrust reversers.

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(2) Remove the fan cowl panels.

(3) Remove the core cowl panels.

(a) You can install the hold-open equipment on the fan and core cowl panels as an alternative.

(4) You can do this procedure with the inlet cowl removed or installed. The load distribution will be different with the inlet cowl off. You must make sure you do not exceed the load limits for the forward and aft load cells.

E. The ground, where you will remove and install the power plant, must be very clean. When you operate the power plant, the mass airflow causes the unwanted objects to go into the power plant.

(1) Before you operate the power plant, you must make sure these are free of the unwanted objects.
- the power plant compartment
- the air inlet
- the work area.

F. Before the power plant removal, you must make sure the center of gravity (C.G.) for the airplane stays in the safe limits. You must calculate the weight and balance the airplane.

(1) After you disconnect the fuel and hydraulic lines and the electrical connectors, you can supply electrical power to the airplane to do the maintenance. You must remove electrical power when you connect the lines and the connectors after you install the engine.

2. Prepare for the Power Plant Removal

A. General

(1) During the power plant removal, you must seal all openings with the approved caps. You must seal all the tube ends, ducts and electrical connectors with a cap as quickly as possible. You must use the external caps.

B. Equipment

(1) A71030-32 Fan Cowl Hold-Open Equipment - (40 knots) (optional)

(2) A71032-14 Core Cowl Hold-Open Equipment - (40 knots) (optional)

(3) A78001-31 Thrust Reverser Hold-Open Equipment - (40 knots)

(4) G78005-1 Adapter for the Thrust Reverser Hold Open Rod

(5) G71023-52 Hold Open Equipment - Fan and Core Cowls - (20 knots) (optional)

(6) G24006-1 Support Hook, Power Feeder Wire Bundle

(7) Container - 5-gallon capacity, approved for fuel

(8) Container - 1-gallon capacity, approved for hydraulic fluid

C. References

(1) AMM 07-11-05/201, Jacking for Airplane Support with Engines Removed

(2) AMM 08-21-00/201, Leveling

(3) AMM 20-41-00/201, Static Grounding

(4) AMM 24-22-00/201, Electrical Power - Control

(5) AMM 27-81-00/201, Leading Edge Slat System

(6) AMM 29-11-00/201, Main Hydraulic Systems

(7) AMM 71-11-04/201, Fan Cowl Panels

(8) AMM 71-11-04/401, Fan Cowl Panels

(9) AMM 71-11-06/201, Core Cowl Panels

(10) AMM 71-11-06/401, Core Cowl Panels

(11) AMM 78-31-00/201, Thrust Reverser System

D. Access

(1) Location Zone

411 Left Engine
421 Right Engine

(2) Access Panels

413AL	Fan Cowl Panel, Left Engine
414AR	Fan Cowl Panel, Left Engine
415AL	Fan Reverser, Left Engine
416AR	Fan Reverser, Left Engine
417AL	Core Cowl, Left Engine
418AR	Core Cowl, Left Engine
423AL	Fan Cowl Panel, Right Engine
424AR	Fan Cowl Panel, Right Engine
425AL	Fan Reverser, Right Engine
426AR	Fan Reverser, Right Engine
427AL	Core Cowl, Right Engine
428AR	Core Cowl, Right Engine

E. Prepare the Airplane for the Power Plant Removal

(1) Ground the airplane to an approved ground lug (AMM 20-41-00/201).

(2) Make the airplane level to the zero ± 1/4 degree in the pitch and roll directions (AMM 08-21-00/201).

(3) Install a tail jack if it is necessary (AMM 07-11-05/201).

NOTE: The airplane C.G. will move aft when you remove the engine. If the airplane C.G. is too far aft when you start to remove the engine, the airplane can fall on its tail.

WARNING: DO THE THRUST REVERSER DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(4) Do this procedure: Thrust Reverser Deactivation for Ground Maintenance (AMM 78-31-00/201).

(5) Make sure the forward thrust levers are in the fully aft position and attach the DO-NOT-OPERATE tag.

WARNING: DO NOT KEEP THE FUEL SPAR VALVE OPEN. THE ACCIDENTAL LEAKAGE OF THE FUEL DURING THE ENGINE CHANGE CAN CAUSE INJURY TO PERSONS.

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(6) Make sure the applicable engine and spar valves are closed as follows:

(a) For the left engine, make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:

1) 11D25, ENGINE FUEL CONT VLV & EEC CHAN B RESET L

(b) For the right engine, make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:

1) 11D26, ENGINE FUEL CONT VLV & EEC CHAN B RESET R

(c) For the left engine, make sure this circuit breaker on the main power distribution panel, P6, is closed:

1) 6E1, FUEL VALVES L SPAR

(d) For the right engine, make sure this circuit breaker on the main power distribution panel, P6, is closed:

1) 6E2, FUEL VALVES R SPAR

(e) Move the FUEL CONTROL switch on the control stand to the CUTOFF position.

(f) Make sure the ENG VALVE and SPAR VALVE lights on the control stand are off.

(g) For the left engine, open this circuit breaker on the main power distribution panel, P6, and attach the DO-NOT-CLOSE tag:

1) 6E1, FUEL VALVES L SPAR

(h) For the right engine, open this circuit breaker on the main power distribution panel, P6, and attach the DO-NOT-CLOSE tag:

1) 6E2, FUEL VALVES R SPAR

(i) For the left engine, open this circuit breaker on the overhead circuit breaker panel, P11, and attach the DO-NOT-CLOSE tag:

1) 11D25, ENGINE FUEL CONT VLV & EEC CHAN B RESET L

(j) For the right engine, open this circuit breaker on the overhead circuit breaker panel, P11, and attach the DO-NOT-CLOSE tag:

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1) 11D26, ENGINE FUEL CONT VLV & EEC CHAN B RESET R

(7) Close the supply shutoff valve for the engine driven pump (EDP) as follows:

(a) For the left engine, make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:

1) 11D29, HYDRAULIC L ENG PUMP SUPPLY

(b) For the right engine, make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:

1) 11D30, HYDRAULIC R ENG PUMP SUPPLY

(c) Make sure the fire handle for the applicable engine on the aft pilots' control stand, P8, is in the usual position.

(d) Push the manual override switch below the fire handle.

(e) Pull the fire handle on the aft pilots' control stand, P8, to the FIRE position but do not turn it.

1) Make sure the position indicator for the supply shutoff valve of the EDP moves to the CLOSE position.

(8) Retract the leading edge slats (AMM 27-81-00/201).

(a) Attach the DO-NOT-OPERATE tag on the flap control lever.

(9) Release the pressure from the left or right hydraulic system and reservoir (AMM 29-11-00/201).

(10) Remove the bolts (7, 9, 10) and the skirt fairing (8) from the two sides of the strut (Fig. 401).

(11) If electrical power is necessary for other maintenance, supply electrical power (AMM 24-22-00/201).

F. Prepare for the Power Plant Removal

(1) Remove the core cowl panels or install the hold-open equipment (A71032-14) for the core cowl as follows:

(a) Open the core cowl panels (AMM 71-11-06/201).

(b) If you use the bootstrap equipment (Fig. 402), do as follows:

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1) Install the aft bootstrap components (Fig. 401) as follows:

   a) Put the protection pads on the turbine exhaust sleeve (one on each side).

   b) Remove the bolts (1, 2, 3, 4, 5, 6) from the two sides of the strut.

   c) Install the top and lower aft brackets (12, 13) on the two sides of the strut.

   d) Install the forward bracket (14) on the two sides of the strut.

   e) Install the aft inboard arm (11) on the top and lower aft brackets (12, 13).

   WARNING: INSTALL THE LONGER OUTBOARD ARM ON THE OUTBOARD BRACKETS ONLY. IF YOU INSTALL THE BOOTSTRAP ARMS INCORRECTLY, THE BOOTSTRAP WILL NOT OPERATE. THIS CAN CAUSE INJURY TO PERSONS.

   f) Install the aft outboard arm (11) on the top and lower aft brackets (12, 13).

   g) Install the inboard forward brace (15) on the forward bracket (14) and the aft inboard arm (11).

   h) Install the outboard brace (15) on the forward bracket (14) and the aft outboard arm (11).

2) Remove the screws (3) from the core cowl panels.

3) Attach the pads (7) to the core cowl with the screws (6).

4) Attach the braces (1) to the pads (7) with the bolts (5) and washers (4).

5) Attach the braces (1) with the pins (2) to the forward bracket (14, Fig. 401).

6) Install the hold-open rods to the stow bracket on the core cowl panel.

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(c) If you use the hold-open equipment (G71023) for the fan and core cowl panels, go to the step that follows which installs the hold-open equipment (G71023).

(2) Remove the fan cowl panels or install the hold-open equipment (A71030-32) for the fan cowl panels as follows:

(a) Open the fan cowl panels (AMM 71-11-04/201).

(b) If you use the hold-open equipment (A71030-32) for the fan cowl (Fig. 403), do as follows:

1) Assemble the hold-open equipment (1) on the ground.

2) Put the hold-open equipment (1) on the forward edge of the fan cowl panels.

3) Tighten the screw clamps (2).

4) Make sure the hold-open equipment does not touch the support structure for the fan cowl.

5) Install the hold-open rods to the stow bracket on the fan cowl panels.

(c) If you use the hold-open equipment (G71023) for the fan and core cowl panels, go to the step that follows which installs the hold-open equipment (G71023).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 WHEN YOU OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Open the thrust reversers (AMM 78-31-00/201).

(a) Install the adapter for the hold-open rod for the thrust reverser (G78005).

NOTE: This will hold the thrust reverser in an extended open postion. This will let you install the hold-open equipment (A78001) more easily.

(4) Install the hold-open equipment (A78001) for the thrust reverser (Fig. 404) as follows:

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(a) Put the actuator lock (2) along the actuator rod (5).

(b) Make sure the lock yoke (7) is against the bolt (6) that attaches the actuator rod (5).

(c) Make sure the lock channel (4) is against the actuator cylinder.

(d) Put the channel clamp (3) around the actuator rod (5).

(e) Tighten the screw (8) to attach the channel clamp (3) to the actuator rod (5).

(f) Lightly close the actuator (1).

NOTE: When you lightly close the actuator, the load moves from the actuator to the actuator lock (2).

(g) Disengage the hold-open rod for the thrust reverser from the support.

(h) Install the hold-open rod and the support to its stowage points.

(5) If you use the hold-equipment equipment (G71023) to hold the fan and the core cowl panel open (Fig. 405), do as follows:

(a) Install the thrust reverser tube and attached parts on the thrust reversers (View B or E).

1) Engage the hook on the thrust reverser tube to the loop on the thrust reverser.

NOTE: Make sure the pin on the thrust reverser engages the hole on the thrust reverser tube. Or make sure the pin on the thrust reverser tube engages the hole on the thrust reverser.

2) Engage the loop on the thrust reverser tube to the hook on the thrust reverser.

NOTE: Make sure the pin on the thrust reverser engages the hole on the thrust reverser tube. Or make sure the pin on the thrust reverser tube engages the hole on the thrust reverser.

3) Tighten the knobs on the thrust reverser tube to attach the tube to the thrust reverser.

(b) Install the forward tube assembly on the fan cowl panel (View A or D).

1) Turn the forward tube to engage the tube end to the thrust reverser tube.

2) For the left fan cowl panel, do as follows:

a) Engage the hook on the left fan cowl tube to the loops on the fan cowl panel.

NOTE: Make sure the pins on the fan cowl panel engage the pinholes on the fan cowl tube.

b) Tighten the knobs on the fan cowl tube to attach the tube to the fan cowl panel.

3) For the right fan cowl panel, do as follows:

a) Engage the hooks on the fan cowl panel to the loops on the right fan cowl panel.

NOTE: Make sure the pins on the fan cowl tube engage the pinholes on the fan cowl panel.

b) Close the fan cowl latch.

c) Tighten the knobs on the fan cowl tube to attach the tube to the fan cowl panel.

4) Put the lockpin into the pin hole on the thrust reverser tube.

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5) Install the hold-open rods on the fan cowl panel to the stow bracket on the panel.

(c) Install the aft tube assembly on the core cowl panel (View C and F).

1) For the left core cowl, put the attachment block into the loop of the core cowl panel.

NOTE: Make sure the pins on the attachment block engage the pin holes on the core cowl panel.

a) Put a pin into the lockhole on the attachment block to attach the core cowl attachment to the core cowl panel.

2) For the right core cowl, install the attachment block on the cowl latch as follows:

a) Put the loop of the attachment block into the core cowl latch.

NOTE: Make sure the pins on the attachment block engage the pin holes on the core cowl panel.

b) Close the core cowl latch.

3) Put the aft tube into the thrust reverser tube.

4) Turn the aft tube to install the other end of the tube on the attachment block.

5) Put the lockpin into the pin hole on the thrust reverser tube.

6) Put the pin into the aft tube and the attachment block.

7) Install the hold-open rods on the core cowl panel to the stow bracket on the panel.

WARNING: KEEP THE ELECTRICAL POWER OFF WHILE YOU DISCONNECT THE FUEL, HYDRAULIC, AND ELECTRICAL LINES. IF YOU APPLY THE PRESSURIZED FLUIDS OR THE ELECTRICAL POWER ACCIDENTALLY, INJURY TO PERSONS AND DAMAGE TO THE ENGINE CAN OCCUR.

(6) Disconnect the primary supply line for the engine fuel as follows:

(a) Drain the fuel from the supply line (Fig. 406).

1) Put a container below the drain plug (2).

2) Remove the drain plug (2).

a) Drain the fuel.

b) Discard the packing (1).

3) Install a new packing (1) and the drain plug (2) in the fuel pump.

4) Tighten the drain plug (2) to 45-55 pound-inches (5.1-6.2 newton-meters).

a) Install a lockwire on the drain plug (2).

(b) Remove the top lockwires from the spray shield to get access to the raceway connection of the fuel supply line.

(c) Pull the coupling to the rear and turn counterclockwise to disconnect the fuel supply line (2, Fig. 407) from the raceway connector.

1) Discard the packing (17, Fig. 407) from the inner diameter groove of the raceway connector.

CAUTION: INSTALL THE CAPS ON THE FUEL SUPPLY LINE AND RACEWAY CONNECTOR. IF YOU DO NOT INSTALL THE CAPS, THE CONTAMINATION CAN GO INTO THE FUEL.

(d) Install the caps on the fuel supply line (7, Fig. 407) and the raceway connector.

(7) Remove the thermal anti-ice (TAI) duct of the inlet cowl (Fig. 408) as follows:

(a) Remove the bolt (22).

(b) Remove the clamps (17, 20) and seals (16, 21).

(c) Remove the TAI duct (24).

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CAUTION: INSTALL THE CAPS ON THE PNEUMATIC DUCTS. IF YOU DO NOT INSTALL THE CAPS, THE CONTAMINATION CAN GO INTO THE DUCTS.

(d) Install the caps on the two ends of the openings of the TAI duct.

WARNING: KEEP THE ELECTRICAL POWER OFF WHILE YOU DISCONNECT THE FUEL, HYDRAULIC, AND ELECTRICAL LINES. IF YOU ACCIDENTALLY APPLY THE PRESSURIZED FLUIDS OR THE ELECTRICAL POWER, INJURY TO PERSONS AND DAMAGE TO THE ENGINE CAN OCCUR.

(8) Remove electrical power (AMM 24-22-00/201).

CAUTION: BE CAREFUL WITH THE HYDRAULIC SUPPLY LINE. DO NOT MAKE THE HYDRAULIC SUPPLY LINE INTO A TIGHTLY COIL. IF THE HOSE CLOSES AND HAS KINKS, IT WILL DECREASE THE FLUID SUPPLY. IF THE FLUID SUPPLY DECREASES, FAILURE IN THE ENGINE DRIVEN PUMP CAN OCCUR.

CAUTION: INSTALL THE CAPS ON THE HYDRAULIC LINES AND FITTINGS. IF YOU DO NOT INSTALL THE CAPS, THE CONTAMINATION OF THE HYDRAULIC LINES AND THE LEAKAGE OF THE HYDRAULIC FLUID CAN OCCUR.

CAUTION: CLEAN THE HYDRAULIC FLUID LEAKAGE. IF THE LEAKAGE COLLECTS, THE HYDRAULIC FLUID CAN CAUSE CORROSION TO THE PART.

(9) Disconnect the hydraulic lines (Fig. 407) as follows:

(a) Put a container below the hydraulic supply line (11).

(b) Disconnect the hydraulic supply line (11).

1) Drain the fluid into the container.

2) Install the caps on the hydraulic supply line (11) and the connector.

(c) Disconnect the hydraulic pressure line (10).

1) Install the caps on the hydraulic pressure line (10) and connector.

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(d) Disconnect the hydraulic drain line (6).

1) Install the caps on the hydraulic drain line (6) and connector.

CAUTION: INSTALL THE CAPS ON THE ELECTRICAL PLUGS AND RECEPTACLES. IF YOU DO NOT, THE ELECTRICAL PLUGS AND RECEPTACLES CAN GET CONTAMINATION FROM THE DIRT AND MOISTURE, OR DAMAGE FROM THE HANDLE.

(10) Disconnect the electrical connector (1, 2, 1A and 2A, Fig. 407) (6 thru 12, and 25, Fig. 408).

(a) Install the caps on the plugs and receptacles.

(11) Disconnect the power feeder cable of the IDG from the engine as follows (Fig. 409):

CAUTION: DO NOT REMOVE THE CLAMPS ON THE POWER FEEDER CABLE FROM THE ENGINE. THE CLAMPS ARE A QUICK-RELEASE TYPE CLAMP THAT YOU CAN OPEN TO REMOVE THE POWER FEEDER CABLE FROM THE ENGINE. IF YOU REMOVE THE CLAMPS FROM THE ENGINE, YOU CAN INCORRECTLY INSTALL THE CLAMPS. INCORRECT INSTALLATION OF THE CLAMPS CAN CAUSE DAMAGE TO THE CABLE.

(a) Open the clamps (1) to remove the power feeder cable from the engine.

(b) Remove the screws (6).

(c) Remove the terminal block cover (5).

(12) Remove the nuts (4) and the phase leads of the power feeder cable from the IDG.

(a) Install the support hook on the thrust reverser.

(b) Install the wire bundle for the power feeder on the support hook (Fig. 410).

(13) Disconnect the pneumatic hose (3, Fig. 408) from the precooler.

(a) Install the caps on the pneumatic hose (3) and the connector.

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(14) Disconnect the static pressure hose (3, Fig. 407) for the EEC.

(a) Install the caps on the static pressure hose (3) and the connector.

CAUTION: INSTALL THE CAPS ON THE LINES AND CONNECTORS. IF YOU DO NOT INSTALL THE CAPS, CONTAMINATION CAN GO IN THE LINES AND CONNECTORS. THIS CAN CAUSE DAMAGE TO THE LINES AND CONNECTORS.

(15) Disconnect the strut drain lines.

(a) Disconnect the drain line (4, Fig. 407) for the right forward mount.

(b) Disconnect the drain line (1, Fig. 408) of the left forward mount.

(c) Disconnect the drain line (8, Fig. 407) for the main strut.

(d) Disconnect the drain line (9, Fig. 407) for the right raceway.

(e) Disconnect the drain line (4, Fig. 408) for the left raceway.

(16) Disconnect the flexible line (2A, Fig. 408) for the fire extinguisher.

(a) Install the caps on the flexible line (2A) and receptacle.

(17) Remove the top section of the starter duct (Fig. 407) as follows:

(a) Remove the clamps (12, 16) and seals (13, 15).

(b) Remove the starter duct (14).

(18) Remove the precooler inlet duct (Fig. 408) as follows:

(a) Remove the clamp (14) and seal (15).

(b) Remove the precooler inlet duct (13) from the engine.

(c) Install the caps on the openings of the duct and connection.

3. Remove the Power Plant With the Bootstrap Equipment

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NOTE: The bootstrap procedure is the recommended procedure, but you can do the optional procedure which uses the PT90-E Universal Engine Change System.

A. Equipment

(1) A71001-185 Bootstrap Equipment

(2) A71003-25 Torque Equipment (all rigid engine mounts)

(3) A71003-41 Torque Equipment (used only on the aft engine mounts with the vibration isolators)

(4) A71006-79 Cradle

(5) 140059-5 Stand - Shipping, engine, air/truck transportation, Stanley Aviation (Recommended). 110059-501 Transportation Stand, Stanley Aviation (Alternative)

(6) Protection pads - commercially available

B. References

(1) AMM 71-11-04/201, Fan Cowl Panels

(2) AMM 71-11-06/201, Core Cowl Panels

(3) AMM 78-31-00/201, Thrust Reverser System

C. Access

(1) Location Zone
411 Left Engine
421 Right Engine

(2) Access Panels

413AL	Fan Cowl Panel, Left Engine
414AR	Fan Cowl Panel, Left Engine
415AL	Fan Reverser, Left Engine
416AR	Fan Reverser, Left Engine
417AL	Core Cowl, Left Engine
418AR	Core Cowl, Left Engine
423AL	Fan Cowl Panel, Right Engine
424AR	Fan Cowl Panel, Right Engine
425AL	Fan Reverser, Right Engine
426AR	Fan Reverser, Right Engine
427AL	Core Cowl, Right Engine
428AR	Core Cowl, Right Engine

D. Procedure

(1) If you did not do this, install the aft bootstrap components (Fig. 401) as follows:

(a) Put the protection pads on the turbine exhaust sleeve (one on each side).

(b) Remove the bolts (1, 2, 3, 4, 5, 6) from the two sides of the strut.

(c) Install the top and lower aft brackets (12, 13) on the two sides of the strut.

(d) Install the forward bracket (14) on the two sides of the strut.

(e) Install the aft inboard arm (11) on the top and lower aft brackets (12, 13).

WARNING: INSTALL THE LONGER OUTBOARD ARM ON THE OUTBOARD BRACKETS ONLY. INCORRECT INSTALLATION OF THE BOOTSTRAP ARMS CAN CAUSE INJURY TO PERSONS AND FAILURE OF THE BOOTSTRAP.

(f) Install the aft outboard arm (11) on the top and lower aft brackets (12, 13).

(g) Install the inboard forward brace (15) on the forward bracket (14) and the aft inboard arm (11).

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(h) Install the outboard brace (15) on the forward bracket (14) and the aft outboard arm (11).

(2) Install the forward bootstrap components (Fig. 411) as follows:

(a) Remove the bolts (9) from the clamps (8).

(b) Put the forward support (7) against the forward side of the front flange of the top mount.

(c) Engage the clamp (8) slots with the pins on the aft side of the forward support (7).

(d) Move the clamps (8) down to touch the lower flange of the top mount.

(e) Put the bolts (9) through the forward support holes and loosely turn the bolts into the clamps.

(f) Make sure the bottoms of the clamps (8) touch the top of the lower flange on the top mount.

(g) Tighten the bolts (9).

(h) Install the forward outboard and inboard arms (6, 5) to the forward support and the clamp assembly (7, 8).

1) Allign the ends of the forward outboard and inboard arms (6, 5) with the pressfit buttons on the clamps (8).

(i) Attach the forward load cell (10) to the forward inboard arm (5).

NOTE: Point the load cell in the aft direction.

(j) Attach the forward load cell (10) to the forward outboard arm (6).

NOTE: Point the load cell in the aft direction.

(k) Attach the forward hoists (11) to the forward load cells (10).

NOTE: Put the handle on the forward hoist in the direction of the forward load cells.

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(3) Install the handling adapters (Fig. 411).

(a) Install the forward handling adapters (19) to the fan case of the engine with the bolts (20).

(b) Install the aft handling adapters (14) between the engine flanges with the pins (15) and safety pins (16).

(4) Install the bootstrap equipment on the cradle (Fig. 411) as follows:

(a) Install the protection pads on the engine to prevent damage from the hoists.

(b) Put the transportation stand and the cradle below the power plant from the aft side.

(c) Attach the aft load cell (1) to the aft outboard arm.

(d) Attach the end of the aft hoists (2) with the handle to the aft load cell (1) and the aft inboard arm.

(e) Put the aft cable (3) on the transportation stand and install the sheaves (4).

NOTE: Make sure you attach the outboard sheave to the inner hole and inboard sheave to the outer hole.

(f) Attach the aft hoists (2) to the cable (3).

(g) Attach the forward hoists (11) to the outboard and inboard shackles (12, 13).

NOTE: Make sure you attach the outboard shackle (12) to the inner hole and inboard shackle (13) to the outer hole.

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WARNING: ONLY THE PERSONS, WHO CAN USE THE HOIST LEVER CORRECTLY, MUST OPERATE THE HOIST. THE HOISTS CAN RELEASE THE LOAD IF YOU ACCIDENTALLY SET THE CONTROL LEVER OR THE KNOB INTO THE NEUTRAL OR THE FREE CHAIN POSITION. IF THE LOAD FALLS, INJURY TO PERSONS OR DAMAGE TO THE ENGINE CAN OCCUR.

WARNING: DO NOT LET THE LOAD BE MORE THAN 2500 POUNDS (1136 KG) IN THE AFT LOAD CELL. DO NOT LET THE FRONT WHEELS OF THE TRANSPORTATION STAND TOUCH THE GROUND WHEN THE AFT BOOTSTRAPS HAVE THE LOAD. IF THE LOAD IS MORE THAN 2500 POUNDS (1136 KG) OR THE FRONT WHEELS TOUCH THE GROUND, THE LOAD CAN FALL AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

WARNING: ADD THE LOAD ON THE FORWARD BOOTSTRAPS SLOWLY AND CONTINUOUSLY. MAKE SURE THE LOAD DIFFERENCE BETWEEN THE INBOARD AND OUTBOARD BOOTSTRAPS IS LESS THAN 2000 POUNDS (909 KG) WHEN YOU LIFT THE

CRADLE AND TRANSPORTATION STAND. IF THE LOAD DIFFERENCE IS MORE THAN 2000 POUNDS (909 KG), THE LOAD CAN FALL AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(5) Lift the cradle to the power plant (Fig. 412) as follows:

(a) Lift the cradle and transportation stand approximately two inches (50 mm) from the ground.

1) Let the cradle and transportation stand become level and aligned below the power plant.

(b) Put the cradle and transportation stand on the ground.

(c) Loosen the bolts (2) until the clamps are free of the transportation stand.

(d) Remove the pins (4) from the cradle and the transportation stand.

(e) Lift the cradle from the transportation stand to the power plant.

NOTE: You can use the forward and aft hoists to align the cradle with the power plant. You can use the forward hoists to move the cradle in the roll direction, and the forward or aft hoists to move the cradle in the pitch direction.

(6) Attach the cradle to the engine adapters (Fig. 411) as follows:

(a) Align the forward and aft adapters (19, 14) to the cradle.

(b) Attach the forward adapters (19) to the cradle with the pins (18).

(c) Attach the aft adapters (14) to the cradle.

WARNING: MONITOR THE LOAD CELLS ON THE FORWARD AND AFT HOISTS. DO NOT LET THE LOAD BE MORE THAN 8000 POUNDS (3636 kg) IN EACH FORWARD LOAD CELL. DO NOT LET THE LOAD BE MORE THAN 2500 POUNDS (1136 kg) IN THE AFT LOAD CELL. IF THE LOAD IS MORE THAN THE LIMITS, THE POWER PLANT CAN FALL AND CAUSE INJURY TO PERSONS OR DAMAGE TO THE POWER PLANT.

(7) Increase the hoist loads equally to move the weight of the power plant on the bootstrap equipment.

(a) Increase the aft hoist load until the load cell reads 2000 pounds (909 kg).

(b) Increase the forward hoist loads until each load cell reads 6000 pounds (2727 kg).

(8) Disconnect the engine mounts (Fig. 413) as follows:

(a) ENGINES WITH RIGID ENGINE MOUNTS;

Use the A71003-25 torque equipment to loosen the forward and aft vertical tension bolts (1, 2, 10) one-half turn.

(b) ENGINES WITH THE VIBRATION ISOLATORS ON THE AFT ENGINE MOUNTS;

Use the A71003-41 torque equipment to loosen the forward and aft vertical tension bolts (1, 2, 13) one-half turn.

(c) Monitor the load cell indications and the engine mount-to-strut interface.

NOTE: The load cell indications must not change. Make sure there is no gap between the engine mounts and the strut.

MECH | INSP

1) If the load cell indications increase, make sure the indications are less than the maximum permitted value.

2) If a gap shows between the engine mount and strut, slowly lift the forward or aft hoists to remove the gap.

(d) Loosen the vertical tension bolts (1, 2, and 10 or 13) another one-half turn.

(e) Monitor the load cell indications and the engine strut interface.

NOTE: The load cell indications must not change. Make sure there is no gap between the engine mounts and the strut.

CAUTION: INSTALL THE TAG ON THE BOLT. WRITE THE LOCATION OF THE BOLT ON THE TAG. FAILURE TO IDENTIFY THE BOLT LOCATION CAN CAUSE INCORRECT INSTALLATION OF THE BOLT.

(f) Remove the vertical tension bolts (1, 2, and 10 or 13).

1) Install the tag on the bolt (1, 2, and 10 or 13).

2) Identify the location of the bolt (1, 2, and 10 or 13) on the tag.

(9) Lower the power plant and attach the power plant to the transportation stand as follows:

MECH | INSP

WARNING: KEEP THE WORK STANDS AND PERSONS CLEAR OF THE STRUT. THE POWER PLANT CAN MOVE WITH RELATION TO THE STRUT WHEN THE SHEAR PINS ARE CLEAR FROM THE STRUT. IF THE PERSONS AND WORK STANDS ARE NOT CLEAR OF THE STRUT, INJURY TO THE PERSONS AND DAMAGE TO THE EQUIPMENT CAN OCCUR.

WARNING: MONITOR THE LOAD CELLS ON THE FORWARD AND AFT HOISTS. DO NOT LET THE LOAD BE MORE THAN 8000 POUNDS (3636 kg) IN EACH FORWARD LOAD CELL. DO NOT LET THE LOAD BE MORE THAN 2500 POUNDS (1136 kg) IN THE AFT LOAD CELL. IF THE LOAD IS MORE THAN THE LIMITS, THE POWER PLANT CAN FALL AND CAUSE INJURY TO PERSONS OR DAMAGE TO THE POWER PLANT.

WARNING: ADD THE LOAD ON THE FORWARD BOOTSTRAPS SLOWLY AND CONTINUOUSLY. THIS MAKES SURE THE LOAD DIFFERENCE BETWEEN THE INBOARD AND OUTBOARD BOOTSTRAPS IS LESS THAN 2000

POUNDS WHEN YOU LIFT THE CRADLE AND TRANSPORTATION STAND. IF THE LOAD DIFFERENCE IS MORE THAN 2000 POUNDS (909 KG), THE LOAD CAN FALL AND CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Lower the aft hoists slowly and equally until the shear pins (12, Fig. 413) on the aft engine mount are clear from the top engine mount.

(b) Lower the forward hoists slowly and equally until the shear pin (4, Fig. 413) on the forward engine mount is clear from the top engine mount.

(c) Lower the engine.

(d) Turn the engine to align with the transportation stand.

CAUTION: DO NOT LET THE FRONT OF THE CRADLE AND ENGINE TOUCH THE TRANSPORTATION STAND WHEN THE AFT BOOTSTRAP HAS THE LOAD. IF THE LOAD IN THE AFT LOAD CELL IS MORE THAN 2500 POUNDS (1136 KG), THE LOAD CAN FALL AND CAUSE DAMAGE TO THE POWER PLANT, CRADLE, OR TRANSPORTATION STAND.

(e) Attach the engine and the cradle to the transportation stand as follows (Fig. 412):

1) Align the cradle and the transportation stand.

MECH | INSP

2) Lower the cradle with the engine to the transportation stand.

NOTE: Make sure you lower the forward and aft ends equally, or the aft end just before the forward end. This will make sure the load in the aft bootstrap is not more than the limits.

3) Align the clamps (3).

4) Tighten the bolts (2).

5) Install the pins (4).

(f) Disconnect the hoists (2, 11, Fig. 411) from the cradle and the bootstrap equipment.

(g) Pull the transportation stand with the cradle and the power plant forward until they are clear of the strut.

(10) Remove the bootstrap equipment (Fig. 411) as follows:

NOTE: You must remove the bootstrap components if you have one of the two conditions that follow:
- you will not install the power plant on the strut in less than one day
- the winds will be more than the limit for the hold-open equipment.

If one of two conditions does not occur, you can let the load cells, aft arms, and the forward arms stay on the strut. You can use those during the installation of the replacement power plant.

(a) Remove the aft load cell (1).

(b) Remove the forward braces (15, Fig. 401).

(c) Remove the aft arm (11, Fig. 401).

(d) Remove the forward load cells (10)

(e) Remove the forward inboard and outboard arms (5, 6).

(f) Remove the forward support and the clamp assembly as follows:

MECH | INSP

1) Remove the bolts (9) which attach the clamps (8) to the forward support (7).

2) While you hold the forward support (7), do these steps:

a) Move the bottom of the clamps (8) out of the forward support pins.

b) Disengage the clamp slots from the forward support pins.

3) Remove the forward support (7).

(11) If you removed the core and fan cowl panels, remove the hold-open equipment (A78001) for the thrust reverser as follows:

NOTE: You must close the cowls if you have one of the two conditions that follow:
- you will not install the replacement engine in less than one day,
- the speed of the winds is more than the limit for the hold-open equipment.

(a) Open the thrust reverser to release the load on the hold-open equipment (AMM 78-31-00/201).

(b) Loosen the screw (8) to release the channel clamp (3).

(c) Move the channel clamp (3) off the actuator rod (5).

(d) Remove the actuator lock (2) from the actuator (1).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 WHEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(e) Close the thrust reverser (AMM 78-31-00/201).

(f) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

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(12) If you installed the hold-open equipment (A71032-14 and bootstrap) for the fan and core cowl panels, remove the hold-open equipment (A78001) as follows:

NOTE: You must close the cowls if you have one of the two conditions that follow:
- you will not install the replacement engine on the strut in less than one day,
- the speed of the wind is more than the limit for the hold-open equipment.

(a) Remove the hold-open equipment for the thrust reverser (Fig. 404) as follows:

1) Open the thrust reverser to remove the load on the hold-open equipment (AMM 78-31-00/201).

2) Loosen the screw (8) to release the channel clamp (3).

3) Move the channel clamp (3) off the actuator rod (5).

4) Remove the actuator lock (2) from the actuator (1).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 WHEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(b) Close the thrust reverser (AMM 78-31-00/201).

WARNING: HOLD THE CORE COWL PANELS BEFORE YOU REMOVE THE HOLD-OPEN EQUIPMENT. IF YOU DO NOT HOLD THE CORE COWL PANELS, THE COWL CAN MOVE FREELY AND CAUSE INJURY TO PERSONS.

(c) Remove the hold-open braces for the core cowl (1, Fig. 402).

(d) Close the core cowl panels (AMM 71-11-06/201).

WARNING: HOLD THE FAN COWL PANELS BEFORE YOU REMOVE THE HOLD-OPEN EQUIPMENT. IF YOU DO NOT HOLD THE FAN COWL PANELS, THE PANELS CAN MOVE FREELY AND CAUSE INJURY TO PERSONS.

MECH | INSP

(e) Remove the hold-open equipment (A71030-32) for the fan cowl (1, Fig. 403).

(f) Close the fan cowl panels (Ref 71-11-04/201).

(g) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

(13) If you installed the hold-open equipment (G71023) for the fan and core cowl panels, remove the hold-open equipment (Fig. 405) as follows:

NOTE: You must close the cowls if you have one of the two conditions that follow:
- you will not install the replacement engine on the strut in less than one day,
- the speed of the wind is more than the limit for the hold-open equipment.

(a) Open the thrust reverser to remove the load on the hold-open equipment (AMM 78-31-00/201).

(b) Remove the forward tube assembly from the fan cowl panel (View A or D) as follows:

1) Open the fan cowl panel to remove the load on the hold-open equipment (AMM 71-11-04/201).

2) Remove the lockpin from the pin hole on the thrust reverser tube.

3) Loosen the knobs on the fan cowl tube to disconnect the tube from the fan cowl panel.

4) For the right fan cowl panel, open the fan cowl latch.

5) Disengage the hooks from the loops.

6) Turn the forward tube and remove the forward tube assembly from the fan cowl panel and the thrust reverser tube.

(c) Remove the aft tube assembly from the core cowl panel (View C or F) as follows:

1) Open the core cowl panel to remove the load on the hold-open equipment (AMM 71-11-06/201).

MECH | INSP

2) Remove the pin from the aft tube and the attachment block.

3) Remove the lockpin from the pin hole on the thrust reverser tube.

4) Turn and remove the aft tube.

5) For the right core cowl, open the core cowl latch.

6) For the left core cowl panel, remove the pin from the lockhole on the attachment block.

7) Remove the attachment block from the core cowl panel.

(d) Remove the thrust reverser tube from the thrust reversers (View B or E) as follows:

1) Loosen the knobs on the thrust reverser tube.

2) Remove the thrust reverser tube from the thrust reverser half.

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 WHEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(e) Close the thrust reverser (AMM 78-31-00/201).

(f) Close the core cowl panels (AMM 71-11-06/201).

(g) Close the fan cowl panels (AMM 71-11-04/201).

(h) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

4. Remove the Power Plant With the PT90-E

NOTE: The PT90-E procedure is an optional procedure to the bootstrap procedure which is the recommended procedure.

You must use the tool manufacturers' instructions with the steps that follow to remove or install an engine correctly.

A. Equipment

MECH | INSP

(1) PT90-E - Universal Engine Change System; Dendro Maskin Lift AB Lovholmsgrand 12, S-117 43 Stockholm, Sweden; or NORDEQUIP, INC., 7315 Courthouse Boulevard, Hastings, MN USA 55033

(2) A71006-79 Cradle

(3) A71003-25 Torque Equipment (all rigid engine mounts)

(4) A71003-41 Torque Equipment (used only on the aft engine mounts with the vibration isolators)

B. References

(1) AMM 71-11-04/201, Fan Cowl Panels

(2) AMM 71-11-06/201, Core Cowl Panels

(3) AMM 78-31-00/201, Thrust Reverser Systems

C. Access

(1) Location Zone

411	Left Engine
421	Right Engine

(2) Access Panels

413AL	Fan Cowl Panel, Left Engine
414AR	Fan Cowl Panel, Left Engine
415AL	Fan Reverser, Left Engine
416AR	Fan Reverser, Left Engine
417AL	Core Cowl, Left Engine
418AR	Core Cowl, Left Engine
423AL	Fan Cowl Panel, Right Engine
424AR	Fan Cowl Panel, Right Engine
425AL	Fan Reverser, Right Engine
426AR	Fan Reverser, Right Engine
427AL	Core Cowl, Right Engine
428AR	Core Cowl, Right Engine

D. Procedure (Fig. 414)

MECH	INSP

(1) Make sure the PT90-E is on.

(a) Make sure the batteries are fully charged.

(b) Make sure the master circuit breaker is in the ON position.

(c) Push the START button on the aft horizontal support until you see the green light come on.

(2) Put the PT90-E into the correct position below the engine.

(a) Put a plumb line on the center of the engine and make a mark on the floor (plumb line A).

(b) Make a second mark (plumb line B) that is approximately 7 inches inboard of the first mark (plumb line A).

(c) Put the center of the PT90-E engine hoist in position above the plumb line B.

1) The forward tow bar and the aft tow bar can control the engine hoist.

(d) Make sure the engine hoist and cradle is approximately 4-6 inches farther forward than necessary.

NOTE: The cradle and the engine hoist will slightly move to the rear while it is lifted.

(3) Install the forward engine adapters on the engine fan case.

(4) Connect the control box to the PT90-E.

(a) Connect the control box cable to the connection on the forward end of the PT90-E.

(b) Connect the control box cable to the control box.

(5) Look at the transverse, axial and roll scales on the PT90-E.

(6) Make sure the pointer is at zero (center) for each scale.

(a) If the pointer is not at zero (center) for one of the scales, operate the control box to put the pointer(s) at zero.

(7) Put the parking brake at each wheel in the locked position.

MECH | INSP

(8) Use the control box to lower the ground pad support and lift the PT90-E and the cradle until the wheels do not touch the ground.

(9) Use the control box to move the cradle in the roll direction 6 degrees.

(10) Use the control box to lift the PT90-E until the cradle attach points are approximately 1 inch from the engine attach points.

(11) Make sure all the tools and the mechanics that are necessary to remove the engine are on the cradle.

(12) Make sure you set the load distribution display on the control box to zero.

(13) Use the control box to set the load limit at 11,500 pounds.

(14) Use the control box to (slowly) lift the PT90-E and cradle until you can connect the cradle to the engine.

(a) Make sure you use the control box to keep the space between the cradle attach points and the engine at the same distance.

(15) When the cradle is in the correct position, do the steps that follow:

(a) Install the aft attach pins into the engine.

(b) Install the quick-release pins through the cradle and the forward engine adapters.

(16) Use the control box to lift the PT90-E, cradle, and engine.

(a) Make sure the AUTOGUARD button is in the out (on) position.

CAUTION: MAKE SURE YOU OPERATE THE CONTROL BOX CORRECTLY SO YOU SEE THE LED IS IN THE CENTER OF THE DISPLAY. IF YOU DO NOT, YOU CAN CAUSE SIDE LOADS ON THE ENGINE MOUNT AND STRUT AND CAUSE DAMAGE TO EQUIPMENT AND INJURY TO PERSONS.

(b) Make sure you keep the light emitting diode (LED) for the load distribution display on the control box in the center of the display.

(c) Make sure you do not lift the engine too much.

MECH	INSP

(17) Disconnect the engine mounts (Fig. 413) with the steps that follow:

(a) ENGINES WITH RIGID ENGINE MOUNTS;

Use the A71003-25 torque equipment to loosen the forward and aft vertical tension bolts (1, 2, 10) one-half turn.

(b) ENGINES WITH THE VIBRATION ISOLATORS ON THE AFT ENGINE MOUNTS;

Use the A71003-41 torque equipment to loosen the vertical tension bolts (13) one-half turn.

(c) Make sure you monitor the load distribution display and the engine-to-strut interface.

1) Make sure the load distribution display does not change.

2) Make sure you do not see a small distance between the engine mounts and the strut.

3) If you see a small distance between the engine mount and the strut, use the control box to slowly lift the engine until you cannot see the small distance.

NOTE: If you see the load distribution display increase, make sure the load does not increase more than the maximum load limts.

4) Carefully loosen the vertical tension bolts (1, 2 and 10 or 13) one-half turn again.

5) Make sure you monitor the load distribution display and the engine-to-strut interface.

6) Make sure the load distribution display does not change and you do not see a small distance between the forward and the aft engine mounts and the strut.

NOTE: The weight of the engine is held by the PT90-E engine lift equipment.

(d) Remove the vertical tension bolts (1, 2, and 10 or 13) from the engine mounts.

MECH | INSP

CAUTION: MAKE SURE YOU ARE VERY CAREFUL WHEN YOU LOWER THE POWER PLANT. THE POWER PLANT CAN MOVE IN RELATION TO THE STRUT WHEN THE SHEAR PINS ARE AWAY FROM THE STRUT. THIS CAN CAUSE INJURY TO PERSONS.

(18) Use the control box to slowly and equally lower the forward end and the aft end of the power plant until the shear pins (4 and 12) on the forward and aft engine mounts are away from the strut.

CAUTION: MAKE SURE YOU LOWER THE POWER PLANT WITH THE FORWARD END LOWER THAN THE AFT END. IF YOU DO NOT, THE TOP OF THE ENGINE FAN CASE CAN TOUCH THE THRUST REVERSER AND CAUSE DAMAGE TO EQUIPMENT.

(19) Carefully lower the power plant 3-4 inches (75-100 mm) with the forward end lower than the aft end.

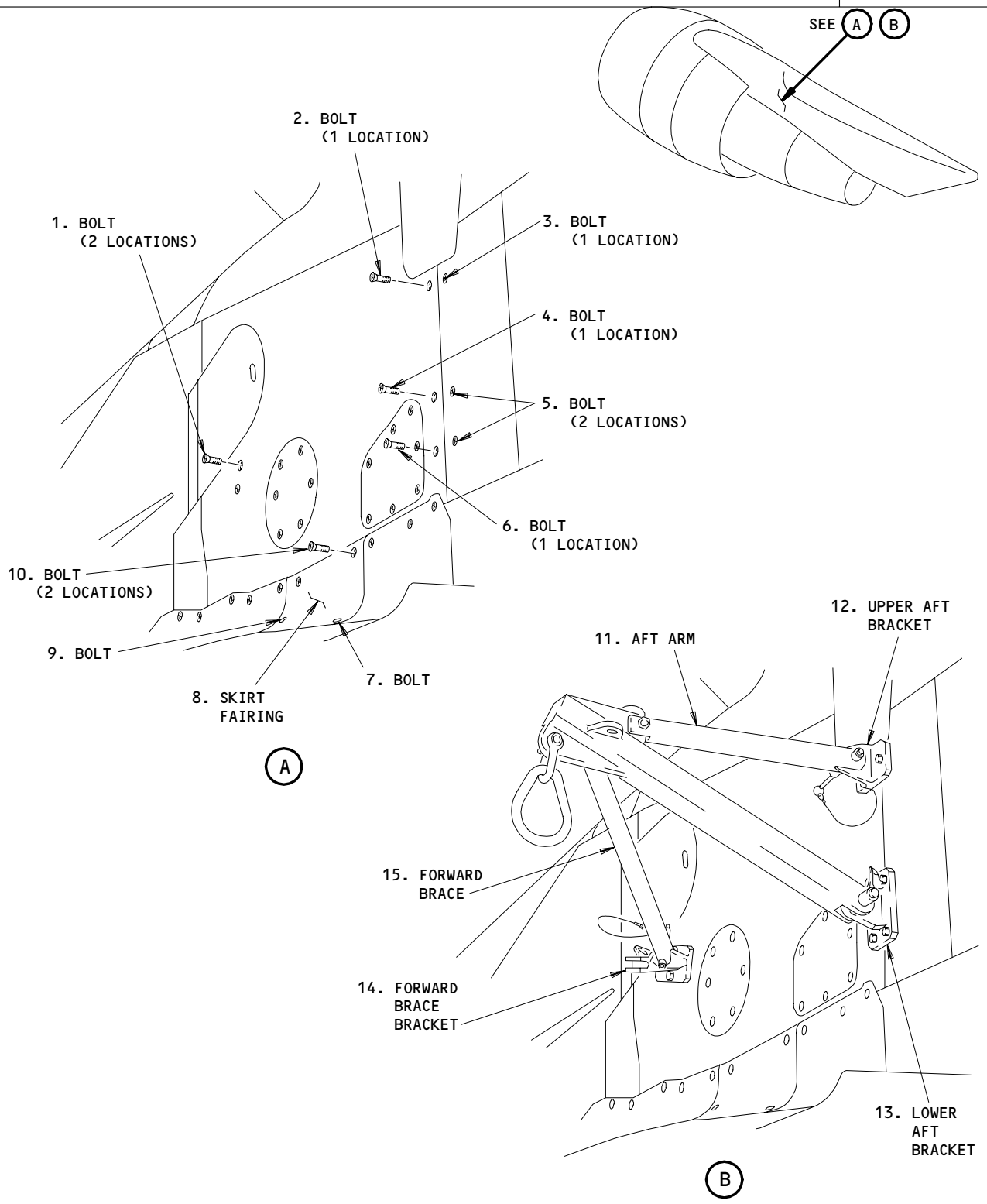
(20) Use the control box to move the engine in the roll direction to the 0 mark on the roll indication.

(21) Use the control box to lower the power plant until the ground pad lifts off the ground and is in the stored position.

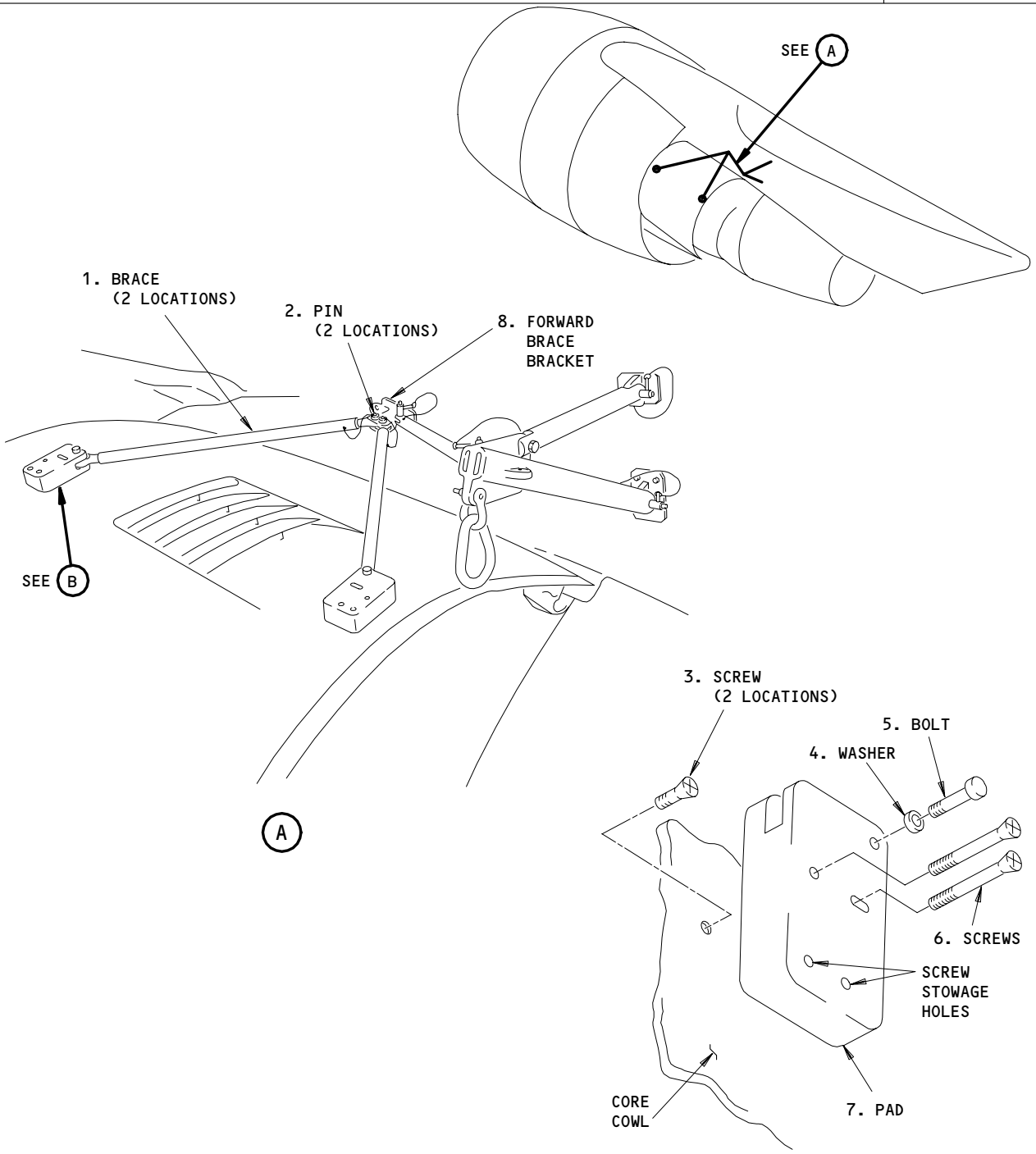
(22) Put the brake levers to the not locked position.

(23) Push the power plant forward until it is away from the strut and remove the power plant from the area.

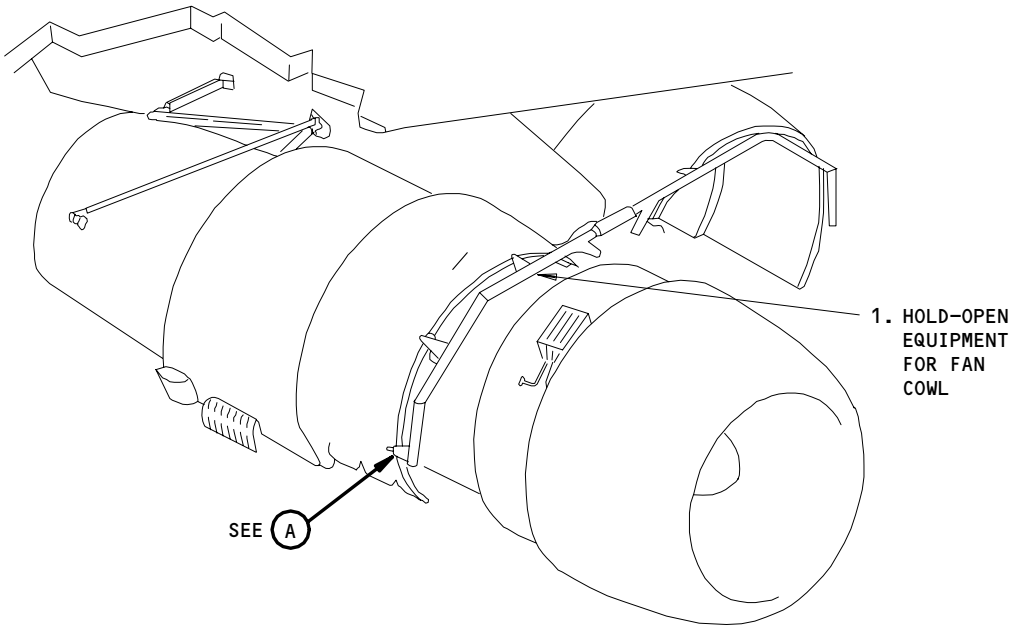
(24) Remove the protection pads.

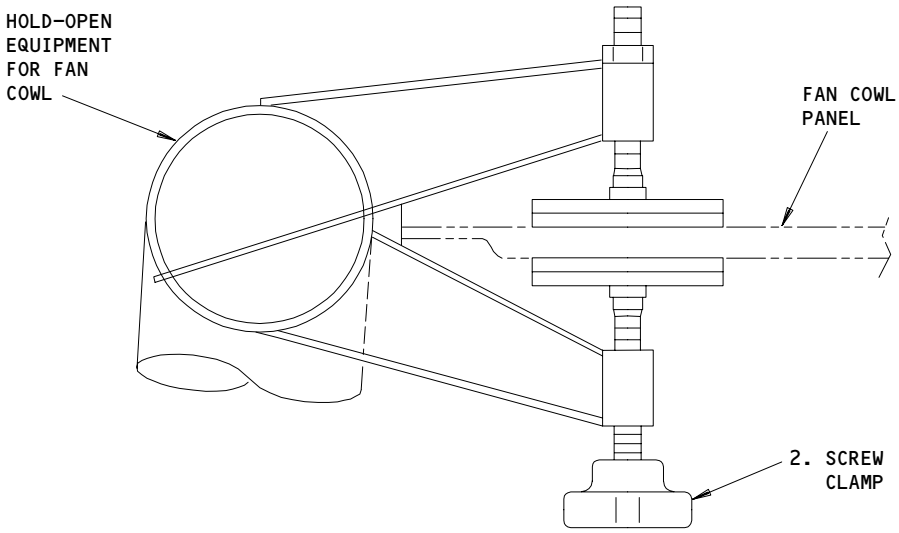


Aft Bootstrap Equipment Installation
Figure 401

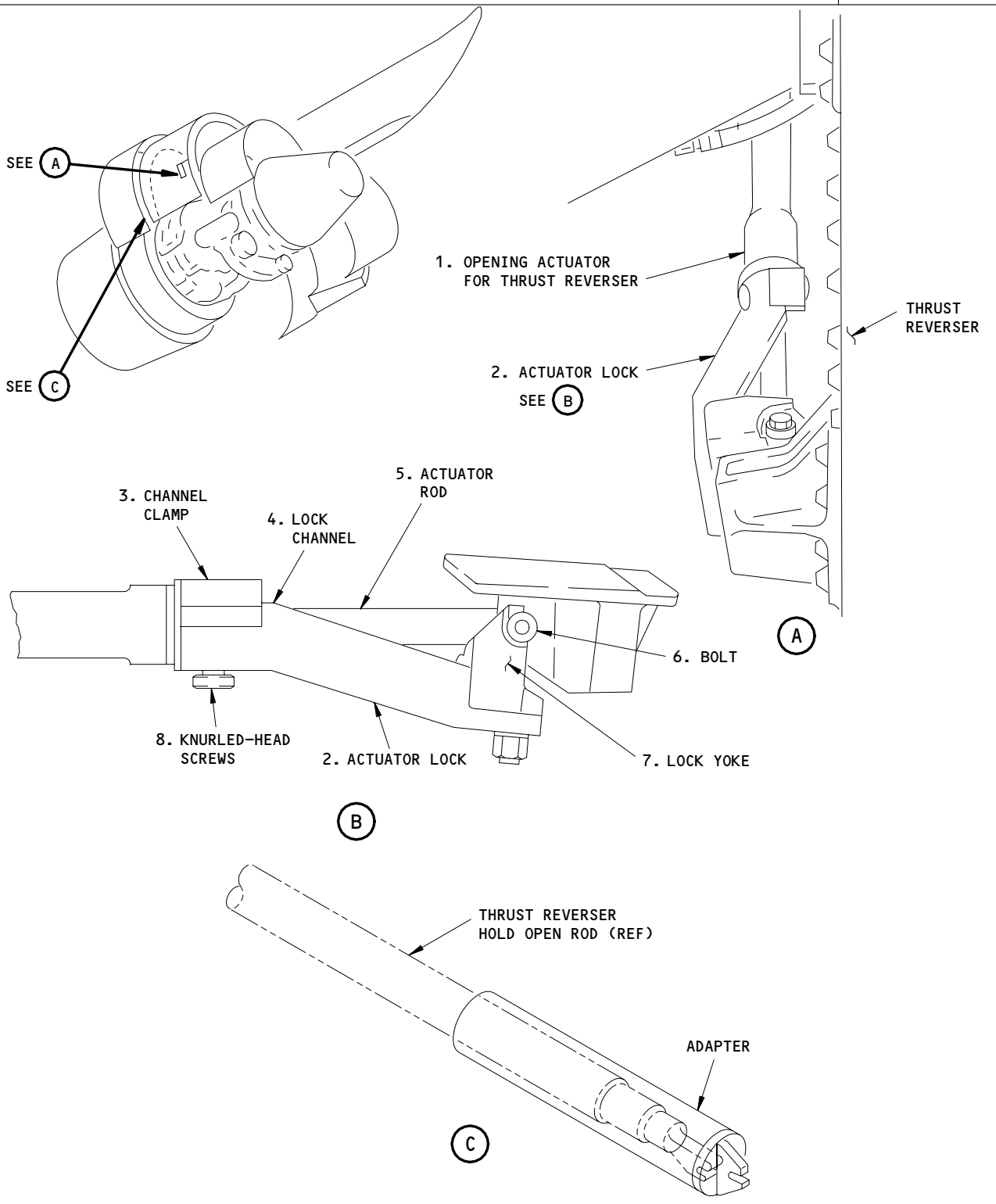


Core Cowl Panel Hold-Open Equipment Installation
Figure 402

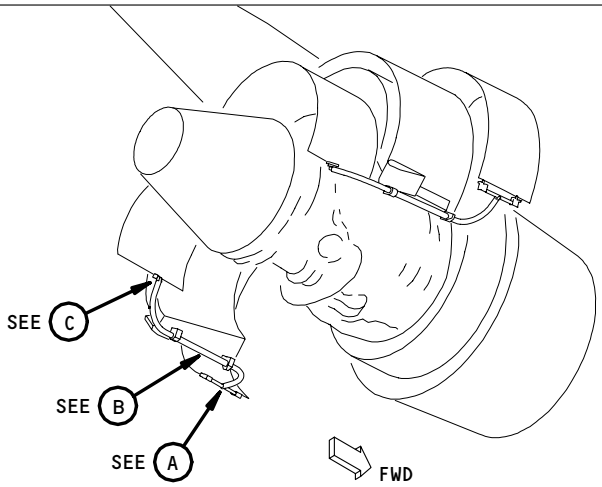


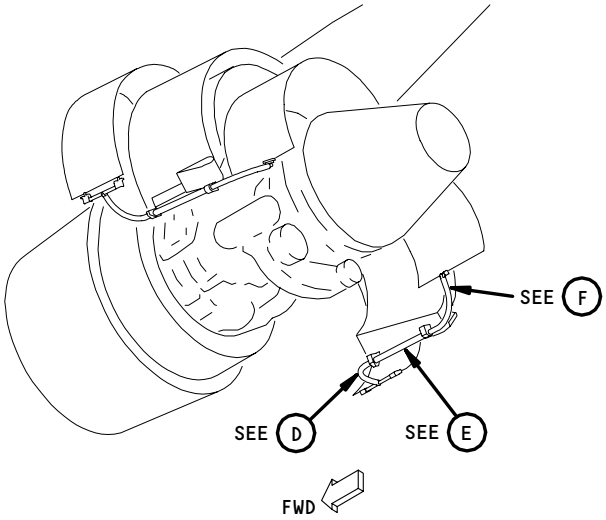


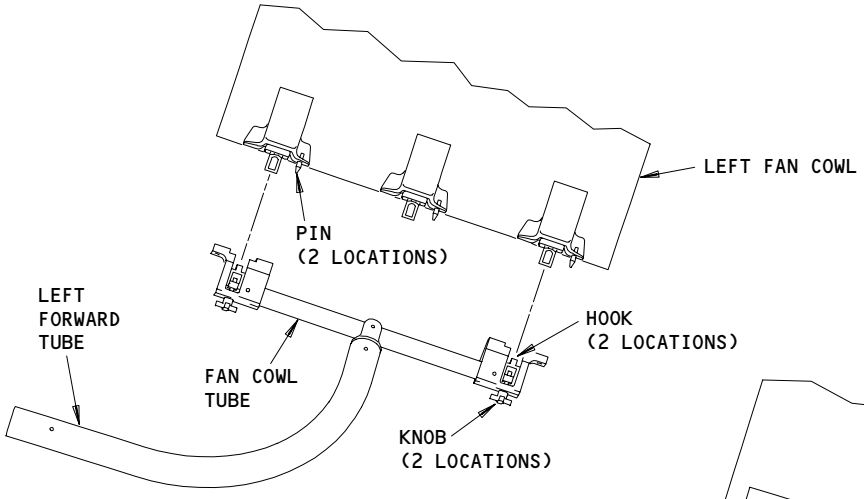
Fan Cowl Panel Hold-Open Equipment Installation
Figure 403



Thrust Reverser Hold-Open Equipment Installation
Figure 404

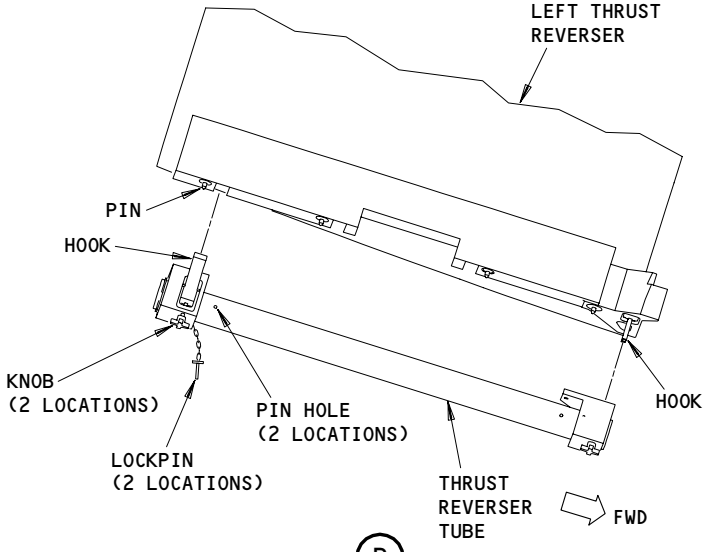






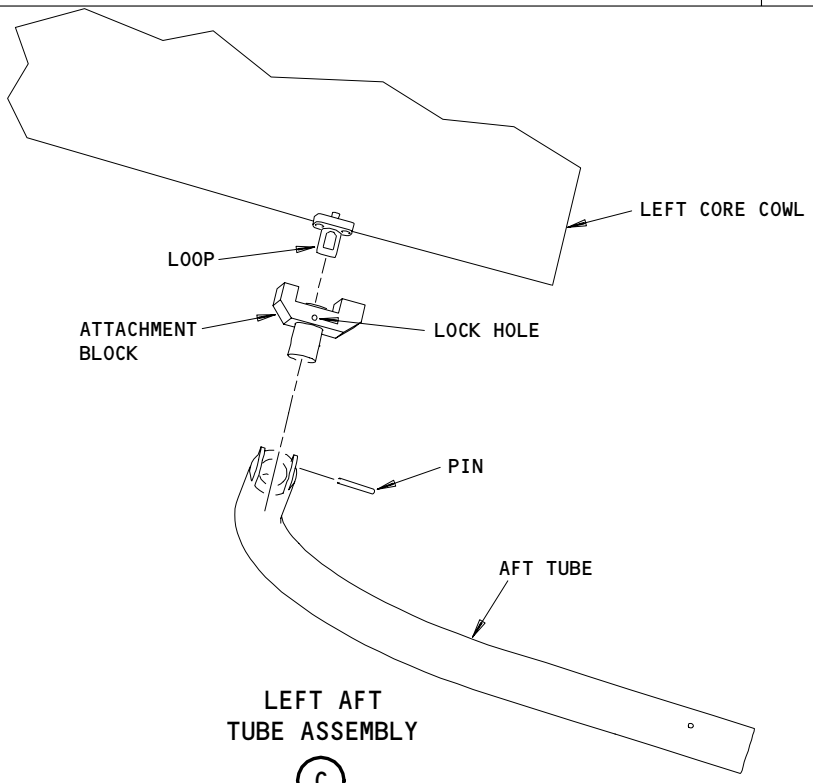
LEFT FORWARD TUBE ASSEMBLY

A



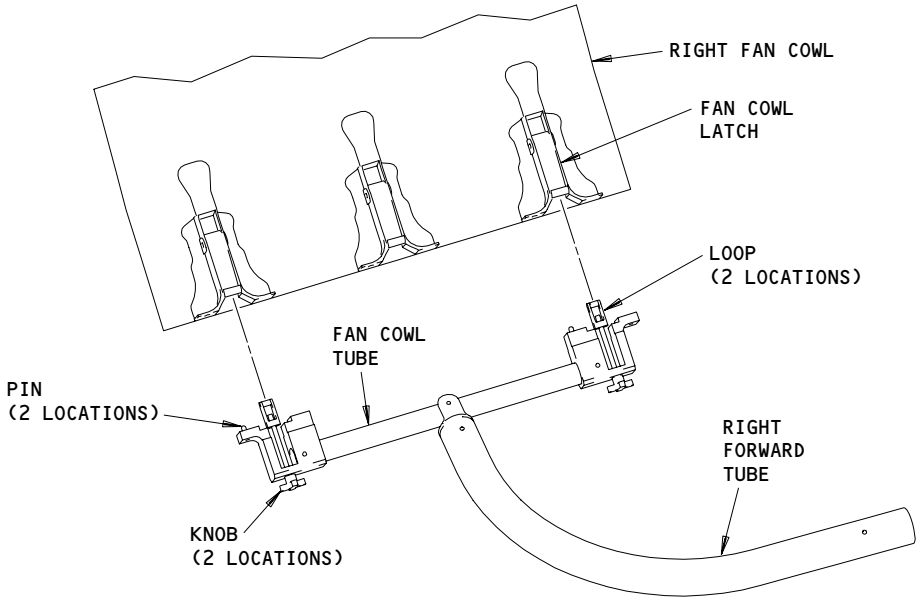
B

Fan and Core Cowl Hold-Open Equipment Installation
Figure 405 (Sheet 1)



LEFT AFT
TUBE ASSEMBLY

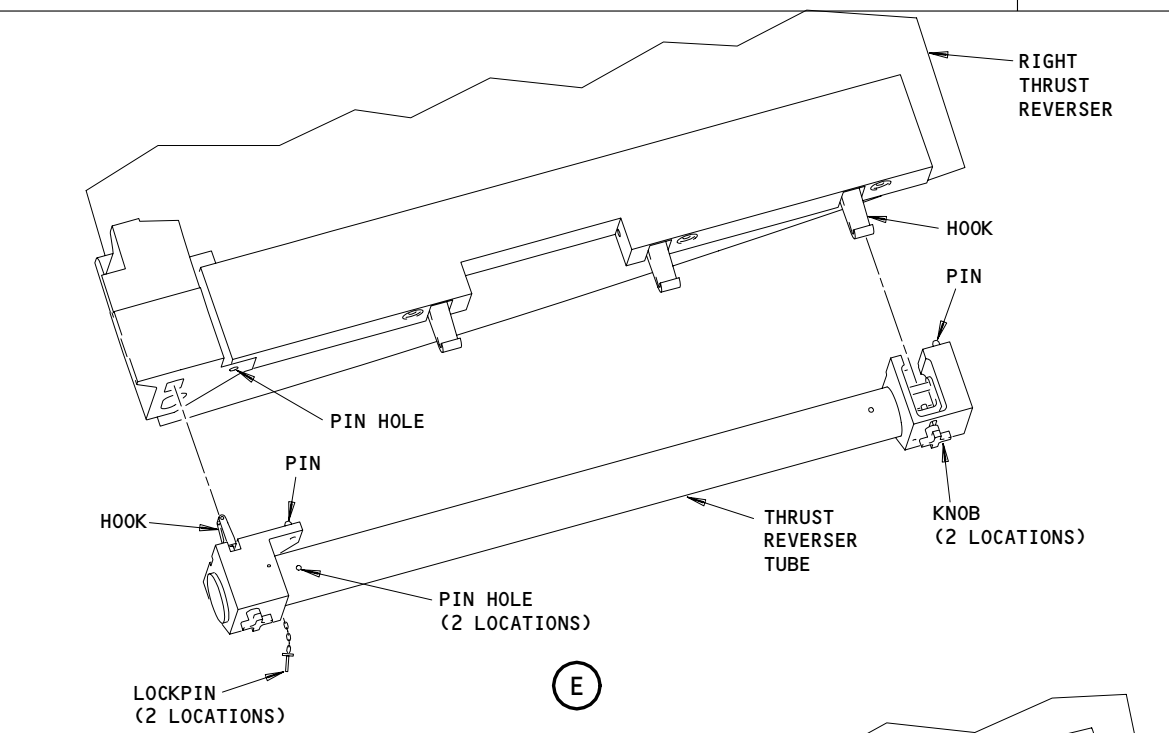
C

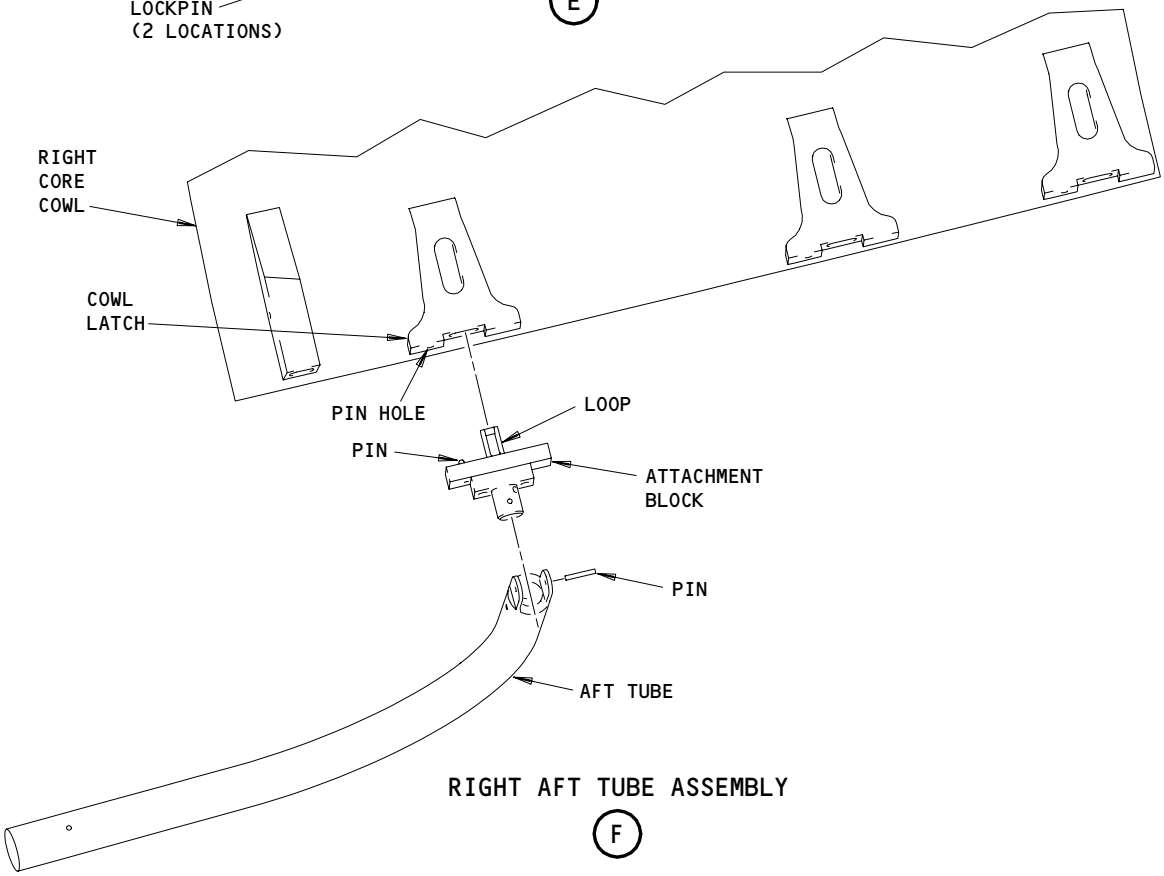


RIGHT FORWARD TUBE ASSEMBLY

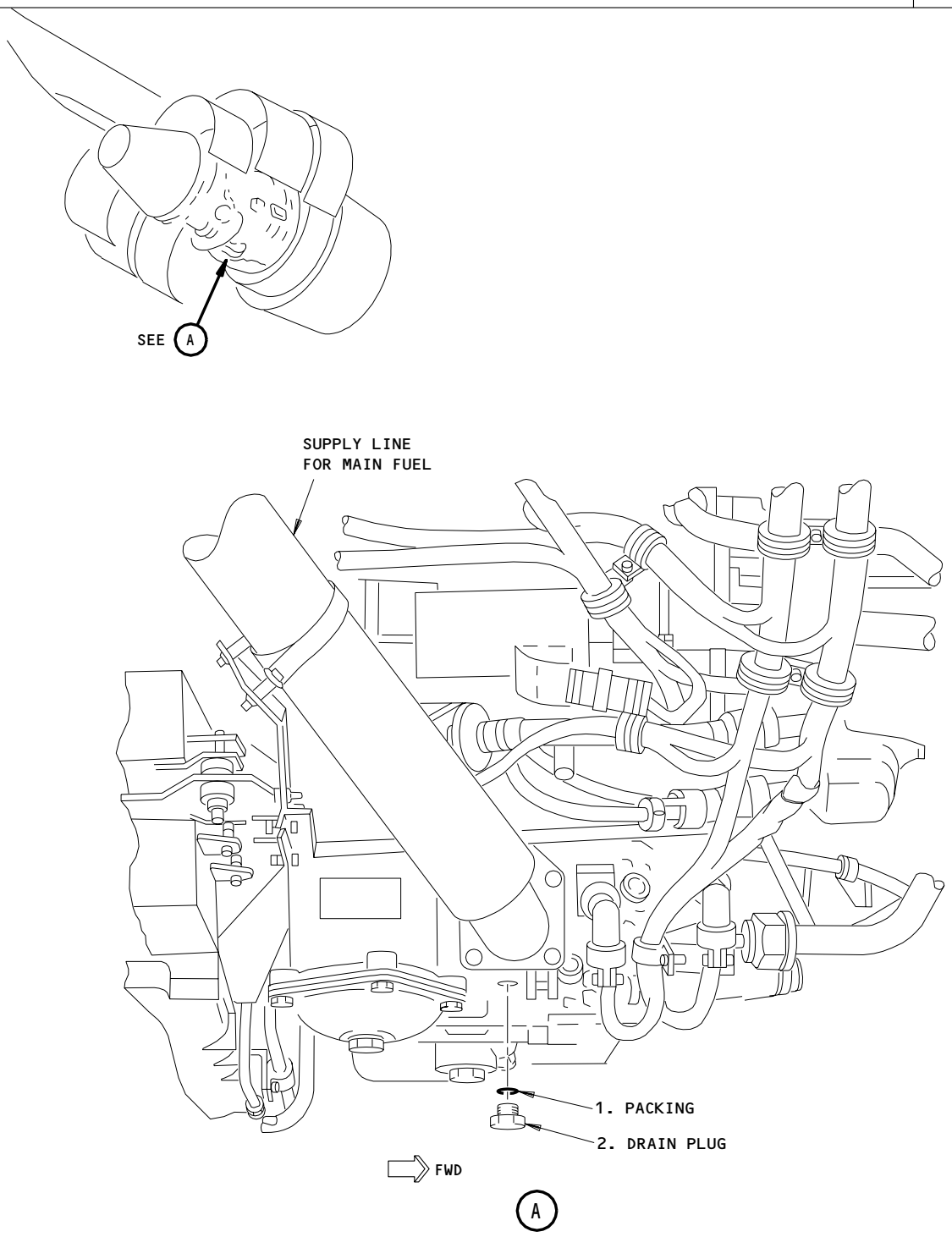
D

Fan and Core Cowl Hold-Open Equipment Installation
Figure 405 (Sheet 2)

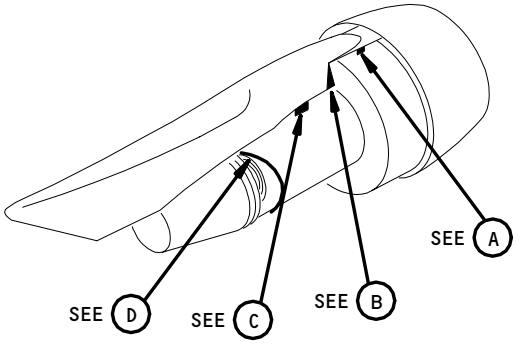


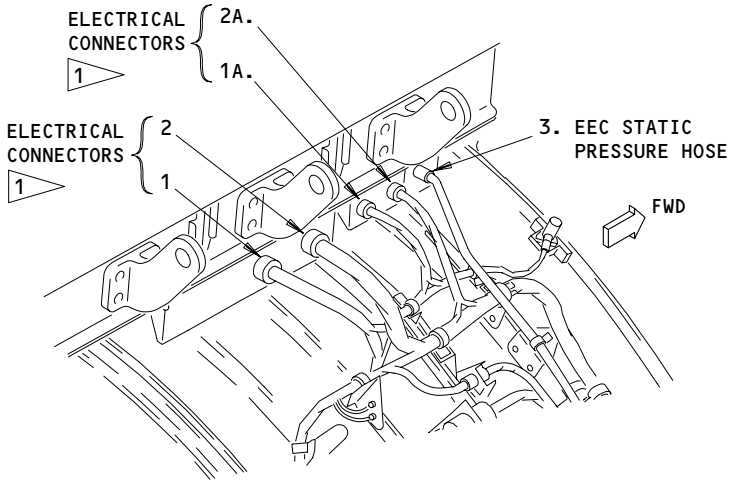


Fan and Core Cowl Hold-Open Equipment Installation
Figure 405 (Sheet 3)



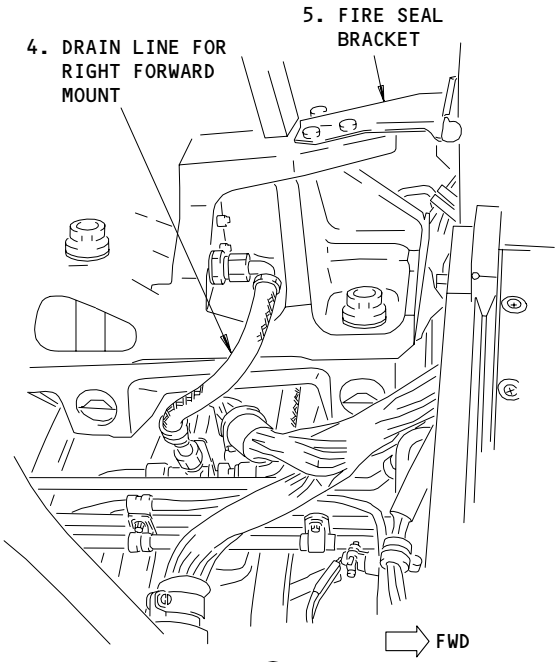
Fuel System Drain
Figure 406





ENGINES WITH SCU

A

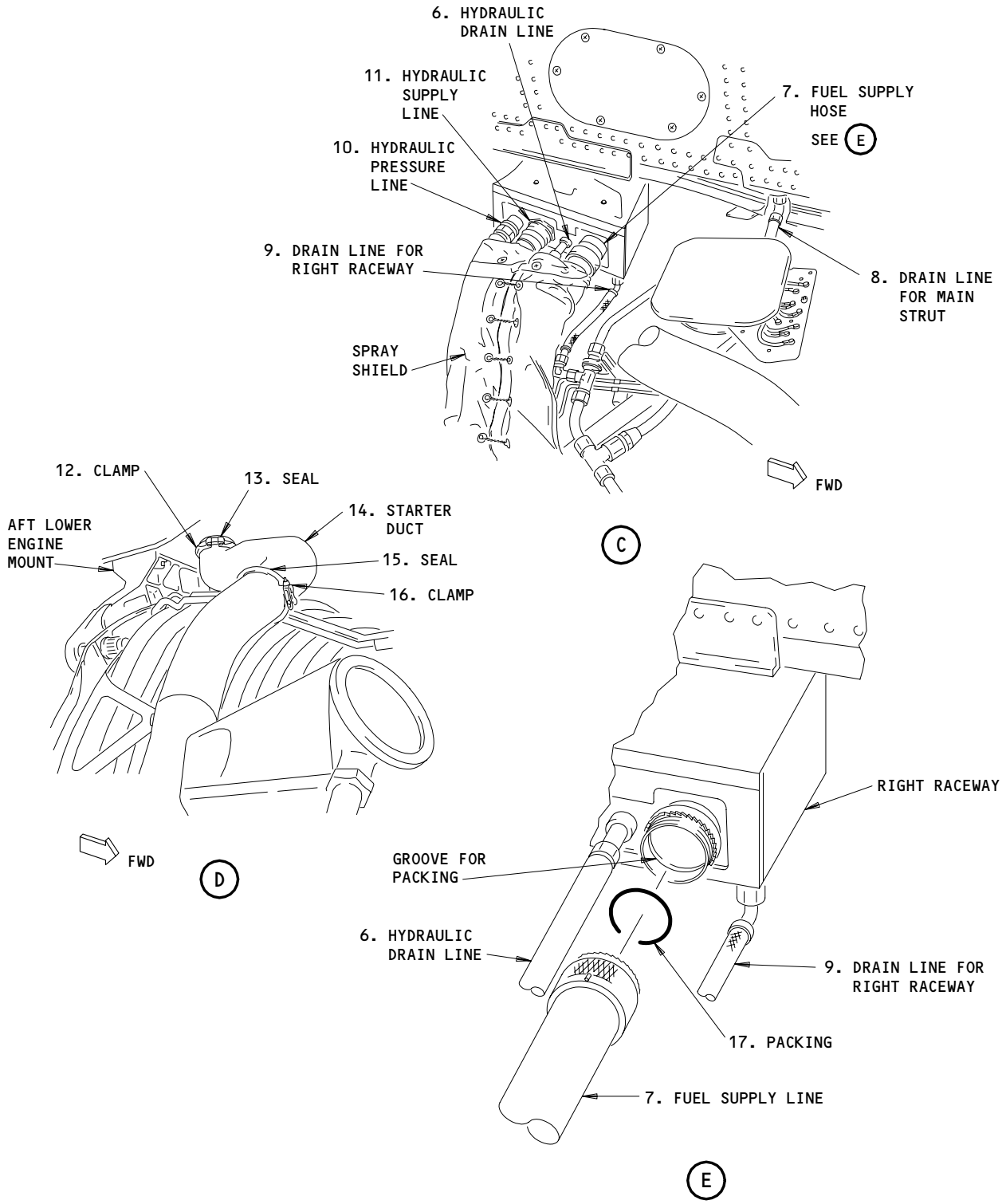


B

1

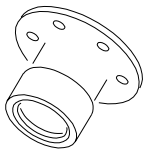
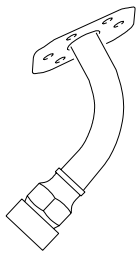
ELECTRICAL CONNECTORS IDENTIFICATION			
INDEX NO.	CONNECTOR PLUG	MATING RECEPTACLES	
		STRUT	
		LEFT	RIGHT
1	D8320P	D8320J	D8334J
2	D4224P	D4224J	D4246J
1A	D8360P	DUMMY RECEPTACLES	
2A	D8350P		

Power Plant Disconnect Locations (Right Side)
Figure 407 (Sheet 1)



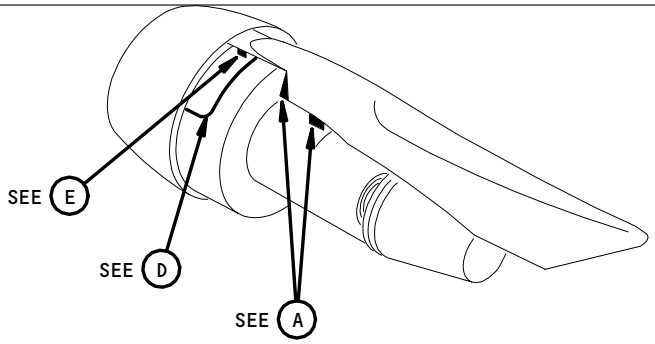
Power Plant Disconnect Locations (Right Side)
Figure 407 (Sheet 2)

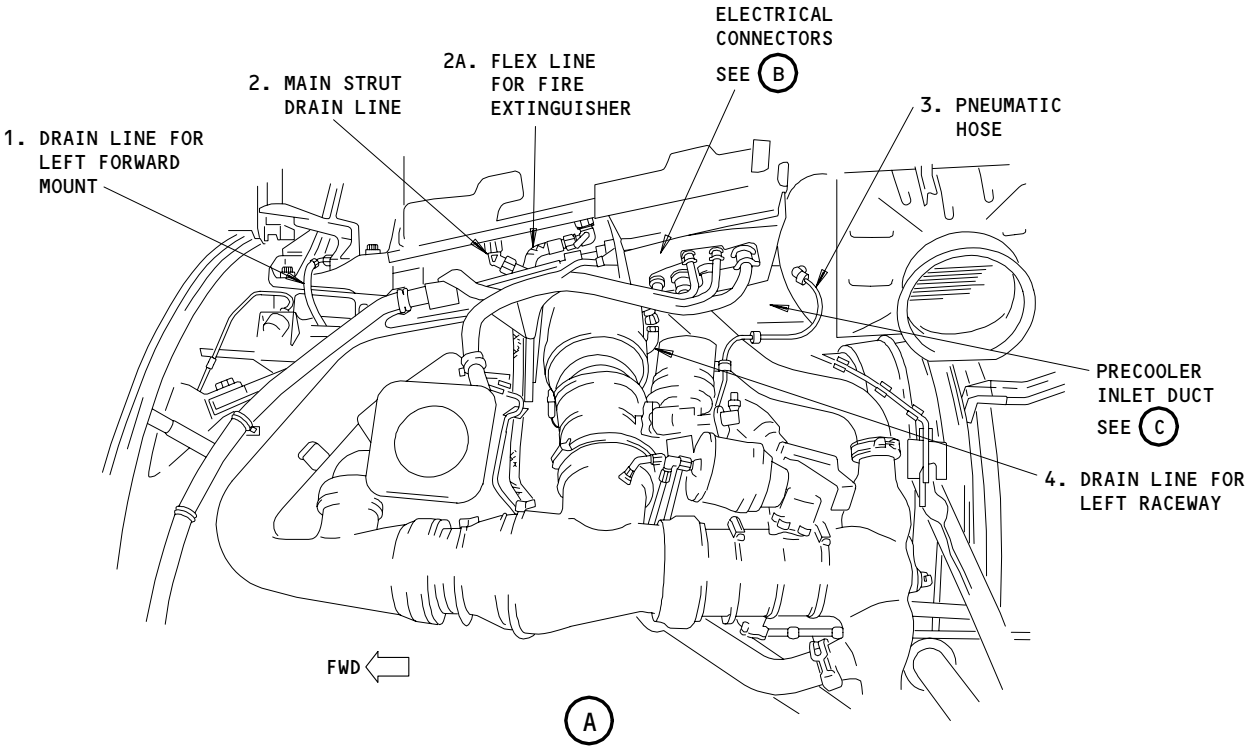
767 PW4000 ENGINE/STRUT DRAIN INSTALLATION INTERCHANGEABILITY

STRUT/ENGINE COMBINATION	PROP NO. VP832 AND PRIOR	PROP NO. RQ538 AND AFTER 1
PRIOR TO L/N 802 OR STRUT DRAIN FITTING 311T4631-1 (INCLUDES UNION MS21902J8 AND O-RING M83248-2-908) 	HOSE P/N: AS138-08N0095L	HOSE P/N: AS138-08N0095L
L/N 802 AND AFTER OR STRUT DRAIN FITTING 311T4631-2 	HOSE P/N: AS138-08N0086	HOSE P/N: AS136-08N0077

1 CORRESPONDS TO ENGINE SERIAL NUMBERS P727991-P727992, P727997-P727998, P727999-P728000, P729001-P729002, P729014-P729015, P729021-P729022, P729023-P719024, P729033-P719034, P729039-P729040, P729045-P729046.

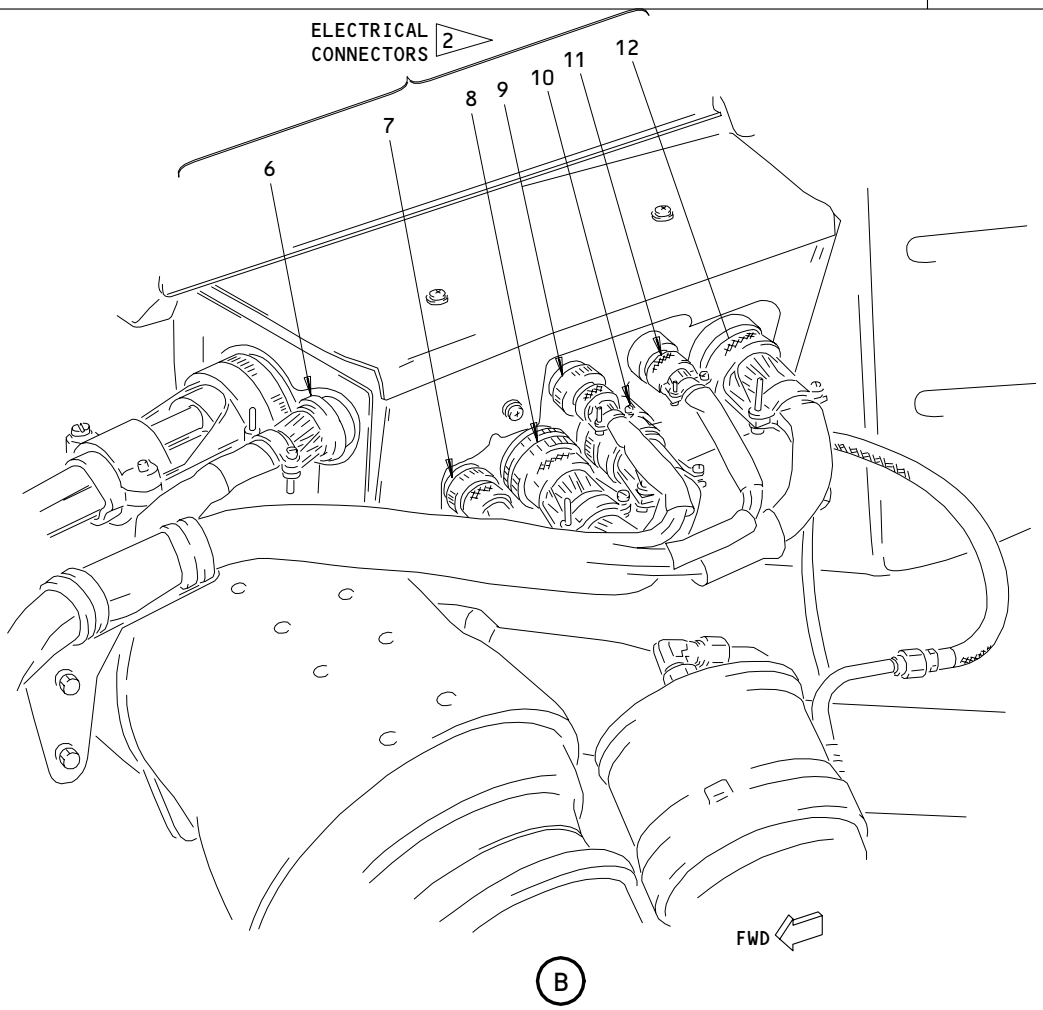
Power Plant Disconnect Locations (Right Side)
Figure 407 (Sheet 3)





1 MAKE SURE THE LOCK BOLT DOES NOT EXTEND BEYOND THE TOP OF THE DUCT INTO THE FAN COWL PANEL

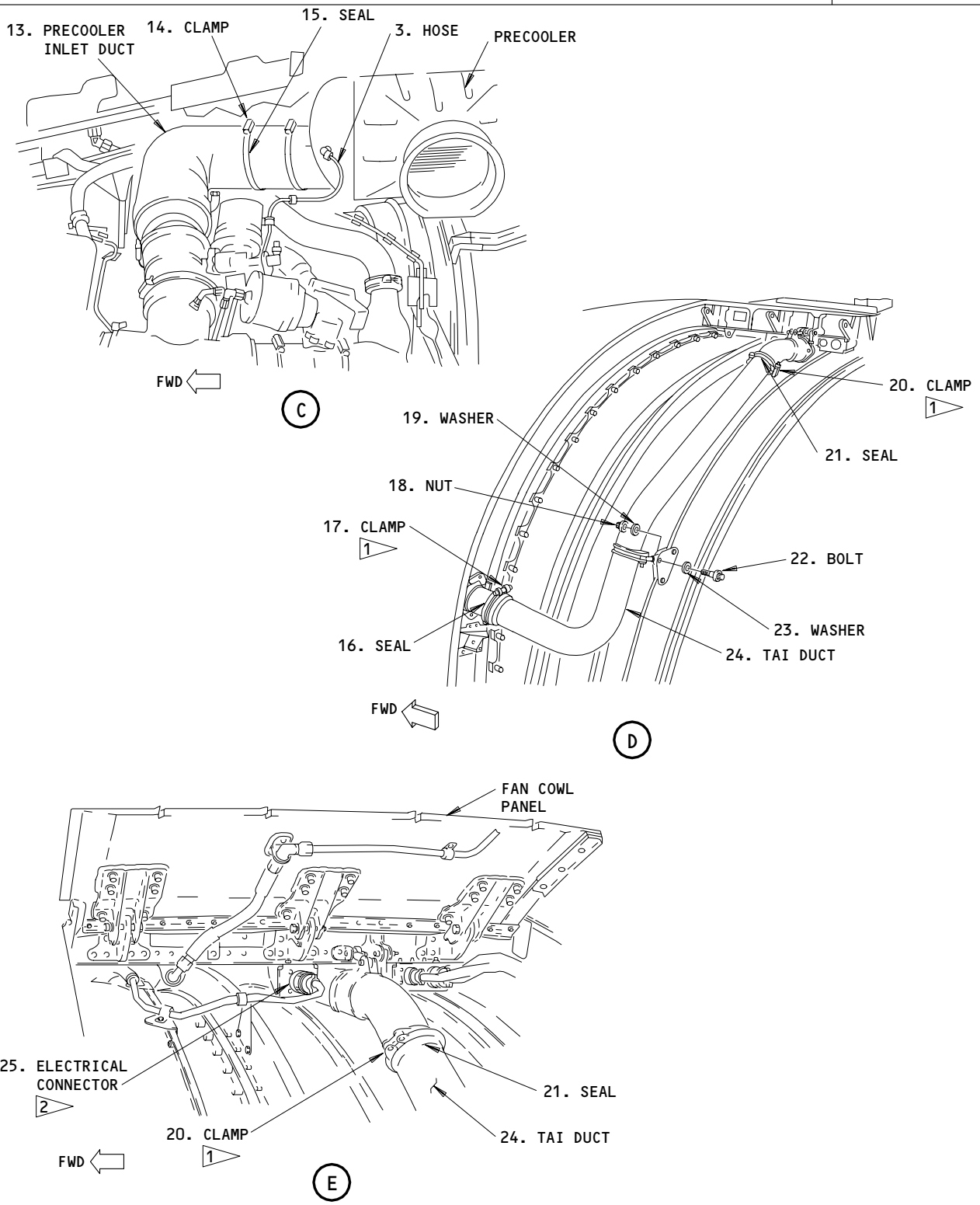
Power Plant Disconnect Locations (Left Side)
Figure 408 (Sheet 1)



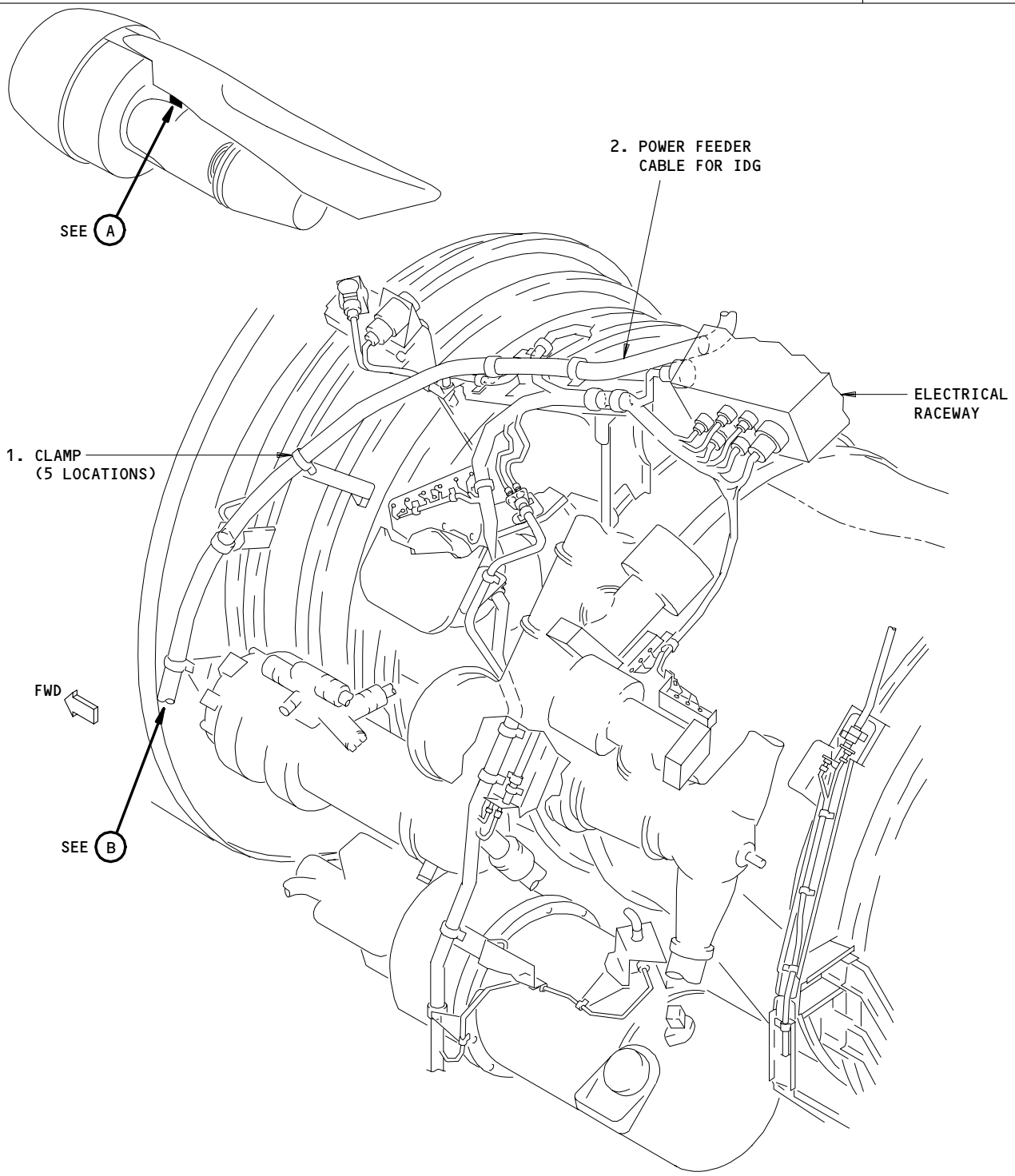
2

ELECTRICAL CONNECTORS IDENTIFICATION			
INDEX NO.	CONNECTOR PLUG	MATING RECEPTACLES STRUT LEFT	MATING RECEPTACLES STRUT RIGHT
6	D4230P	D4230J	D4220J
7	D4154P	D4154J	D4148J
8	D4208P	D4208J	D4258J
9	D4228P	D4228J	D4256J
10	D4216P	D4216J	D4266J
11	D4200P	D4200J	D4236J
12	D4232P	D4232J	D4240J
25	D8336P	D6420J	D6442J

Power Plant Disconnect Locations (Left Side)
Figure 408 (Sheet 2)

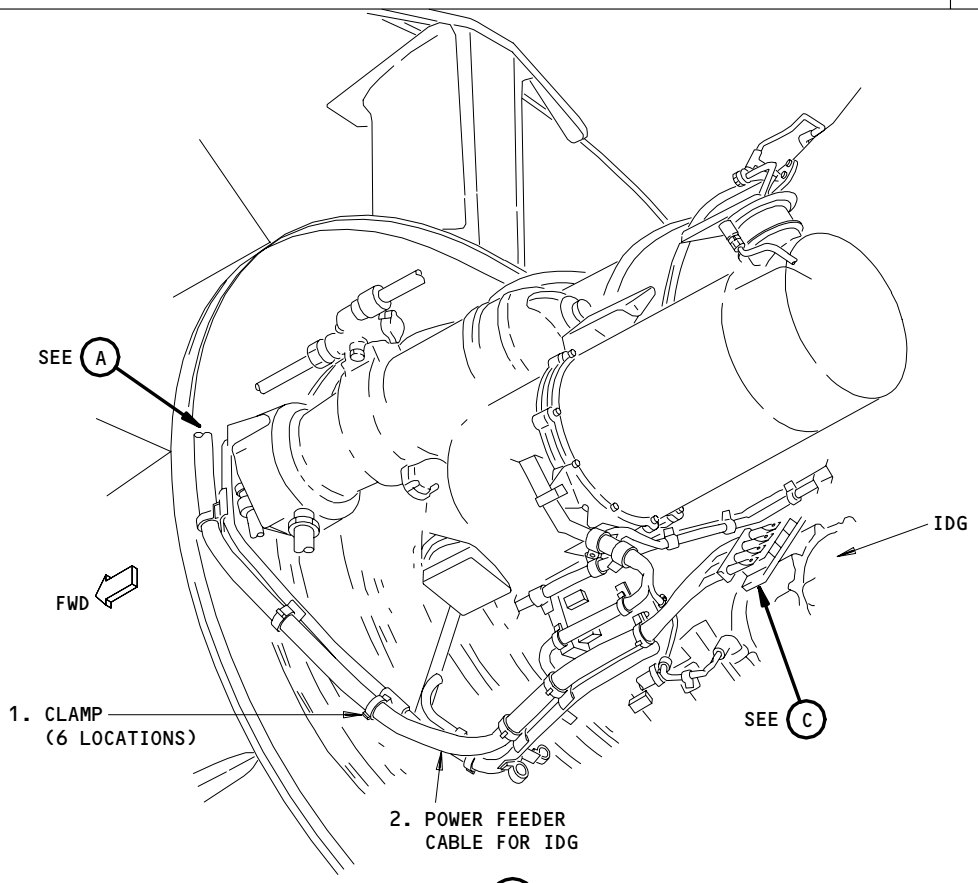


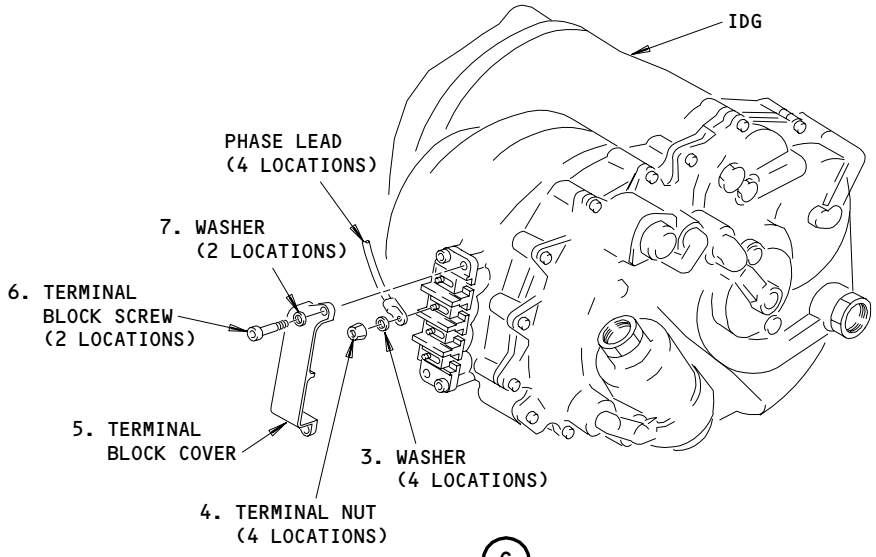
Power Plant Disconnect Locations (Left Side)
Figure 408 (Sheet 3)



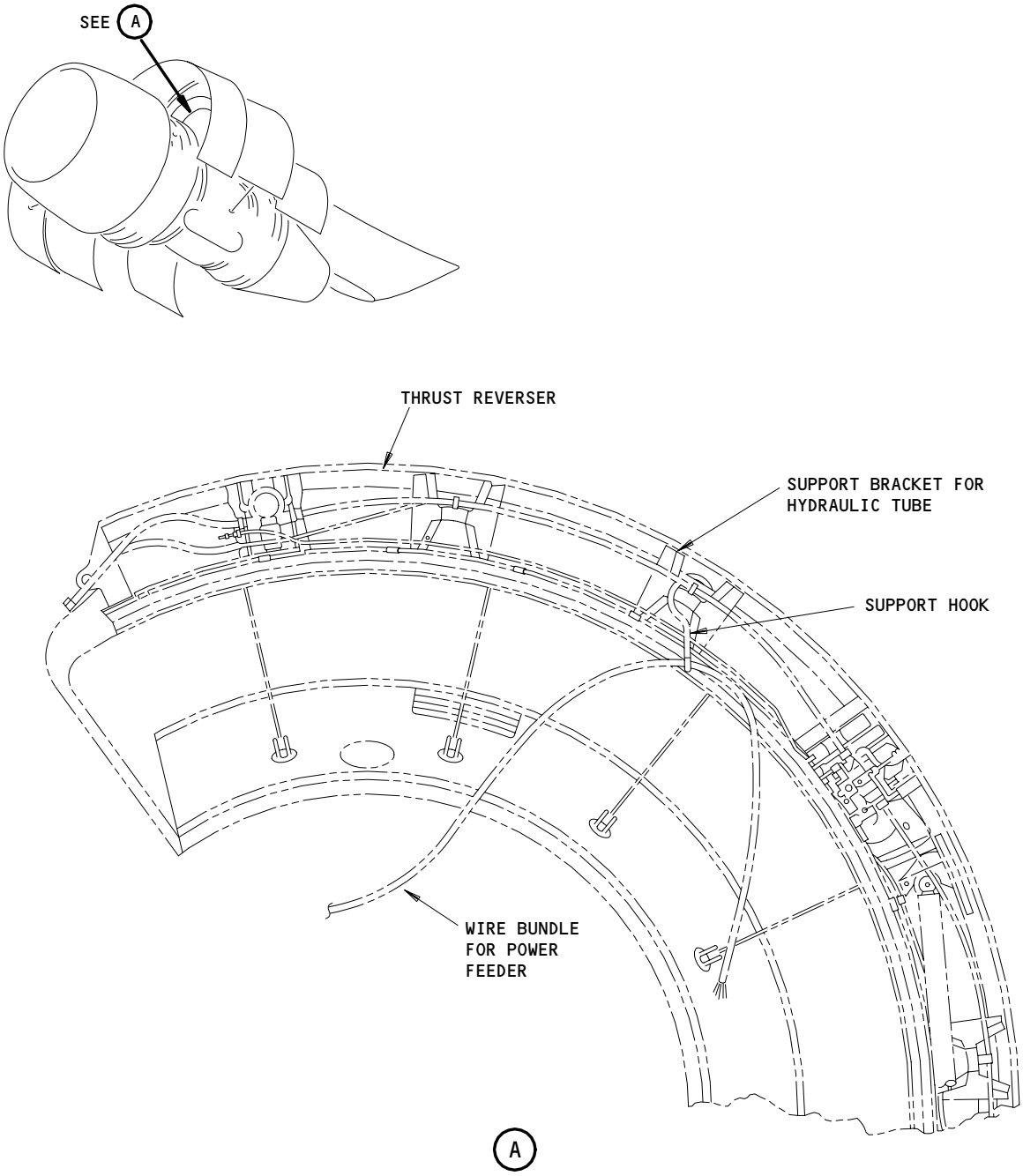
A

Power Feeder Wire Bundle Installation
Figure 409 (Sheet 1)

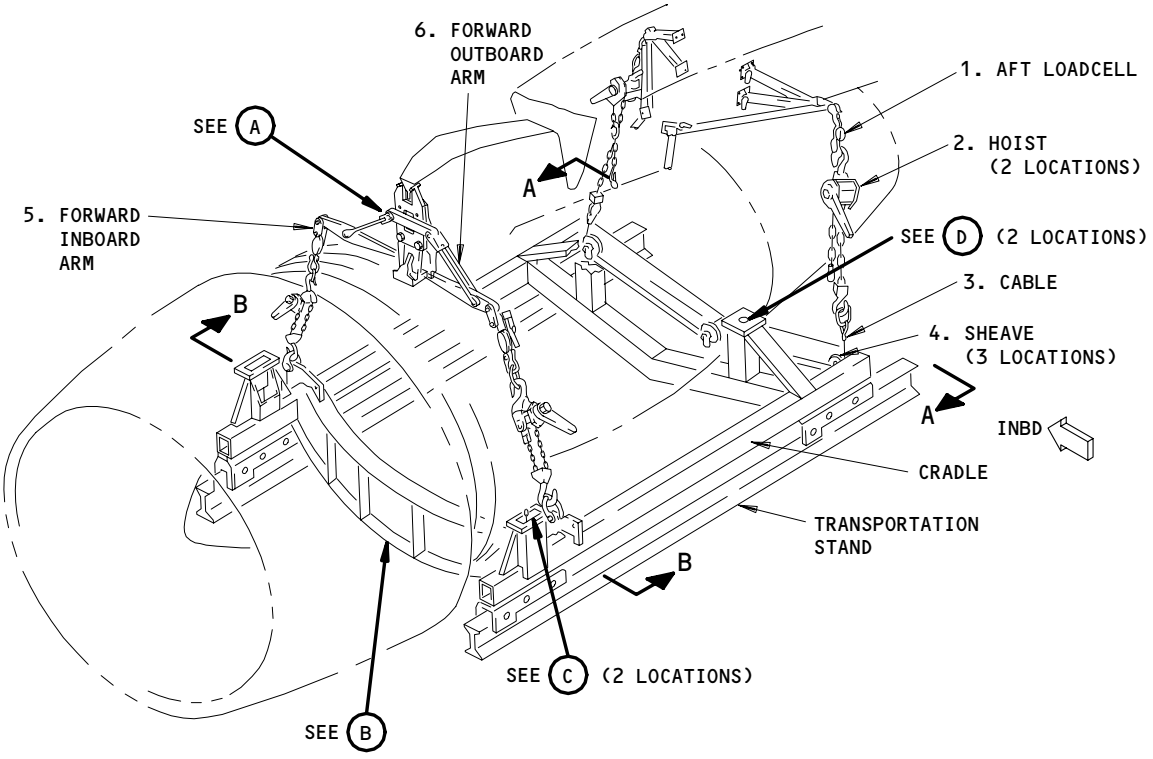


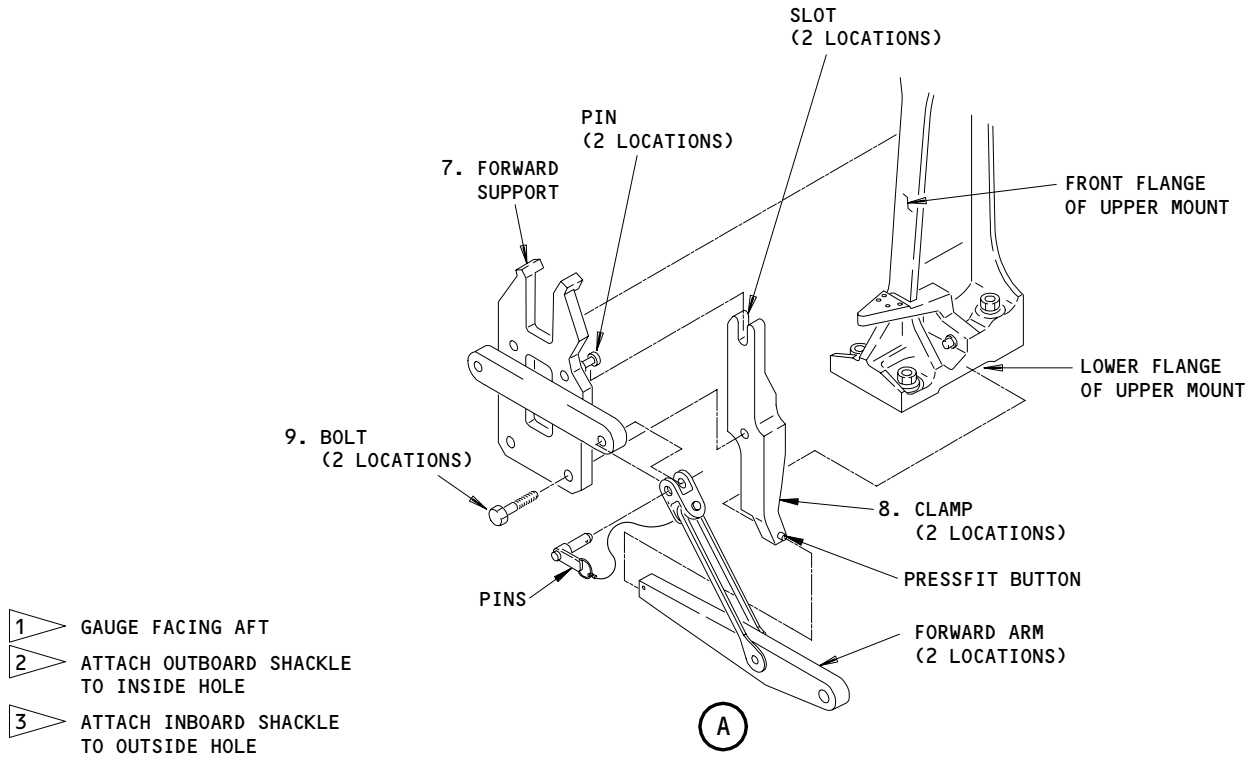


Power Feeder Wire Bundle Installation
Figure 409 (Sheet 2)

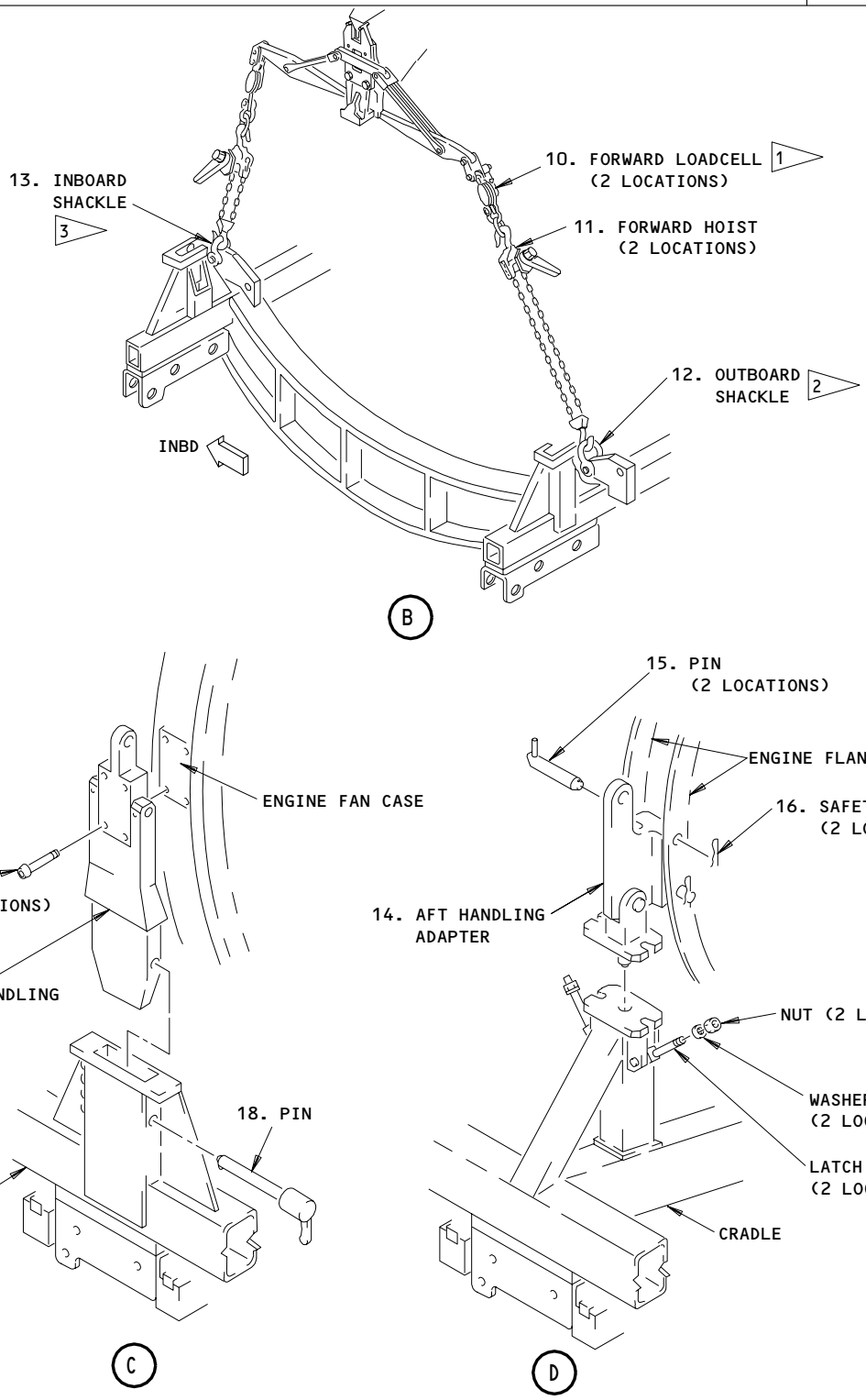


Power Feeder Wire Bundle Support Hook Installation
Figure 410

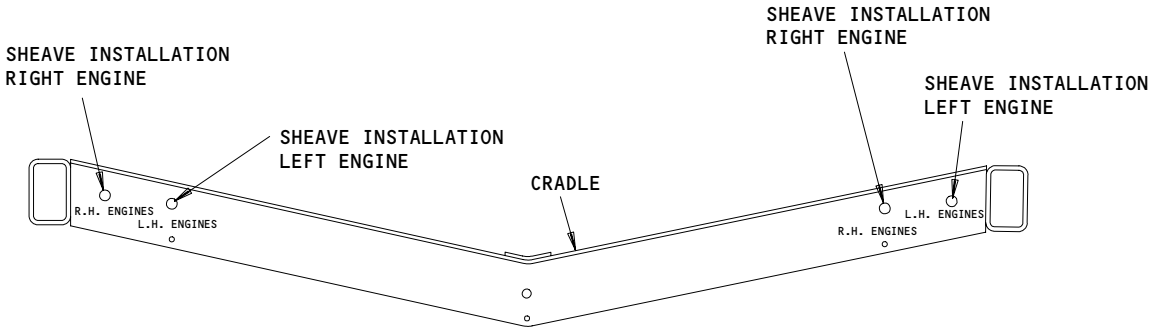




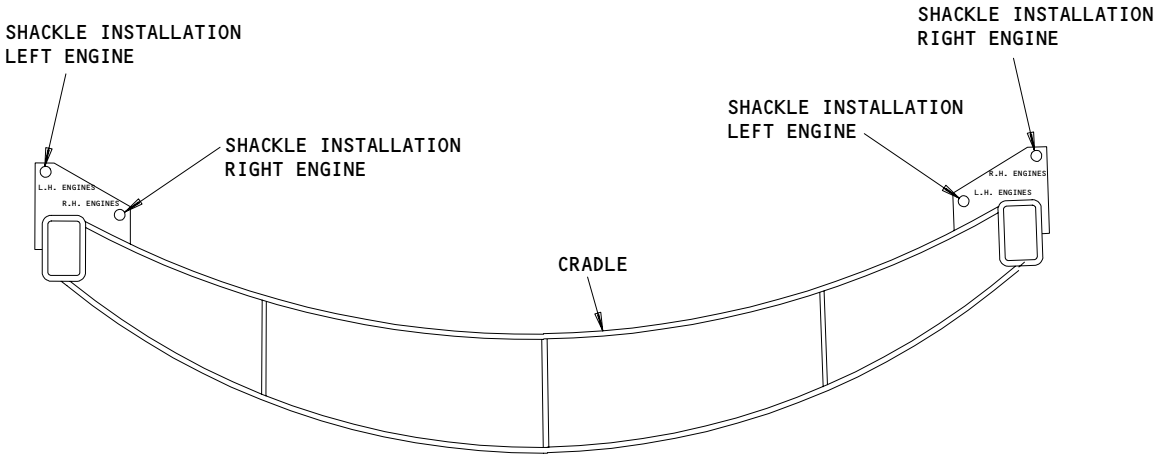
Bootstrap Equipment and Cradle Installation
Figure 411 (Sheet 1)



Bootstrap to Cradle Installation
Figure 411 (Sheet 2)

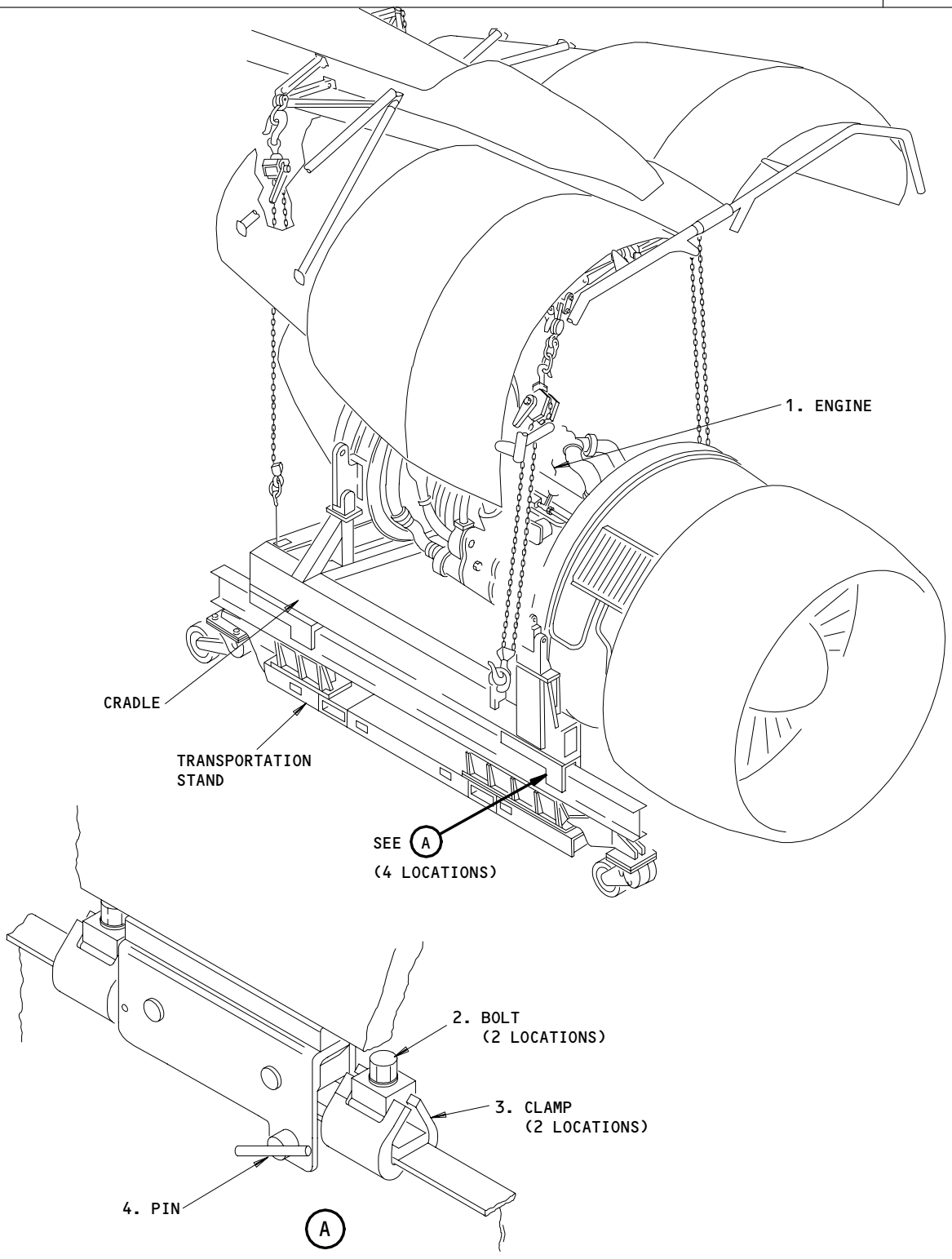


(VIEW IN THE FORWARD DIRECTION)
A-A

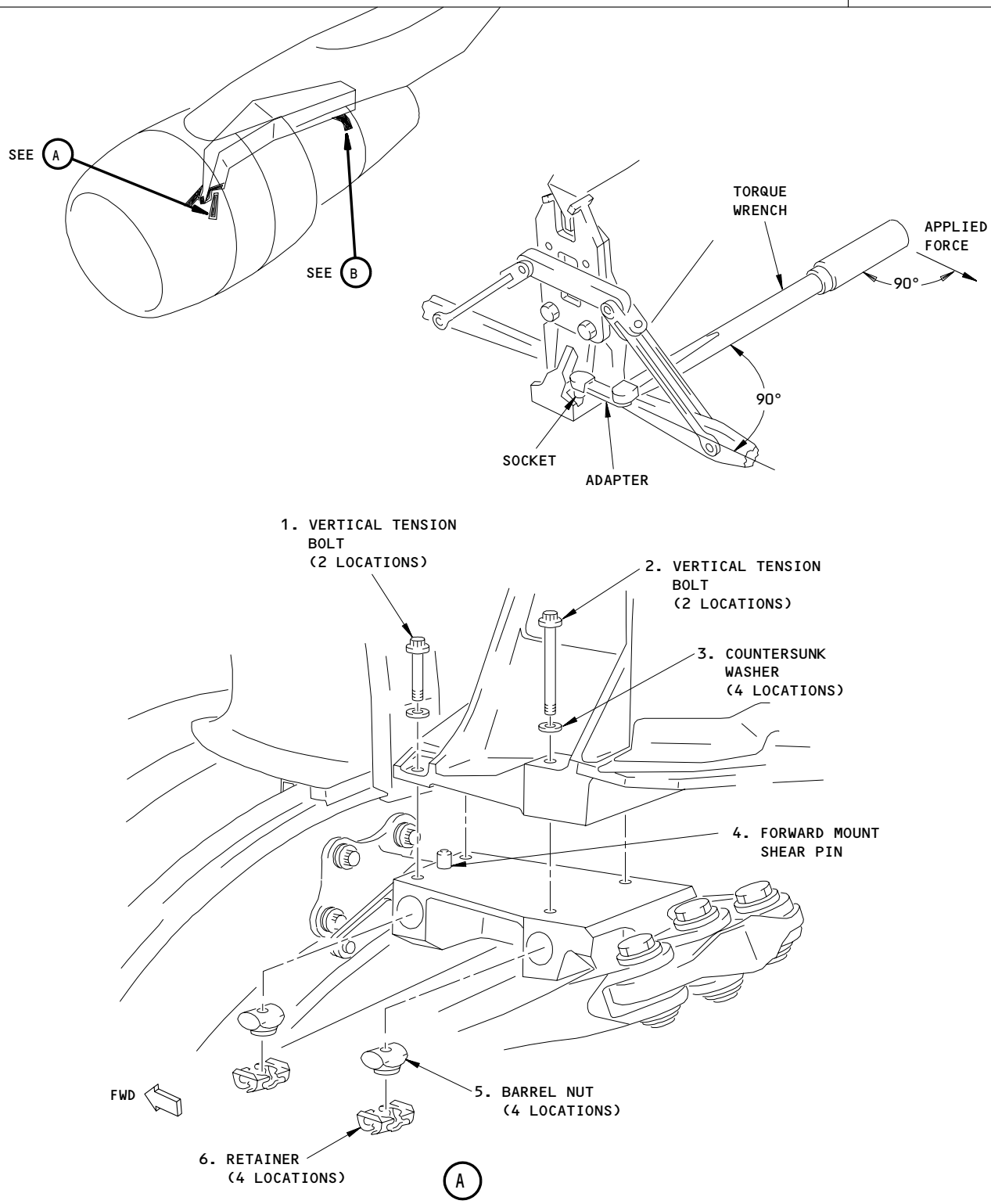


(VIEW IN THE AFT DIRECTION)
B-B

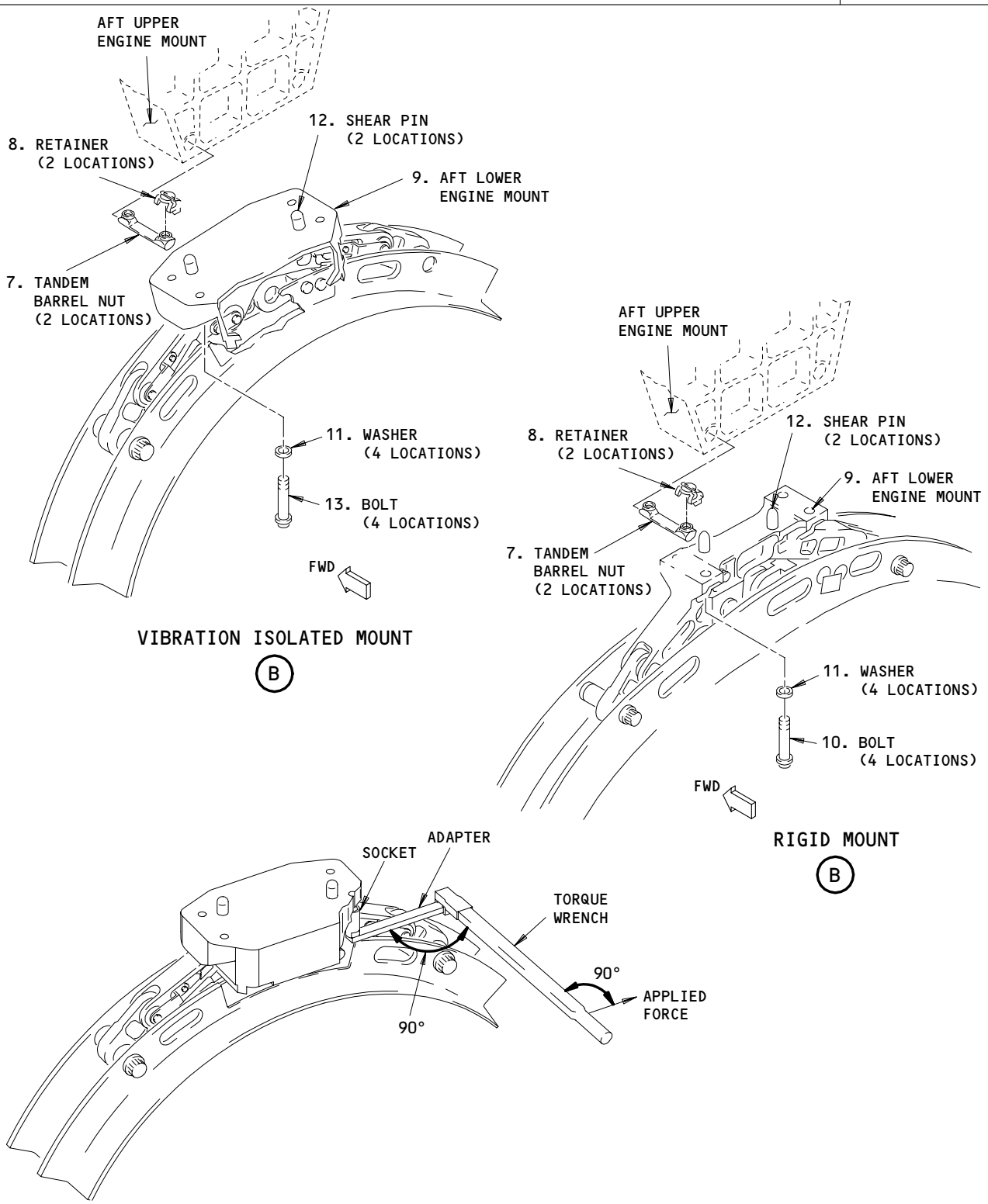
Bootstrap Equipment and Cradle Installation
Figure 411 (Sheet 3)



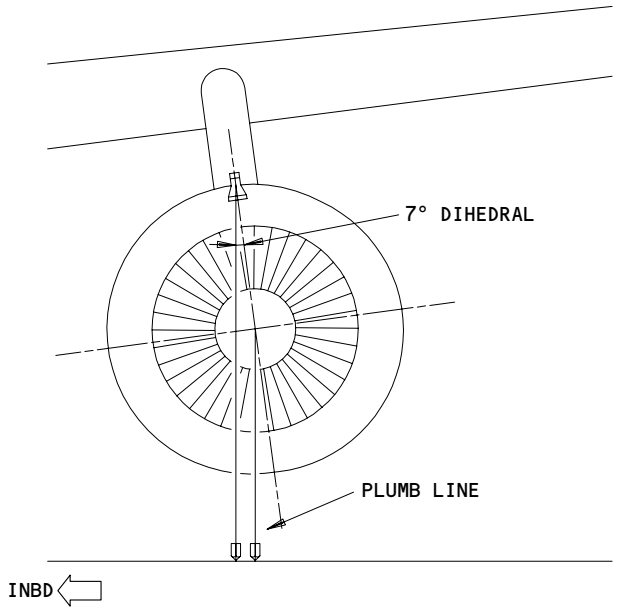
Engine to Cradle
Figure 412

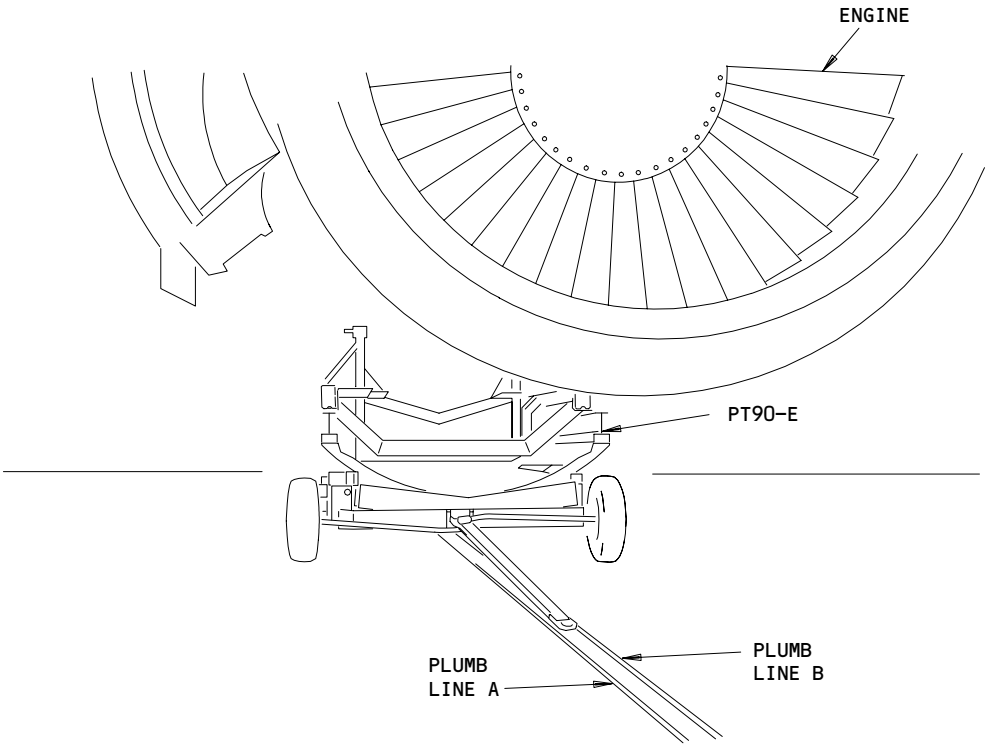


Forward and Aft Engine Mount Installation
Figure 413 (Sheet 1)

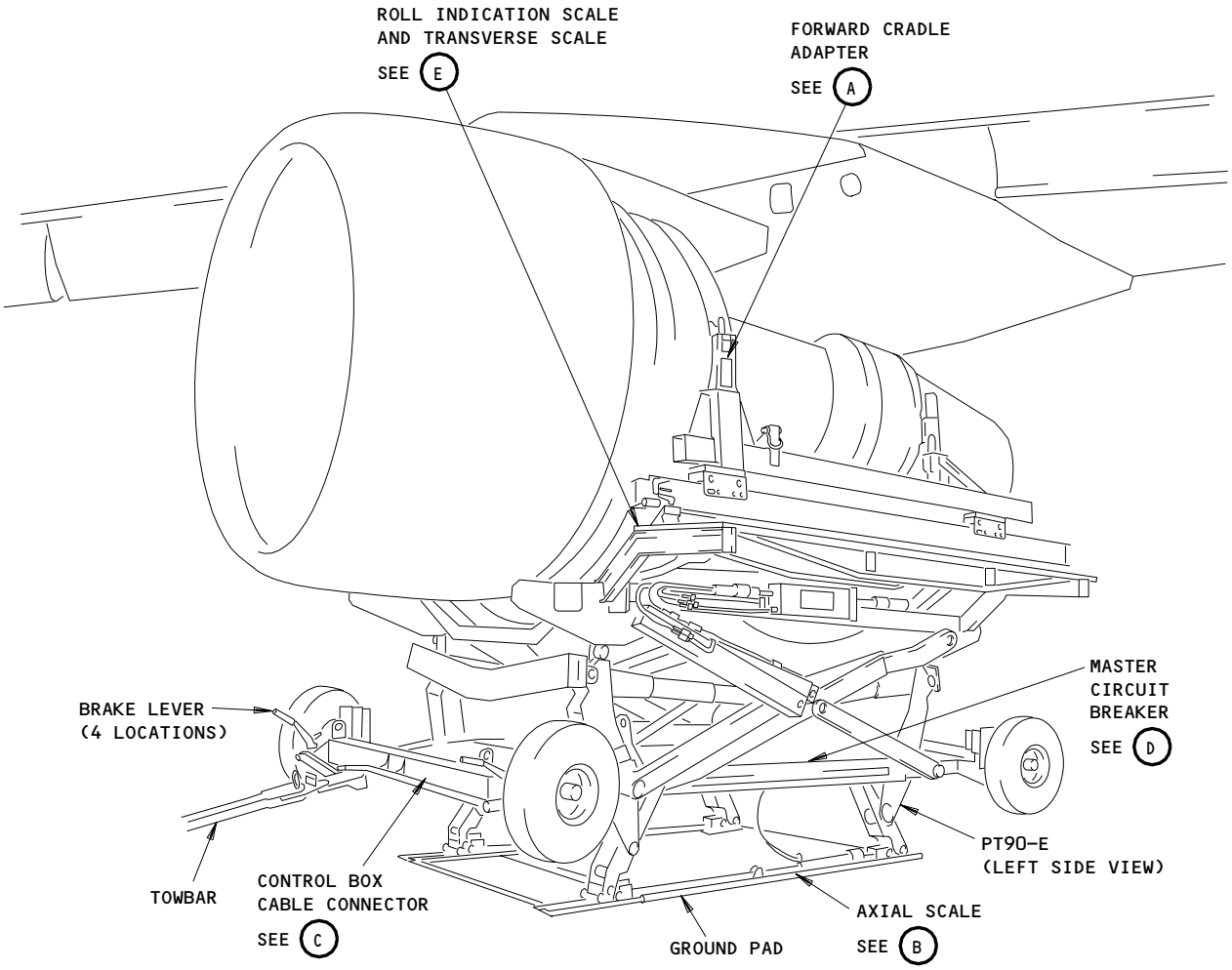


Forward and Aft Engine Mount Installation
Figure 413 (Sheet 2)

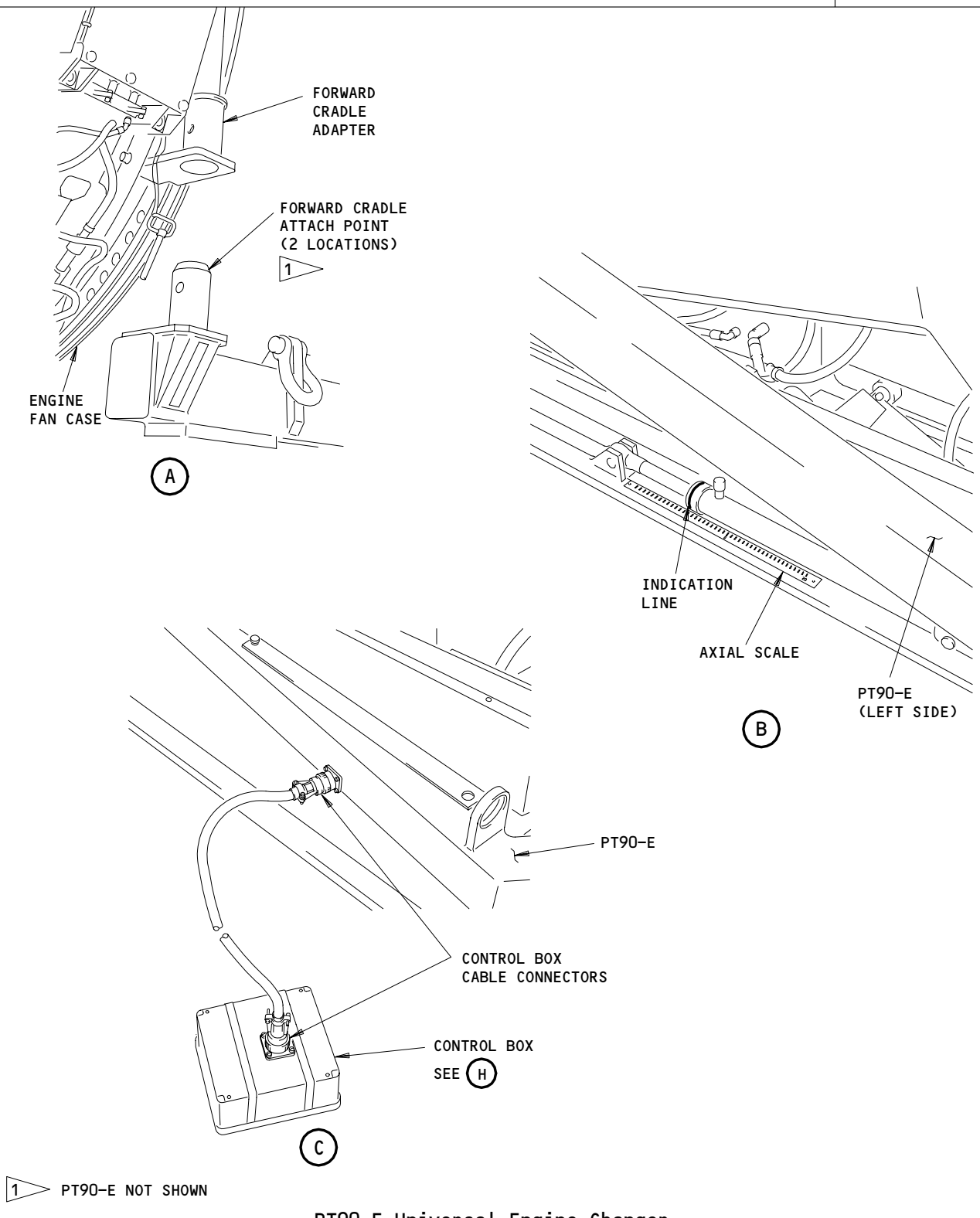




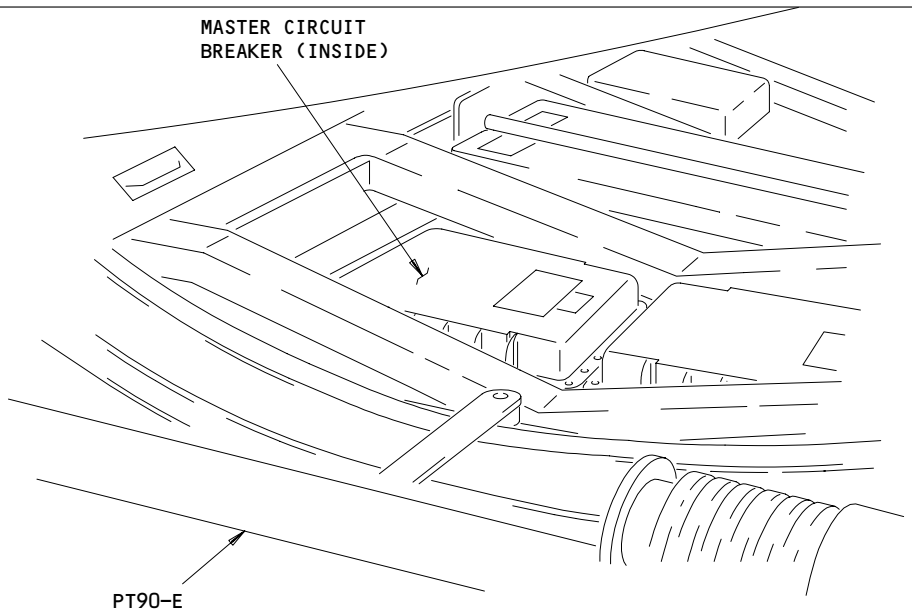
PT90-E Universal Engine Changer
Figure 414 (Sheet 1)



PT90-E Universal Engine Changer
Figure 414 (Sheet 2)

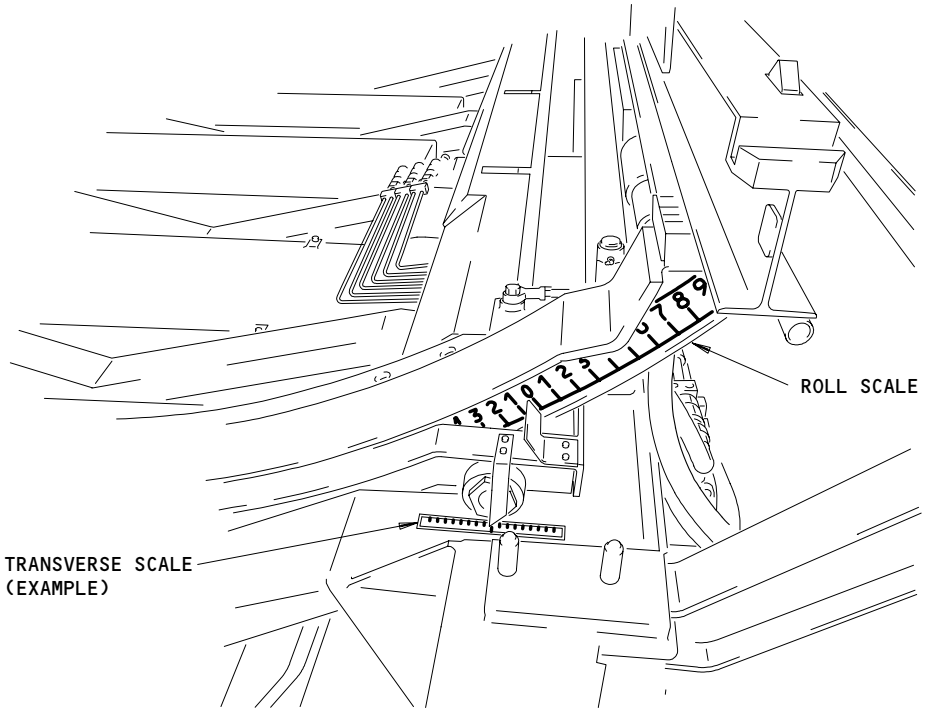


PT90-E Universal Engine Changer
Figure 414 (Sheet 3)



VIEW IN THE FORWARD DIRECTION

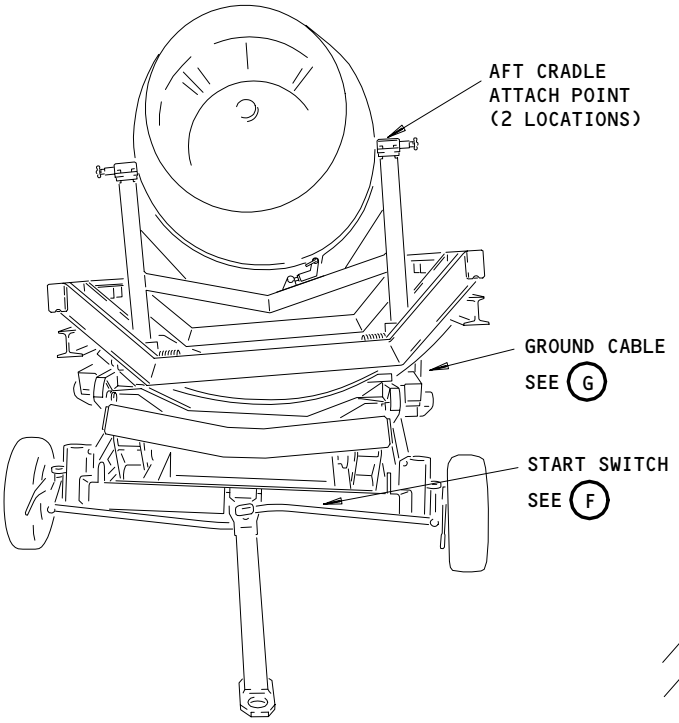
D



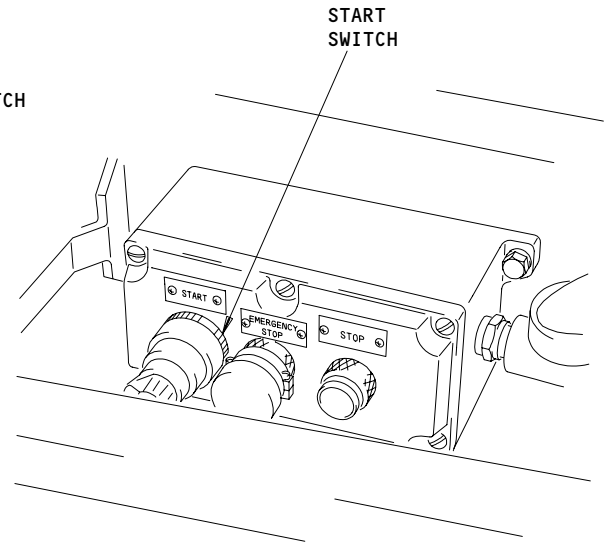
VIEW IN THE AFT DIRECTION

E

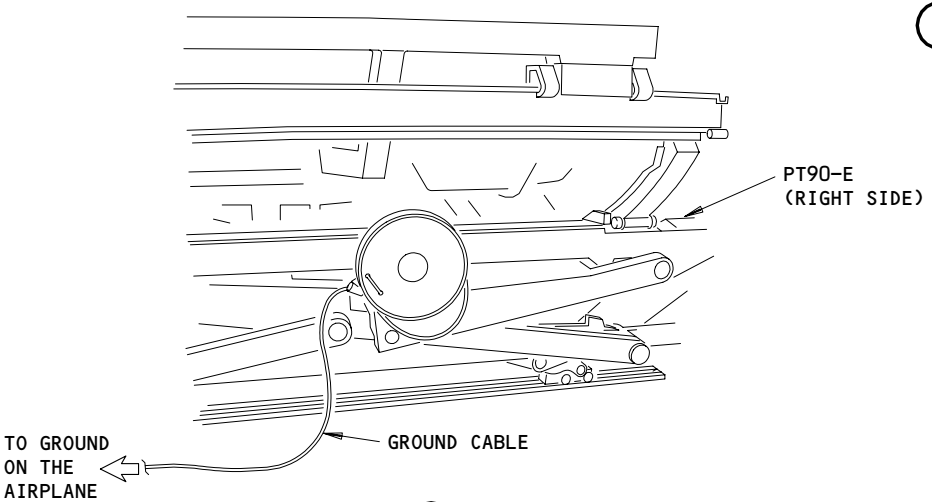
PT90-E Universal Engine Changer
Figure 414 (Sheet 4)



PT90-E
(VIEW IN THE FORWARD DIRECTION)

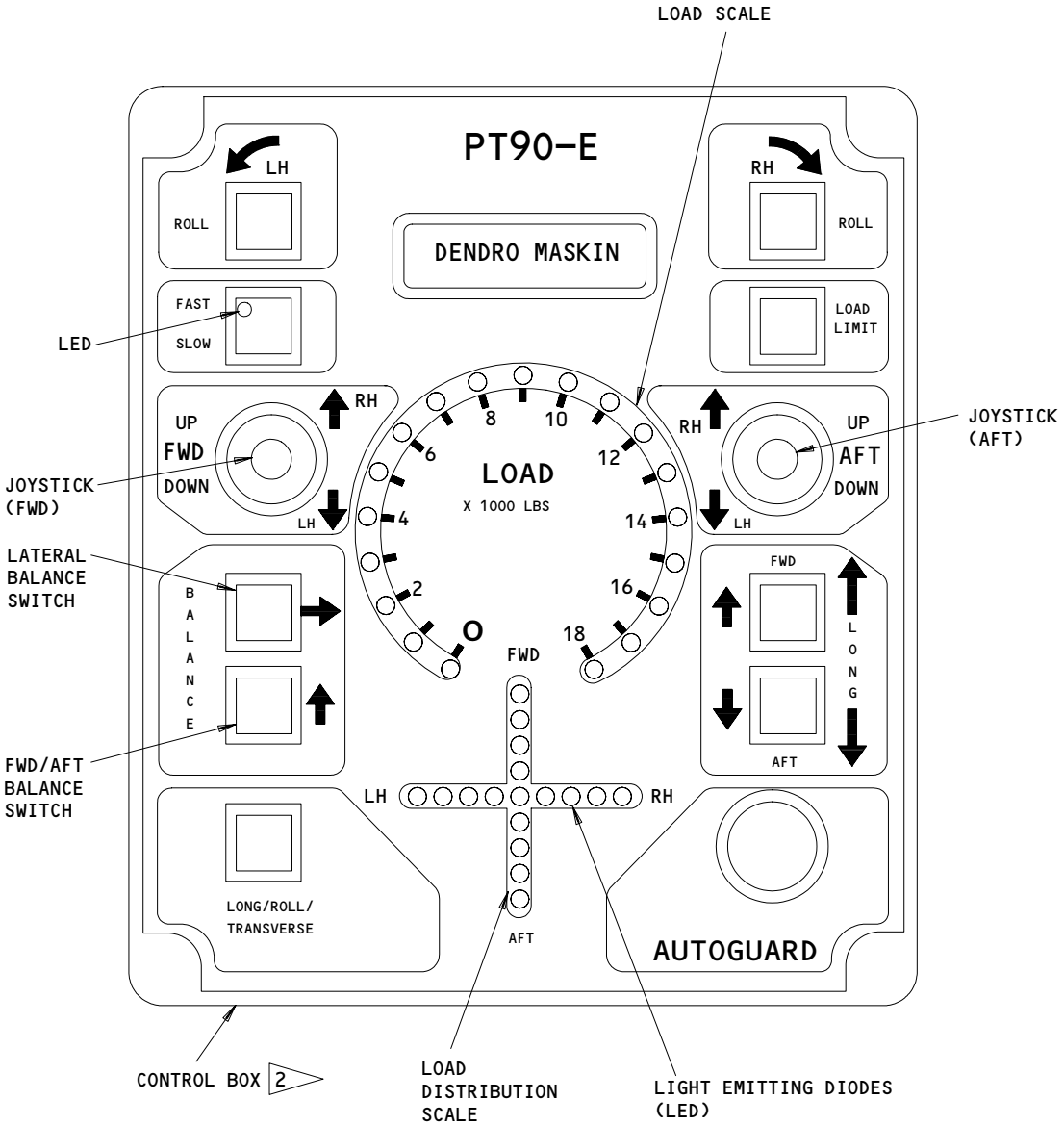


F



G

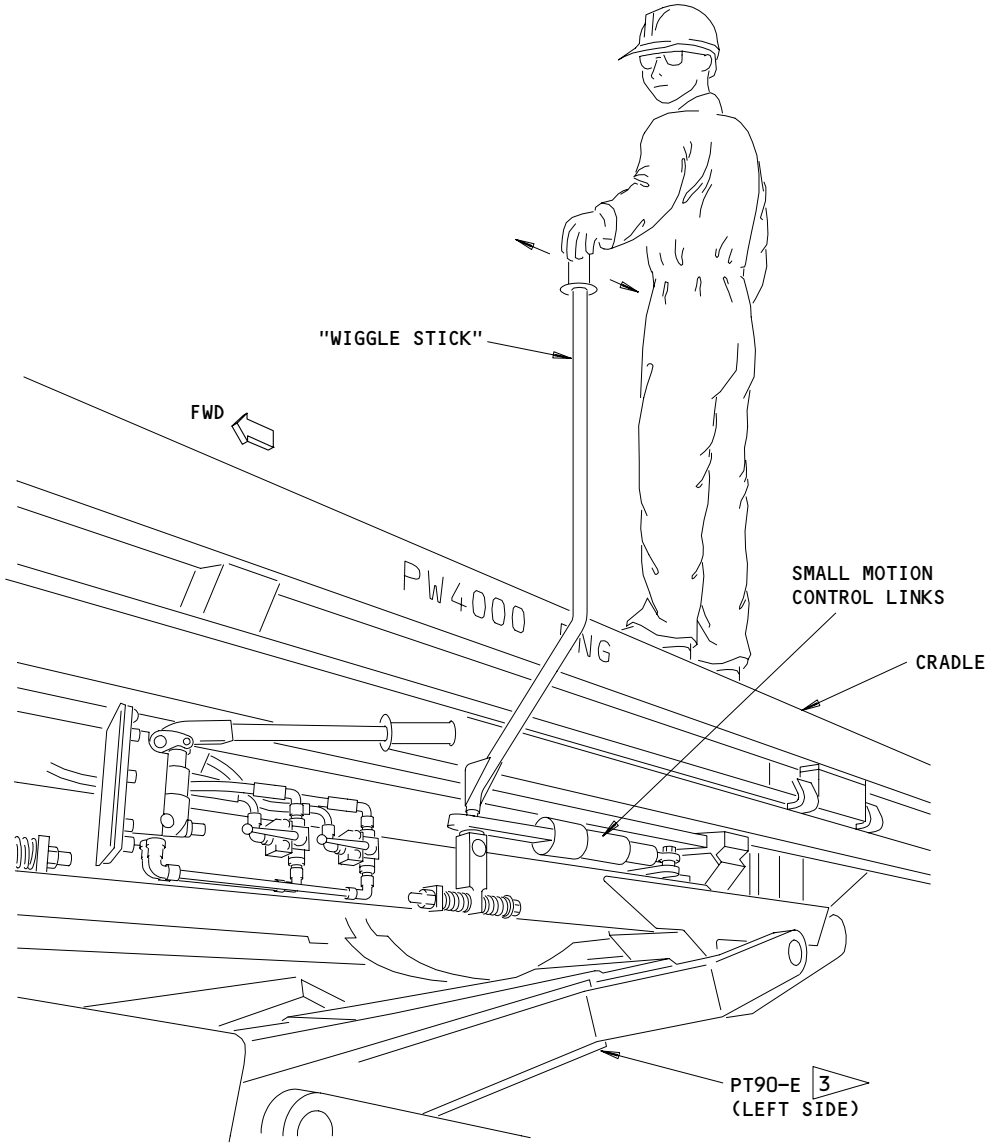
PT90-E Universal Engine Changer
Figure 414 (Sheet 5)



H

2 REFER TO THE DENDRO MASKIN PT90-E OPERATION AND MAINTENANCE MANUAL FOR DIRECTIONS ON HOW TO USE THE CONTROL BOX TO OPERATE THE HOIST CORRECTLY.

PT90-E Universal Engine Changer
Figure 414 (Sheet 6)



3 ENGINE NOT SHOWN FOR CLARITY

PT90-E Universal Engine Changer
Figure 414 (Sheet 7)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-R09
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGIN/STRUT	NOTE			012	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	POWER PLANT		ALL	4000

ZONES	ACCESS PANELS
410 420	413AL 414AR 415AL 416AR 417AL 418AR 423AL 424AR 425AL 426AR 427AL

MECH | INSP

MPD ITEM NUMBER

REPLACE THE POWER PLANT. N71-00-02-4B

NOTE: TASK CARDS 24-003-01 AND 36-005-01 TO BE ACCOMPLISHED AT ENGINE CHANGE.

THIS CARD IS NOT A SCHEDULED MAINTENANCE TASK. IT IS A COMPONENT CHANGE CARD AND IT IS PROVIDED FOR OPERATOR CONVENIENCE DURING UNSCHEDULED MAINTENANCE ACTIVITIES. SEE APPENDIX A OF THE 767 MAINTENANCE PLANNING DATA (MPD) DOCUMENT,D622T001, FOR A DESCRIPTION OF THE COMPONENT CHANGE CARDS.

1. Install the Power Plant With the Bootstrap Equipment

A. General

(1) You must not remove the caps from the tube ends, ducts and the electrical connectors until you connect each connection.

(2) You must not apply the forces more than necessary to lift the power plant, when the power plant is engaged with the strut. You can use the load cell to monitor the loads applied.

(3) You can attach the bootstrap components on the strut. The bootstrap components use a lever hoist in each of the four support legs. The adjustment of the lever hoists permits the power plant to turn in the pitch and roll directions while the power plant hangs. You can get the Pitch when you lift or lower the forward or aft hoists together. You can get the Roll when you use the forward hoists only.

(4) When you use the bootstrap components, the level of the airplane must be zero ± 1/4 degree in the pitch and roll directions.

B. Equipment

(1) A71030-32 Fan Cowl Hold-Open Equipment - (40 knots) (optional)

(2) A71032-14 Core Cowl Hold-Open Equipment - (40 knots) (optional)

(3) A78001-31 Thrust Reverser Hold-Open Equipment - (40 knots)

(4) G71023-52 Hold Open Equipment - Fan and Core Cowls - (20 knots) (optional)

(5) A71001-185 Bootstrap Equipment

(6) A71003-25 Torque Equipment - (all rigid engine mounts)

(7) A71003-41 Torque Equipment - (used only on the aft engine mounts with the vibration isolators)

(8) A71006-79 Cradle

(9) 140059-5 Stand - Shipping, engine, air/truck transportation, Stanley Aviation (Recommended).
110059-501 Transportation Stand,
Stanley Avaiation (Alternative)

(10) Protection pads - commercially available

C. Consumable Materials

(1) D00010 Antiseize Compound - Bostick Never-Seez Pure Nickel Special

D. References

(1) AMM 26-11-02/201, Engine Fire and Overheat Detector Element

(2) AMM 70-50-00/201, Standard Torque Values

(3) AMM 71-11-04/201, Fan Cowl Panels

(4) AMM 71-11-06/201, Core Cowl Panels

(5) AMM 71-21-00/601, Engine Mounts

(6) AMM 70-11-06/201, Fluorescent Penetrant Inspection

(7) AMM 78-31-00/201, Thrust Reverser System

E. Access

(1) Location Zone

411	Left Engine
421	Right Engine

(2) Access Panels

413AL	Fan Cowl Panel, Left Engine
414AR	Fan Cowl Panel, Left Engine
415AL	Fan Reverser, Left Engine
416AR	Fan Reverser, Left Engine
417AL	Core Cowl, Left Engine
418AR	Core Cowl, Left Engine
423AL	Fan Cowl Panel, Right Engine
424AR	Fan Cowl Panel, Right Engine
425AL	Fan Reverser, Right Engine
426AR	Fan Reverser, Right Engine
427AL	Core Cowl, Right Engine
428AR	Core Cowl, Right Engine

F. Prepare the Airplane for the Power Plant Installation

WARNING: INSTALLATION OF A RING CASE CONFIGURATION ENGINE IS NOT ALLOWED ON AN AIRPLANE THAT HAS A SEGMENTED CASE ENGINE WITH A P/N 791100-14-102 EEC INSTALLED. IF YOU DO YOU CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO THE AIRPLANE.

(1) If the engine being installed is a segmented case configuration engine (pre SB PW4ENG 72-755 or production equivalent) check the P/N of the EEC installed on this engine. If the EEC P/N is 791100-14-102 (P&W P/N 54D043), you must ensure that the other engine installed on the airplane is not a ring case configuration engine (post P&W SB PW4ENG 72-755 or production equivalent).

MECH | INSP

CAUTION: DO NOT INSTALL AN ENGINE WITH A VIBRATION-ISOLATED MOUNT UNLESS YOU VERIFY THE AIRPLANE MOUNT CONFIGURATION. YOU CANNOT ALWAYS INSTALL A VIBRATION-ISOLATED ENGINE MOUNT ON AN AIRPLANE THAT HAS A CONFIGURATION FOR A RIGID ENGINE MOUNT. YOU CAN INSTALL AN ENGINE WITH A RIGID ENGINE MOUNT ON AN AIRPLANE THAT HAS THE CONFIGURATION FOR A VIBRATION-ISOLATED MOUNT. IF YOU INSTALL THE INCORRECT ENGINE MOUNT, THE ENGINE MOUNT CAN CAUSE DAMAGE TO THE ENGINE, THE CORE COWL, OR THE STRUT.

(2) SAS 050, 051, 150-154;
MTH 275, 276;
Make sure the correct aft engine mount is on the engine (AMM 71-21-02/401).

NOTE: You can install an engine with a vibration-isolated mount on an airplane with the configuration for a rigid mount if: The airplane is not in the group above or the airplane is in the group above and was reworked to SB 71-48. You can install an engine with a rigid mount on an airplane with a configuration for a vibration-isolated mount.

(3) Make sure the airplane is in the same configuration as the power plant removal (Refer to the Prepare the Power Plant Removal).

(4) Make sure the card for the engine fire/overheat detection agrees with the fire detector elements on the replacement power plant (AMM 26-11-02/201).

G. Prepare the Power Plant for Installation

(1) Get new or examined vertical tension bolts (1, 2, 10, 13, Fig. 413) or make an inspection of the used bolts with the fluorescent penetrant (AMM 70-11-06/201).

(a) Make sure you can apply sufficient torque on the threads of the bolts (1, 2, 10, 13) to lock them when you use a satisfactory nut.

(b) Discard all bolts with damage that you can feel with a fingernail.

(c) Discard all bolts with damage that you can see the damage.

MECH | INSP

(2) Make sure the self-locking (run-on) torque of the tandem barrel nuts (7) is a minimum of 70 pound-inches (7.9 newton-meters) and a maximum of 600 pound-inches (67.8 newton-meters) (Fig. 413).

NOTE: These torque values are for barrel nuts that are previously used or bench-tested. New barrel nuts must be bench-tested to a minimum torque value of 135 pound-inches

(a) If the torque value for the tandem barrel nut is not in the minimum value, replace the tandem barrel nut.

1) Examine the torque value for the tandem barrel nuts again.

(3) Make sure the self-locking (run-on) torque of the barrel nuts (5) is a minimum of 70 pound-inches (7.9 newton-meters) and a maximum of 600 pound-inches (67.8 newton-meters) (Fig. 413).

NOTE: These torque values are for barrel nuts that are previously used or bench-tested. New barrel nuts must be bench-tested to a minimum torque value of 135 pound-inches

(a) If the torque value for the barrel nut is not in the minimum value, replace the tandem barrel nut.

1) Examine the torque value for the barrel nuts again.

(4) Examine the engine mounts (AMM 71-21-00/601).

(5) Make sure the surfaces of the forward and aft engine mounts are free of the oil, grease, and other unwanted material.

(6) Apply the antiseize compound to the shear pins (4, 12, Fig. 413).

(7) Do a check on the wire bundles in the support beam on the fan cowl.

(a) Make sure the wire bundle did not wear in a large area.

(b) Make sure the wire bundle is attached correctly.

(8) Remove the core cowl panels or install the hold-open equipment (A71032-14) for the core cowl panels as follows:

NOTE: The installation of the hold-open equipment is optional to the removal of the core cowl panels.

MECH | INSP

(a) If you use the bootstrap equipment (Fig. 402), do as follows:

1) Install the aft bootstrap components (Fig. 401) as follows:

a) Put the protection pads on the turbine exhaust sleeve (one on each side).

b) Remove the bolts (1, 2, 3, 4, 5, 6) from the two sides of the strut.

c) Install the top and lower aft brackets (12, 13) on the two sides of the strut.

d) Install the forward bracket (14) on the two sides of the strut.

e) Install the aft inboard arm (11) on the top and lower aft brackets (12, 13).

WARNING: INSTALL THE LONGER OUTBOARD ARM ON THE OUTBOARD BRACKETS. IF YOU INSTALL THE BOOTSTRAP ARMS INCORRECTLY, THE BOOTSTRAP CAN FAIL. THIS CAN CAUSE INJURY TO PERSONS.

f) Install the aft outboard arm (11) on the top and lower aft brackets (12, 13).

g) Install the inboard forward brace (15) on the forward bracket (14) and the aft inboard arm (11).

h) Install the outboard brace (15) on the forward bracket (14) and the aft outboard arm (11).

2) Remove the screws (3) from the core cowl panels.

3) Attach the pads (7) to the core cowl with the screws (6).

4) Attach the braces (1) to the pads (7) with the bolts (5) and washers (4).

5) Open the core cowl panels (Ref 71-11-06/201) and attach the braces (1) with the pins (2) to the forward bracket (14, Fig. 401).

6) Install the hold-open rods to the bracket on the core cowl panel.

(b) If you use the hold-open equipment (G71023) for the fan and core cowl, go to the step that follows which installs the hold-open equipment (G71023).

(9) If you did not remove the fan cowl panels, install the hold-open equipment (A71030-32) for the fan cowl panels as follows:

(a) If you use the hold-open equipment for the fan cowl panels (Fig. 403), do as follows:

1) Open the fan cowl panels (AMM 71-11-04/201).

2) Assemble the hold-open equipment (1) on the ground.

3) Put the hold-open equipment (1) on the forward edge of the fan cowl panels.

4) Tighten the screw clamps (2).

5) Make sure the hold-open equipment (A71030-32) does not touch the support structure for the fan cowl.

6) Install the hold-open rods to the stow bracket on the fan cowl panels.

(b) If you use the hold-open equipment (G71023) for the fan and core cowl panels, go to the step that follow which installs the hold-open equipment (G71023).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 WHEN YOU OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(10) Open the thrust reversers (AMM 78-31-00/201).

(11) Install the hold-open equipment (A78001) for the thrust reversers (Fig. 404) as follows:

(a) Put the actuator lock (2) along the actuator rod (5).

(b) Make sure the lock yoke (7) is against the bolt (6) that attaches the actuator rod (5).

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(c) Make sure the lock channel (4) is against the actuator cylinder.

(d) Put the channel clamp (3) around the actuator rod (5).

(e) Tighten the screw (8) to attach the channel clamp (3) to the actuator rod (5).

(f) Lightly close the actuator (1).

NOTE: When you lightly close the actuator, the load moves from the actuator to the actuator lock (2).

(g) Disengage the hold-open rod for the thrust reverser from the support.

(h) Install the hold-open rod and the support to its stowage points.

(12) If you use the hold-open equipment (G71023) for the fan and core cowl (Fig. 405), do as follows:

(a) Install the thrust reverser tube and attached parts on the thrust reversers (View B or E).

1) Engage the hook on the thrust reverser tube to the loop on the thrust reverser.

NOTE: Make sure the pin on the thrust reverser engages the pin hole on the thrust reverser tube. Or make sure the pin on the thrust reverser tube engages the pin hole on the thrust reverser.

2) Engage the loop on the thrust reverser tube to the hook on the thrust reverser.

NOTE: Make sure the pin on the thrust reverser or on the thrust reverser tube engages the pin hole on its mate.

3) Tighten the knobs on the thrust reverser tube to attach the tube to the thrust reverser.

(b) Install the forward tube assembly on the fan cowl panel (View A or D).

1) Turn the forward tube to engage the tube end to the thrust reverser tube.

2) For the left fan cowl panel, do as follows:

a) Engage the hook on the left fan cowl tube to the loops on the fan cowl panel.

NOTE: Make sure the pins on the fan cowl panel engage the pin holes on the fan cowl tube.

b) Tighten the knobs on the fan cowl tube to attach the tube to the fan cowl panel.

3) For the right fan cowl panel, do as follows:

a) Engage the hooks on the fan cowl panel to the loops on the right fan cowl panel.

NOTE: Make sure the pins on the fan cowl tube engage the pin holes on the fan cowl panel.

b) Close the fan cowl latch.

c) Tighten the knobs on the fan cowl tube to attach the tube to the fan cowl panel.

4) Put the lockpin into the pin hole on the thrust reverser tube.

5) Install the hold-open rods on the fan cowl panel to the stow bracket on the fan cowl panel.

(c) Install the aft tube assembly on the core cowl panel (View C and F).

1) For the left core cowl, put the attachment block into the loop of the core cowl panel.

NOTE: Make sure the pins on the attachment block engage the pin holes on the core cowl panel.

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a) Put a pin in the lockhole into the attachment block to attach the core cowl attachment to the core cowl panel.

2) For the right core cowl, install the attachment block on the cowl latch as follows:

a) Put the loop of the attachment block into the core cowl latch.

NOTE: Make sure the pins on the attachment block engage the pin holes on the core cowl panel.

b) Close the core cowl latch.

3) Put the aft tube into the thrust reverser tube.

4) Turn the aft tube to install the other end of the tube on the attachment block.

5) Put the lockpin into the pin hole on the thrust reverser tube.

6) Put the pin into the aft tube and the attachment block.

7) Install the hold-open rods on the core cowl panel to the stow bracket on the core cowl panel.

H. Install the Power Plant

CAUTION: MAKE SURE THAT THE ENGINE CONFIGURATION AND THE ENGINE DESIGNATION ON THE ENGINE IDENTIFICATION PLATE, INSTALLED ON FLANGE C ON THE FAN CASE, AGREE WITH EACH OTHER.

(1) Install the aft bootstrap components (Fig. 401) as follows:

(a) Put the protection pads on the turbine exhaust sleeve (one on each side).

(b) Remove the bolts (1, 2, 3, 4, 5, 6) from the two sides of the strut.

(c) Install the top and lower aft brackets (12, 13) on the two sides of the strut.

(d) Install the forward bracket (14) on the two sides of the strut.

(e) Install the aft inboard arm (11) on the top and lower aft brackets (12, 13).

WARNING: INSTALL THE LONGER OUTBOARD ARM ON THE OUTBOARD BRACKETS ONLY. INCORRECT INSTALLATION OF THE BOOTSTRAP ARMS CAN CAUSE INJURY TO PERSONS AND FAILURE OF THE BOOTSTRAP.

(f) Install the aft outboard arm (11) on the top and lower aft brackets (12, 13).

(g) Install the inboard forward brace (15) on the forward bracket (14) and the aft inboard arm (11).

(h) Install the outboard brace (15) on the forward bracket (14) and the aft outboard arm (11).

(2) Install the forward bootstrap components (Fig. 411) as follows:

(a) Remove the bolts (9) from the clamps (8).

(b) Put the forward support (7) against the forward side of the front flange of the top mount.

(c) Engage the clamp slots with the pins on the aft side of the forward support.

(d) Move the clamps (8) down to touch the lower flange of the top mount.

(e) Put the bolts (9) through the forward support holes and loosely turn the bolts into the clamps.

(f) Make sure the bottoms of the clamps (8) touch the top of the lower flange on the top mount.

(g) Tighten the bolts (9).

(h) Install the forward outboard and the inboard arms (6, 5) to the forward support and the clamp assembly (7, 8).

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(i) Attach the forward load cell (10) to the forward inboard arm (5).

NOTE: Point the load cell in the aft direction.

(j) Attach the forward load cell (10) to the forward outboard arm (6).

NOTE: Point the load cell in the aft direction.

(k) Attach the forward hoists (11) to the forward load cells (10).

NOTE: Put the handle on the forward hoist in the direction of the forward load cells.

(3) Align the transportation stand with the cradle and the power plant below the strut as follows:

(a) Put the transportation stand with the cradle and the power plant below the strut.

(b) Attach the hoists to the bootstrap equipment and cradle.

WARNING: MONITOR THE LOAD CELLS ON THE FORWARD AND AFT HOISTS. DO NOT LET THE LOAD BE MORE THAN 8000 POUNDS (3636 kg) IN EACH FORWARD LOAD CELL. DO NOT LET THE LOAD BE MORE THAN 2500 POUNDS (1136 KG) IN THE AFT LOAD CELL. DO NOT LET THE FRONT WHEELS OF THE TRANSPORTATION STAND TOUCH THE GROUND WHEN THE AFT WHEELS ARE OFF THE GROUND. IF THE LOAD IS MORE THAN THE LIMITS, OR IF ONLY THE FRONT WHEELS TOUCH THE GROUND, THE LOAD CAN FALL. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO THE POWER PLANT.

WARNING: ADD THE LOAD ON THE FORWARD BOOTSTRAPS SLOWLY AND CONTINUOUSLY. MAKE SURE THE LOAD DIFFERENCE BETWEEN THE INBOARD AND OUTBOARD BOOTSTRAPS IS LESS THAN 2000 POUNDS (909 KG) WHEN YOU LIFT THE POWER PLANT. IF THE LOAD DIFFERENCE IS MORE THAN 2000 POUNDS (909 KG), THE LOAD CAN FALL AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(c) Tighten all hoists to correct the tension on the hoists.

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(d) Do these at the same time:

1) Put a load on the forward hoists.

2) Lift the front wheels of the transportation stand 2-3 inches off the ground.

3) Monitor the loadcells to make sure the difference in the inboard and outboard loads is less than 2000 pounds (909 KG).

(e) Operate the aft hoists to lift the aft wheels of the transportation stand 2-3 inches off the ground.

(f) Let the position of the power plant become level and aligned below the strut.

(g) Lower the aft end of the assembly of the transportation stand, the cradle, and the power plant.

(h) Release the load from the aft hoists.

1) At the same time, lower the forward end of the assembly of the transportation stand, the cradle, and the power plant.

(i) Release the loads from the forward hoists.

(4) Move the cradle away from the transportation stand (Fig. 412) as follows:

(a) Loosen the bolts (2).

(b) Remove the pins (4) from the transportation stand and the cradle.

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WARNING: MONITOR THE LOAD CELLS ON THE FORWARD AND AFT HOISTS. DO NOT LET THE LOAD BE MORE THAN 8000 POUNDS (3636 kg) IN EACH FORWARD LOAD CELL. DO NOT LET THE LOAD BE MORE THAN 2500 POUNDS (1136 KG) IN THE AFT LOAD CELL. DO NOT LET THE FRONT WHEELS OF THE TRANSPORTATION STAND TOUCH THE GROUND WHEN THE AFT WHEELS ARE OFF THE GROUND. IF THE LOAD IS MORE THAN THE LIMITS OR IF ONLY THE FRONT WHEELS TOUCH THE GROUND, THE LOAD CAN FALL AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE POWER PLANT.

WARNING: ADD THE LOAD ON THE FORWARD BOOTSTRAPS SLOWLY AND CONTINUOUSLY. MAKE SURE THE LOAD DIFFERENCE BETWEEN THE INBOARD AND OUTBOARD BOOTSTRAPS IS LESS THAN 2000 POUNDS (909 KG) WHEN YOU LIFT THE POWER PLANT. IF THE LOAD DIFFERENCE IS MORE THAN 2000 POUNDS (909 KG), THE LOAD CAN FALL AND CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

CAUTION: DO NOT LET THE POWER PLANT MOVE FORWARD, AFT, LEFT OR RIGHT WHEN YOU LIFT THE POWER PLANT FROM THE TRANSPORTATION STAND. YOU MUST KEEP AN EVEN LOAD ON THE HOISTS TO MAKE SURE THE CONNECTIONS BETWEEN THE CRADLE AND THE TRANSPORTATION STAND ARE FREE TO MOVE. FAILURE TO DO SO CAN CAUSE DAMAGE TO THE CRADLE OR TRANSPORTATION STAND.

(5) Lift the power plant until you can see the mount is aligned with the strut (approximately six inches below the strut).

NOTE: It will be necessary to move the power plant about its longitudinal axis approximately 5 to 7 degrees. You can use the forward and aft hoists to align the cradle with the power plant. You can use the forward hoists to move the cradle in the roll direction, and the forward or aft hoists to move the cradle in the pitch direction.

(6) Connect the engine mounts (Fig. 413) as follows:

NOTE: If you will use the torque adapters (A71003-25 and -26), make sure you correct the torque wrench indication before you tighten the vertical tension bolts (AMM 20-11-00/201).

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CAUTION: MAKE SURE THE FORWARD AND AFT SHEAR PINS ENGAGE AT THE SAME TIME, OR THE FORWARD PIN ENGAGES 0.10 INCH (2.5 mm) BEFORE THE AFT PIN. IF YOU DO NOT DO THIS, YOU CAN DAMAGE THE ENGINE MOUNTS.

(a) Lift the forward and aft ends of the power plant equally until the shear pins engage.

NOTE: Make sure the forward and aft shear pins engage at the same time, or the forward pin engages 0.10 inch (2.5 mm) before the aft pin.

(b) Lift the power plant until the mount surfaces are 1.00 inch or less apart.

1) Move the power plant forward, rearward, left or right if it is necessary.

CAUTION: INSTALL ONLY NEW OR EXAMINED VERTICAL TENSION BOLTS. IF YOU USE DAMAGED VERTICAL TENSION BOLTS, YOU CANNOT TIGHTEN THE VERTICAL TENSION BOLTS CORRECTLY.

CAUTION: MAKE SURE THE VERTICAL TENSION BOLTS ARE THE CORRECT LENGTH BEFORE YOU INSTALL THEM. IF YOU USE THE INCORRECT VERTICAL TENSION BOLT, DAMAGE TO THE VERTICAL TENSION BOLT AND NUT CAN OCCUR.

CAUTION: TO TIGHTEN THE VERTICAL TENSION BOLTS, YOU MUST USE A TORQUE ADAPTER ON THE TORQUE WRENCH. WHEN YOU USE THE TORQUE ADAPTER, YOU MUST CALCULATE THE VALUE TO BE SET ON THE TORQUE WRENCH. USE THE LENGTHS OF THE TORQUE WRENCH AND THE TORQUE ADAPTER, AND THE SPECIFIED TORQUE VALUE FOR THE VERTICAL TENSION BOLTS. REFER TO "TIGHTENING TECHNIQUES AND TORQUE VALUES" (AMM 70-50-00/201) TO CORRECTLY USE THE TORQUE ADAPTER. YOU MUST INSTALL THE TORQUE WRENCH ON THE TORQUE ADAPTER AT A 90 DEGREE ANGLE. YOU MUST APPLY THE FORCE ON THE TORQUE WRENCH AT A 90 DEGREE ANGLE. IF YOU DO NOT TIGHTEN THE VERTICAL TENSION BOLTS CORRECTLY, DAMAGE CAN OCCUR.

(c) Install the vertical tension bolts (1, 2 and 10 and 13) in the forward and the aft mount fitting as follows:

1) Lubricate the vertical tension bolts (1, 2 and 10 or 13) with the antiseize compound.

2) Install the vertical tension bolts (10 or 13) and countersunk washers (11) in the aft mount fitting.

3) Install the vertical tension bolts (1 and 2) and countersunk washers (3) in the forward mount fitting.

a) Torque the bolt a small amount more than the run-on torque.

NOTE: Let the bootstrap hold and show the load while the bolts keep the mount surfaces parallel to each other. The dynamometer indications should not change since the bootstrap holds the power plant/cradle load.

4) Lift the power plant a small amount while you monitor the dynamometer values.

a) Initially, lift the power plant 0.25 inch (6 mm).

b) Tighten the bolts the same amount.

NOTE: The vertical tension bolts are a guide for the mounts, but they do not hold the power plant loads.

5) Continue to lift the power plant until the mount surfaces are 0.000 to 0.060 inch (0.00 to 1.52 mm) apart.

6) ENGINES WITH THE RIGID ENGINE MOUNTS;

Use the A71003-25 torque equipment to tighten the vertical tension bolts (10) to 3060-3740 pound-inches (346-423 newton-meters).

7) ENGINES WITH THE VIBRATION ISOLATORS ON THE AFT ENGINE MOUNTS;

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Use the A71003-41 torque equipment to tighten the vertical tension bolts (13) to 3060-3740 pound-inches (346-423 newton-meters).

8) Use the forward adapter assembly, found in the above torque equipment set, to tighten the vertical tension bolts (1, 2) for the forward engine mounts to 4050-4950 pound-inches (458-559 newton-meters).

a) Make sure all of the threads in the nut are engaged.

b) Make sure all of the chamfer on the end of the bolt comes out of the nut.

(7) Remove the cradle as follows:

(a) Remove the quick-release pins (18, Fig. 411) from the forward supports of the power plant.

(b) Disengage the aft handling adapters (14) from the cradle.

(c) Lower the cradle to the transportation stand.

(d) Install the cradle to the transportation stand with the pins (4, Fig. 412) and clamps (3).

(e) Disconnect the hoists (2, 11) from the cradle, the aft load cells (1), the forward inboard arm (5), and the forward outboard arm (6) (Fig. 411).

(f) Remove the forward handling adapters (19) and aft handling adapters (14) from the engine.

2. Install the Power Plant With the PT90-E

NOTE: The PT90-E installation procedure is an optional procedure to the bootstrap installation procedure, which is recommended.

A. Equipment

(1) PT90-E - Universal Engine Change System; Dendro Maskin Lift AB Lovholmsgrand 12, S-117 43 Stockholm, Sweden; or NORDEQUIP, INC., 7315 Courthouse Boulevard, Hastings, MN USA 55033

(2) A71006-79 Cradle

(3) A71030-32 Fan Cowl Hold-Open Equipment - (40 knots) (optional)

(4) A71032-14 Core Cowl Hold-Open Equipment - (40 knots) (optional)

(5) A78001-31 Thrust Reverser Hold-Open Equipment - (40 knots)

(6) G71023-52 Hold-Open Equipment - Fan and Core Cowls (20 knots) (optional)

(7) A71003-25 Torque Equipment (all rigid engine mounts)

(8) A71003-41 Torque Equipment (used only on the aft engine mounts with the vibration isolators)

(9) Protection pads - commercially available

B. Consumable Materials

(1) D00010 Antiseize Compound - Bostik Never-Seez Pure Nickel Special

C. References

(1) AMM 26-11-02/201, Engine Fire and Overheat Detector Element

(2) AMM 70-50-00/201, Standard Torque Values

(3) AMM 71-11-04/201, Fan Cowl Panels

(4) AMM 71-11-06/201, Core Cowl Panels

(5) AMM 71-21-00/601, Engine Mounts

(6) AMM 71-21-02/401, Aft Engine Mounts

(7) AMM 70-11-06/201, Fluorescent Penetrant Inspection

(8) AMM 78-31-00/201, Thrust Reverser Systems

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D. Access

(1) Location Zone
411 Left Engine
421 Right Engine

(2) Access Panels
413AL Fan Cowl Panel, Left Engine
414AR Fan Cowl Panel, Left Engine
415AL Fan Reverser, Left Engine
416AR Fan Reverser, Left Engine
417AL Core Cowl, Left Engine
418AR Core Cowl, Left Engine
423AL Fan Cowl Panel, Right Engine
424AR Fan Cowl Panel, Right Engine
425AL Fan Reverser, Right Engine
426AR Fan Reverser, Right Engine
427AL Core Cowl, Right Engine
428AR Core Cowl, Right Engine

E. Prepare the Airplane for the Power Plant Installation

WARNING: INSTALLATION OF A RING CASE CONFIGURATION ENGINE IS NOT ALLOWED ON AN AIRPLANE THAT HAS A SEGMENTED CASE ENGINE WITH A P/N 791100-14-102 EEC INSTALLED. IF YOU DO YOU CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO THE AIRPLANE.

(1) If the engine being installed is a segmented case configuration engine (pre SB PW4ENG 72-755 or production equivalent) check the P/N of the EEC installed on this engine. If the EEC P/N is 791100-14-102 (P&W P/N 54D043), you must ensure that the other engine installed on the airplane is not a ring case configuration engine (post P&W SB PW4ENG 72-755 or production equivalent).

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CAUTION: DO NOT INSTALL AN ENGINE WITH A VIBRATION-ISOLATED MOUNT UNLESS YOU VERIFY THE AIRPLANE MOUNT CONFIGURATION. YOU CANNOT ALWAYS INSTALL A VIBRATION-ISOLATED ENGINE MOUNT ON AN AIRPLANE THAT HAS A CONFIGURATION FOR A RIGID ENGINE MOUNT. YOU CAN INSTALL AN ENGINE WITH A RIGID ENGINE MOUNT ON AN AIRPLANE THAT HAS THE CONFIGURATION FOR A VIBRATION-ISOLATED MOUNT. IF YOU INSTALL THE INCORRECT ENGINE MOUNT, THE ENGINE MOUNT CAN CAUSE DAMAGE TO THE ENGINE, THE CORE COWL, OR THE STRUT.

(2) SAS 050, 051, 150-154;
MTH 275, 276;
Make sure the correct aft engine mount is on the engine (AMM 71-21-02/401).

NOTE: You can install an engine with a vibration-isolated mount on an airplane with the configuration for a rigid mount if: The airplane is not in the group above or the airplane is in the group above and was reworked to SB 71-48. You can install an engine with a rigid mount on an airplane with a configuration for a vibration-isolated mount.

(3) Make sure the airplane is in the same configuration as the power plant removal (Refer to the Prepare for the Power Plant Removal).

(4) Make sure the card for the engine fire/overheat detection agrees with the fire detector elements on the replacement power plant (AMM 26-11-02/201).

F. Prepare the Power Plant for Installation

(1) Get new vertical tension bolts (1, 2, and 10 or 13), or satisfactorily examined ones, or make an inspection of the old vertical tension bolts with the fluorescent penetrant (AMM 70-11-06/201).

(a) Make sure you can apply sufficient torque on the threads of the vertical tension bolts (1, 2, and 10 or 13) to lock them when you use a satisfactory nut.

(b) Discard all vertical tension bolts with damage that you can see.

(c) Discard all vertical tension bolts with damage that you can feel with your fingernail.

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(2) Apply the antiseize compound to the threads and shanks of the vertical tension bolts (1, 2, and 10 or 13)(Fig. 413).

(3) Make sure the self-locking (run-on) torque of the tandem barrel nuts (7) is a minimum of 70 pound-inches (7.9 newton-meters) and a maximum of 600 pound-inches (67.8 newton-meters) (Fig. 413).

NOTE: These torque values are for barrel nuts that are previously used or bench-tested. New barrel nuts must be bench-tested to a minimum torque value of 135 pound-inches

(a) If the torque value for the barrel nut is not the necessary minimum value, replace the tandem barrel nut (7).

1) Examine the self-locking torque value for the barrel nuts (7) again.

(4) Make sure the self-locking (run-on) torque of the barrel nuts (5) is a minimum of 70 pound-inches (7.9 newton-meters) and a maximum of 600 pound-inches (67.8 newton-meters) (Fig. 413).

NOTE: These torque values are for barrel nuts that are previously used or bench-tested. New barrel nuts must be bench-tested to a minimum torque value of 135 pound-inches

(a) If the torque value for the barrel nut is not in the limits, replace the tandem barrel nut.

1) Examine the torque value for the barrel nuts again.

(5) Examine the engine mounts (AMM 71-21-00/601).

(6) Make sure the surfaces of the forward and aft engine mounts are free of oil, grease, and other unwanted material.

(7) Apply the antiseize compound to the shear pins (4, 12)(Fig. 413).

(8) Do a check on the wire bundles in the support beam on the fan cowl.

(a) Make sure the wire bundle did not wear in a large area.

(b) Make sure the wire bundle is attached correctly.

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(9) Remove the core cowl panels (AMM 71-11-06/201) or install the hold-open equipment (A71032-14) for the core cowl panels as follows:

NOTE: The installation of the hold-open equipment is optional to the removal of the core cowl panels.

(a) If you use the hold-open equipment (G71023) for the fan and core cowl, go to the step that follows which installs the hold-open equipment (G71023).

(10) Remove the fan cowl panels (AMM 71-11-04/201) or install the hold-open equipment (A71030-32) for the fan cowl panels as follows:

NOTE: The installation of the hold-open equipment is optional to the removal of the fan cowl panels.

(a) If you use the hold-open equipment (Fig. 403), do the steps that follow:

1) Open the fan cowl panels (AMM 71-11-04/201).

2) Assemble the hold-open equipment (1) on the ground.

3) Put the hold-open equipment (1) on the forward edge of the fan cowl panels.

4) Tighten the screw clamps (2).

5) Make sure the hold-open equipment does not touch the support structure for the fan cowl panel.

6) Install the hold-open rods to the stow bracket on the fan cowl panels.

(b) If you use the hold-open equipment (G71023) for the fan and core cowl panels, go to the step that follow which installs the hold-open equipment (G71023).

(11) Install the hold-open equipment (A78001) for the thrust reversers (Fig. 404) as follows:

(a) Put the actuator lock (2) along the actuator rod (5).

(b) Make sure the lock yoke (7) is against the bolt (6) that attaches the actuator rod (5).

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(c) Put the channel clamp (3) around the actuator rod (5).

(d) Tighten the screw (8) to attach the channel clamp (3) to the actuator rod (5).

(e) Lightly close the actuator (1).

NOTE: When you lightly close the actuator, the load moves from the actuator to the actuator lock (2).

(f) Disengage the hold-open rod for the thrust reverser from the support.

(g) Install the hold-open rod and the support to its stowage points.

(12) If you use the hold-open equipment (G71023) for the fan and core cowl (Fig. 405), do as follows:

(a) Install the thrust reverser tube and attached parts on the thrust reversers (View B or E).

1) Engage the hook on the thrust reverser tube to the loop on the thrust reverser.

NOTE: Make sure the pin on the thrust reverser engages the pin hole on the thrust reverser tube. Or make sure the pin on the thrust reverser tube engages the pin hole on the thrust reverser.

2) Engage the loop on the thrust reverser tube to the hook on the thrust reverser.

NOTE: Make sure the pin on the thrust reverser or on the thrust reverser tube engages the pin hole on its mate.

3) Tighten the knobs on the thrust reverser tube to attach the tube to the thrust reverser.

(b) Install the forward tube assembly on the fan cowl panel (View A or D).

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1) Turn the forward tube to engage the tube end to the thrust reverser tube.

2) For the left fan cowl panel, do as follows:

a) Engage the hook on the left fan cowl tube to the loops on the fan cowl panel.

NOTE: Make sure the pins on the fan cowl panel engage the pin holes on the fan cowl tube.

b) Tighten the knobs on the fan cowl tube to attach the tube to the fan cowl panel.

3) For the right fan cowl panel, do as follows:

a) Engage the hooks on the fan cowl panel to the loops on the right fan cowl panel.

NOTE: Make sure the pins on the fan cowl tube engage the pin holes on the fan cowl panel.

b) Close the fan cowl latch.

c) Tighten the knobs on the fan cowl tube to attach the tube to the fan cowl panel.

4) Put the lockpin into the pin hole on the thrust reverser tube.

5) Install the hold-open rods on the fan cowl panel to the stow bracket on the fan cowl panel.

(c) Install the aft tube assembly on the core cowl panel (View C and F).

1) For the left core cowl, put the attachment block into the loop of the core cowl panel.

NOTE: Make sure the pins on the attachment block engage the pin holes on the core cowl panel.

a) Put a pin in the lockhole into the attachment block to attach the core cowl attachment to the core cowl panel.

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2) For the right core cowl, install the attachment block on the cowl latch as follows:

a) Put the loop of the attachment block into the core cowl latch.

NOTE: Make sure the pins on the attachment block engage the pin holes on the core cowl panel.

b) Close the core cowl latch.

3) Put the aft tube into the thrust reverser tube.

4) Turn the aft tube to install the other end of the tube on the attachment block.

5) Put the lockpin into the pin hole on the thrust reverser tube.

6) Put the pin into the aft tube and the attachment block.

7) Install the hold-open rods on the core cowl panel to the stow bracket on the core cowl panel.

G. Install the Power Plant with the PT9O-E

CAUTION: MAKE SURE THAT THE ENGINE CONFIGURATION AND THE ENGINE DESIGNATION ON THE ENGINE IDENTIFICATION PLATE, INSTALLED ON FLANGE C ON THE FAN CASE, AGREE WITH EACH OTHER.

(1) Put the protection pad in position on each side of the turbine exhaust sleeve.

(2) Put the PT9O-E and the power plant in the correct position below the strut.

NOTE: Move the assembly below the strut from the front end.

(a) If it is necessary, use plumb lines from the center of the engine mounts to put a mark (plumb line A) on the ground.

(b) Make a second mark (plumb line B) approximately 7 inches inboard of plumb line A.

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(c) Move the hoist and the power plant into position at the front end.

(d) Use the forward and aft tow bars to control the PT90-E and the power plant into position above plumb line B while you move the hoist and the power plant.

(e) Move the hoist and the power plant until the engine mounts are approximately 4 inches forward of the engine mounts on the strut.

NOTE: The power plant and hoist will slightly move to the rear as it is lifted.

(3) Use the control box to lift the power plant and the cradle (Fig. 414).

(a) Make sure that all the tools and mechanics necessary to install the power plant are on the PT90-E.

(b) Set the load distribution display to zero.

(c) Set the load limit to 500 pounds.

(d) Make sure the AUTOGUARD button is in the out (on) position.

CAUTION: MAKE SURE YOU LIFT THE POWER PLANT WITH THE FORWARD END LOWER THAN THE AFT END. IF YOU DO NOT DO THIS, THE TOP OF THE ENGINE FAN CASE CAN TOUCH THE THRUST REVERSER AND CAUSE DAMAGE TO EQUIPMENT.

(e) Use the control box to lift the power plant until the forward and aft engine mounts are approximately 6 inches (150 mm) from the strut interfaces.

NOTE: Make sure the aft engine mount (9) is a little higher than the forward engine mount while you lift the power plant.

MECH | INSP

(f) Use the control box to adjust the power plant in the roll (6 degrees) and pitch directions to align the engine mount-to-strut interfaces.

NOTE: Engine mounts are free to move until attached to the strut to help in alignment.

(g) Slowly operate the hoist to lift the power plant until the mount surfaces are 1.00 inch or less apart.

1) Lift the power plant very slowly and equally.

2) If it is necessary, use the control box to adjust the position of the power plant in the transverse, axial, roll, or pitch directions.

NOTE: The operator must monitor the load distribution display, and must have used the control box before, to prevent side loads on the engine mounts.

(h) Let the shear pins (4, 12) on the forward and aft engine mounts start to engage the strut.

(4) Connect the engine mounts with the steps that follow (Fig. 413):

NOTE: If you will use the torque adapter, make sure you correct the torque wrench indication before you tighten the vertical tension bolts (Ref 70-50-00/201).

CAUTION: INSTALL ONLY NEW OR EXAMINED VERTICAL TENSION BOLTS. IF YOU USE DAMAGED VERTICAL TENSION BOLTS, YOU CANNOT TIGHTEN THE VERTICAL TENSION BOLTS CORRECTLY.

CAUTION: MAKE SURE THE VERTICAL TENSION BOLTS ARE THE CORRECT LENGTH BEFORE YOU INSTALL THEM. IF YOU USE THE INCORRECT VERTICAL TENSION BOLT, DAMAGE TO THE VERTICAL TENSION BOLT AND NUT CAN OCCUR.

MECH | INSP

CAUTION: TO TIGHTEN THE VERTICAL TENSION BOLTS, YOU MUST USE A TORQUE ADAPTER ON THE TORQUE WRENCH. WHEN YOU USE THE TORQUE ADAPTER, YOU MUST CALCULATE THE VALUE TO BE SET ON THE TORQUE WRENCH. USE THE LENGTHS OF THE TORQUE WRENCH AND THE TORQUE ADAPTER, AND THE SPECIFIED TORQUE VALUE FOR THE VERTICAL TENSION BOLTS. REFER TO "TIGHTENING TECHNIQUES AND TORQUE VALUES" (AMM 70-50-00/201) TO CORRECTLY USE THE TORQUE ADAPTER. YOU MUST INSTALL THE TORQUE WRENCH ON THE TORQUE ADAPTER AT A 90 DEGREE ANGLE. YOU MUST APPLY THE FORCE ON THE TORQUE WRENCH AT A 90 DEGREE ANGLE. IF YOU DO NOT TIGHTEN THE VERTICAL TENSION BOLTS CORRECTLY, DAMAGE CAN OCCUR.

(a) Install the vertical tension bolts (1, 2 and 10 and 13) in the forward and the aft mount fitting as follows:

1) Lubricate the vertical tension bolts (1, 2 and 10 or 13) with the antiseize compound.

2) Install the vertical tension bolts (10 or 13) and countersunk washers (11) in the aft mount fitting.

3) Install the vertical tension bolts (1 and 2) and countersunk washers (3) in the forward mount fitting.

a) Torque the bolt a small amount more than the run-on torque.

NOTE: Let the hoist hold and show the load while the bolts keep the mount surfaces parallel to each other. The load distribution display should not change since the hoist holds the power plant/cradle load.

4) Lift the power plant a small amount while you monitor the load distribution display.

a) Initially, lift the power plant 0.25 inch.

MECH | INSP

b) Tighten the bolts the same amount.

NOTE: The vertical tension bolts are a guide for the mounts, but they do not hold the power plant loads.

5) Continue to lift the power plant until the mount surfaces are 0.000 to 0.060 inch (0.00 to 1.52 mm) apart.

6) ENGINES WITH THE RIGID ENGINE MOUNTS;

Use the A71003-25 torque equipment to tighten the vertical tension bolts (10) to 3060-3740 pound-inches.

7) ENGINES WITH THE VIBRATION ISOLATORS ON THE AFT ENGINE MOUNTS;

Use the A71003-41 torque equipment to tighten the vertical tension bolts (13) to 3060-3740 pound-inches.

8) Tighten the vertical tension bolts (1, 2) for the forward engine mounts to 4050-4950 pound-inches.

a) Make sure all of the threads in the nut are engaged.

b) Make sure all of the chamfer on the end of the bolt comes out of the nut.

(5) Use the control box to lower the PT90-E and the power plant until the load distribution display is almost zero.

NOTE: When the wing and strut holds the weight of the power plant, you can pull the attach pins from the power plant.

(6) Remove the aft top pins at the aft top attach points on the cradle.

(7) Remove the pin at the aft lower attach point.

(8) Use the control box to lower the hoist and the cradle and lift the ground pad.

(a) Lower the hoist and cradle and adjust the transverse, axial, and roll directions to zero.

(9) Put the brake lever in the not locked position.

(10) Carefully move the hoist and the cradle to the rear and remove them from the area.

(11) Remove the forward cradle adapters from the power plant.

3. Put the Airplane Back to Its Usual Configuration

A. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
406	1	Packing	73-11-02	10	10
407	13	Seal	36-11-01	06	10
	15	Seal			10
	17	Packing	73-11-07	07	45
408	15	Seal	36-11-01	05	55
	16	Seal	71-11-09	01	10
	21	Seal			10

B. References

(1) AMM 24-22-00/201, Electrical Power - Control

(2) AMM 31-41-00/201, Engine Indication and Crew Alerting System

(3) AMM 71-00-00/501, Power Plant

(4) AMM 71-00-03/201, Engine Preservation/Depreservation

(5) AMM 71-11-02/401, Inlet Cowl Chine

(6) AMM 71-11-04/201, Fan Cowl Panels

(7) AMM 71-11-04/401, Fan Cowl Panels

(8) AMM 71-11-06/201, Core Cowl Panels

(9) AMM 71-11-06/401, Core Cowl Panels

(10) AMM 71-11-07/501, Core Cowl Panel Latch

(11) AMM 76-11-00/501, Engine Control System

(12) AMM 78-31-00/201, Thrust Reverser System

(13) AMM 78-31-01/601, Thrust Reverser

(14) AMM 78-31-02/501, Latch Bands

(15) AMM 78-31-04/501, Tension Latches

C. Access

(1) Location Zone

411 Left Engine
421 Right Engine

(2) Access Panels

413AL Fan Cowl Panel, Left Engine
414AR Fan Cowl Panel, Left Engine
415AL Fan Reverser, Left Engine
416AR Fan Reverser, Left Engine
417AL Core Cowl, Left Engine
418AR Core Cowl, Left Engine
423AL Fan Cowl Panel, Right Engine
424AR Fan Cowl Panel, Right Engine
425AL Fan Reverser, Right Engine
426AR Fan Reverser, Right Engine
427AL Core Cowl, Right Engine
428AR Core Cowl, Right Engine

D. Procedure

WARNING: DO NOT KEEP ELECTRICAL POWER ON THE AIRPLANE WHEN YOU CONNECT THE FUEL AND HYDRAULIC LINES, AND THE ELECTRICAL CONNECTORS. POSSIBLE ELECTRICAL SHOCK OR IGNITION OF FLAMMABLE FLUIDS OR FUMES CAN OCCUR. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) If electrical power is on the airplane, remove electrical power (AMM 24-22-00/201).

(2) Install the thermal anti-ice (TAI) duct (Fig. 408) as follows:

(a) Remove the caps from the TAI duct (24).

MECH | INSP

(b) Put the TAI duct (24) on the fan case.

(c) Install the clamps (17, 20) with new seals (16, 21) on the TAI duct (24).

(d) Install the bolt (22), washers (23, 19) and nut (18) in the TAI duct bracket.

(e) Tighten the clamps (17, 20) to 85-100 pound-inches.

NOTE: Make sure the lock bolt on the clamp does not extend more than the top of the duct.

(3) Install the strut drain lines as follows:

NOTE: See Fig. 407 for the correct drain hose part number to install on your strut/engine combination

(a) Remove the caps from the strut drain lines.

(b) Connect the right forward mount drain (4, Fig. 407) and the left forward mount drain (1, Fig. 408).

(c) Connect the drain line (8, Fig. 407) for the main strut.

(d) Connect the right raceway drain (9, Fig. 407) and the left raceway drain (4, Fig. 408).

(4) Install the flexible line for the fire extinguisher (Fig. 408) as follows:

(a) Remove the caps from the flexible line (2A).

(b) Attach the flexible line (2A) for the fire extinguisher.

(5) Install the starter duct (14) on the turbine case (Fig. 407) as follows:

(a) Attach the starter duct (14) with the seals (13, 15) and the clamps (12, 16).

(b) Tighten the clamps (12, 16) to 110-115 pound-inches.

(6) Connect the precooler inlet duct (Fig. 408) as follows:

(a) Connect the precooler inlet duct (13) with the seal (15) and the clamp (14).

(b) Tighten the clamp (14) to 115-125 pound-inches.

(7) Connect the pneumatic hose and the static pressure hose as follows:

(a) Remove the caps from the pneumatic hose (3, Fig. 408) and the static pressure hose (3, Fig. 407).

(b) Connect the pneumatic hose (3, Fig. 408) to the precooler.

(c) Connect the static pressure hose (3, Fig. 407) for the EEC to its receptacle.

(8) Connect the electrical connectors (Fig. 407 and 408) as follows:

(a) Remove the caps from the electrical connectors (1 and 2 on Fig. 407; 6 thru 12, and 25 on Fig. 408).

(b) Connect the electrical connectors (1 and 2 on Fig. 407; 6 thru 12, and 25 on Fig. 408) on the receptacles.

(9) Connect the power feeder cable for the IDG to the power plant as follows (Fig. 409):

(a) Remove the wire bundle and the hook for the power feeder from the thrust reverser.

(b) Install the phase leads for the IDG power feeder to the terminal block with the washers and nuts (3, 4).

(c) Tighten the nuts (3, 4) to 144-168 pound-inches (16.3-19.0 newton-meters).

(d) Install the terminal block cover (5) with the washers and screws (7, 6).

(e) Attach the power feeder cable (2) for the IDG to the power plant with the clamps (1).

MECH | INSP

CAUTION: BE CAREFUL WITH THE HYDRAULIC SUPPLY LINE. DO NOT MAKE THE HYDRAULIC SUPPLY LINE INTO A TIGHT COIL. IF THE HOSE CLOSES AND HAS KINKS, IT WILL DECREASE THE FLUID SUPPLY. IF THE FLUID SUPPLY DECREASES, FAILURE IN THE ENGINE DRIVEN PUMP CAN OCCUR.

CAUTION: CLEAN THE HYDRAULIC FLUID LEAKAGE. IF THE LEAKAGE COLLECTS, THE HYDRAULIC FLUID CAN CAUSE CORROSION TO THE PART.

(10) Connect the hydraulic lines (Fig. 407) as follows:

(a) Remove caps from the hydraulic drain line (6), the pressure line (10), and the supply line (11).

NOTE: A small quantity of the fluid leakage can occur when you remove the caps.

(b) Connect the hydraulic drain line (6).

(c) Connect the hydraulic pressure line (10).

(d) Connect the hydraulic supply line (11).

(11) Connect the supply line (Fig. 407) for the primary fuel of the power plant as follows:

(a) Remove the caps from the fuel supply line (7) and the raceway connector.

(b) Lubricate new packing (17).

(c) Install the packing (17) in the inner diameter groove of the raceway connector.

CAUTION: DO NOT USE THE TOOLS TO TIGHTEN THE COUPLING. IF YOU TIGHTEN THE COUPLING TOO MUCH, IT CAN CAUSE DAMAGE TO THE COUPLING.

(d) Connect the fuel supply line (32) to the raceway connector.

(e) Tighten the coupling clockwise with your hand.

(f) Make sure the coupling teeth are locked with the receway connector teeth.

(g) Install the spray shield around the fuel supply line and the hydraulic lines with the velcro.

(h) Install the lockwire on the spray shield.

E. Put the Airplane Back to Its Usual Condition.

(1) Supply the electrical power (AMM 24-22-00/201).

(2) Make sure these circuit breakers on the overhead circuit breaker panel, P11, are closed:

NOTE: You must close these circuit breakers to supply power to the SCU. It is also necessary to close these circuit breakers to supply the ground test power to the Electronic Engine Control (EEC).

(a) 11L7 EEC/SCU PWR L ENG

(b) 11K28, EEC/SCU PWR R ENG

(3) Make sure the fuel system does not have leakage as follows:

(a) For the left engine, remove the DO-NOT-CLOSE tag and close this circuit breaker on the P6 panel:

1) 6E1, FUEL VALVES L SPAR

(b) For the right engine, remove the DO-NOT-CLOSE tag and close this circuit breaker on the P6 panel:

1) 6E2, FUEL VALVES R SPAR

(c) Move the FUEL CONTROL switch to the RUN position.

(d) Put the BOOST PUMP switches to the ON position.

(e) Make sure the fuel system does not have leakage.

(f) Put the BOOST PUMP switches in the OFF position.

(g) Move the FUEL CONTROL switch to the CUTOFF position.

MECH | INSP

(h) For the left engine, remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

1) 11D25, ENGINE FUEL CONT VLV & EEC CHAN B RESET L

(i) For the right engine, remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

1) 11D26, ENGINE FUEL CONT VLV & EEC CHAN B RESET R

(4) Open the supply shutoff valve for the engine driven pump (EDP) as follows:

(a) Remove the DO-NOT-OPERATE identifier and push the fire handle down to put the system back to its usual condition.

(b) Make sure the position indicator on the supply shutoff valve for the EDP moves to the OPEN position.

(5) Do the depreservation procedure for the power plant if it is necessary (AMM 71-00-03/201).

(6) Remove electrical power (AMM 24-22-00/201).

(7) To remove the bootstrap equipment, refer to the Remove the Power Plant With the Bootstrap Equipment.

(8) To remove the hold-open equipment (A78001) for the thrust reverser, refer to the Remove the Power Plant With the Bootstrap Equipment.

(9) If you removed the fan cowl and core cowl panels, do the steps as follows:

(a) Install the core cowl panels (AMM 71-11-06/401).

(b) Install the fan cowl panels (AMM 71-11-04/401).

(10) If you installed the hold-open equipment (G71023) for the fan cowl and core panel, refer to the Remove the Power Plant With the Bootstrap Equipment.

(11) Remove the protection pads.

MECH | INSP

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 WHEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(12) Close the thrust reverser (AMM 78-31-00/201).

(13) Close the core cowl panels (AMM 71-11-06/201).

(14) Install the core cowl fairing (8, Fig. 401) with the bolts (7, 9, 10).

(15) Close the fan cowl panels (AMM 71-11-04/201).

CAUTION: YOU MUST INSTALL THE INLET CHINE ON THE INBOARD SIDE OF THE INLET COWL. THE INCORRECT INSTALLATION OF THE INLET CHINE CAN INCREASE THE AERODYNAMIC DRAG.

(16) Make sure you install the inlet cowl chine on the inboard side of the inlet cowl (AMM 71-11-02/401).

(17) Adjust the core cowl panel latches (AMM 71-11-07/501), the fan duct tension latches (AMM 78-31-04/501), and the latch bands (AMM 78-31-02/501).

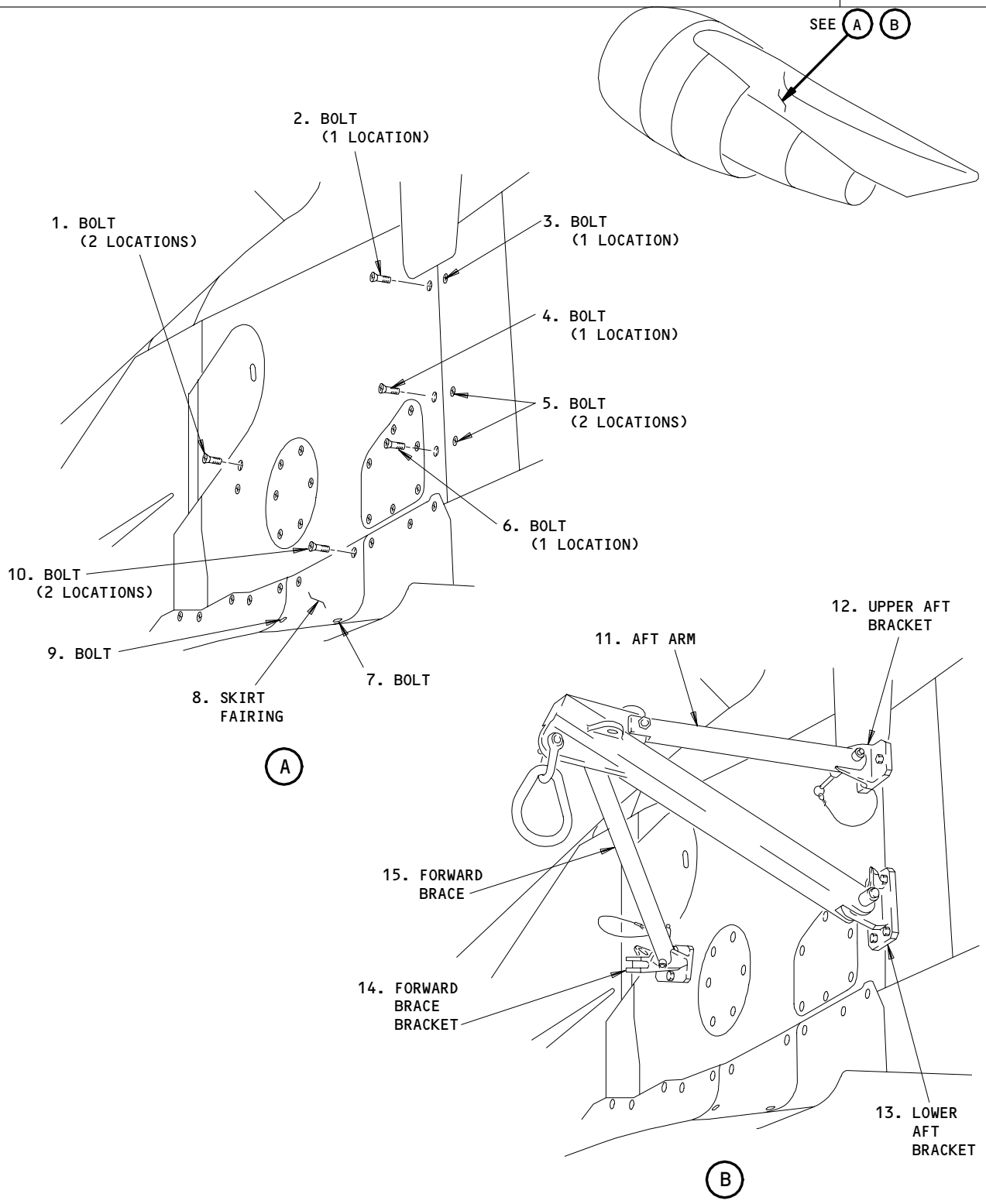
(18) Do a check of the thrust reverser to find if adjustment is necessary after the engine change (AMM 78-31-01/601).

(19) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

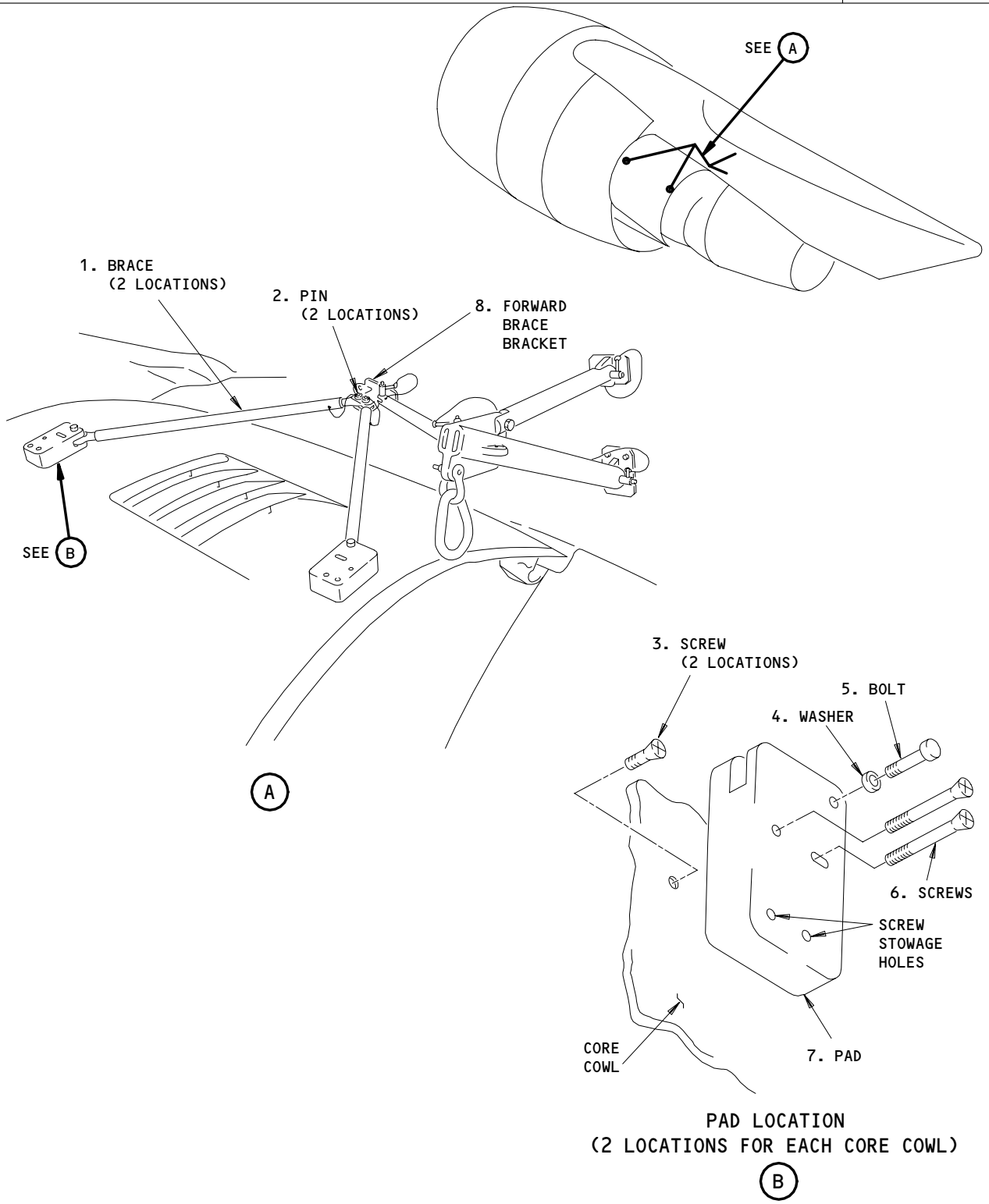
(20) Remove DO-NOT-OPERATE tag from the flap control lever.

(21) Remove the tail jack.

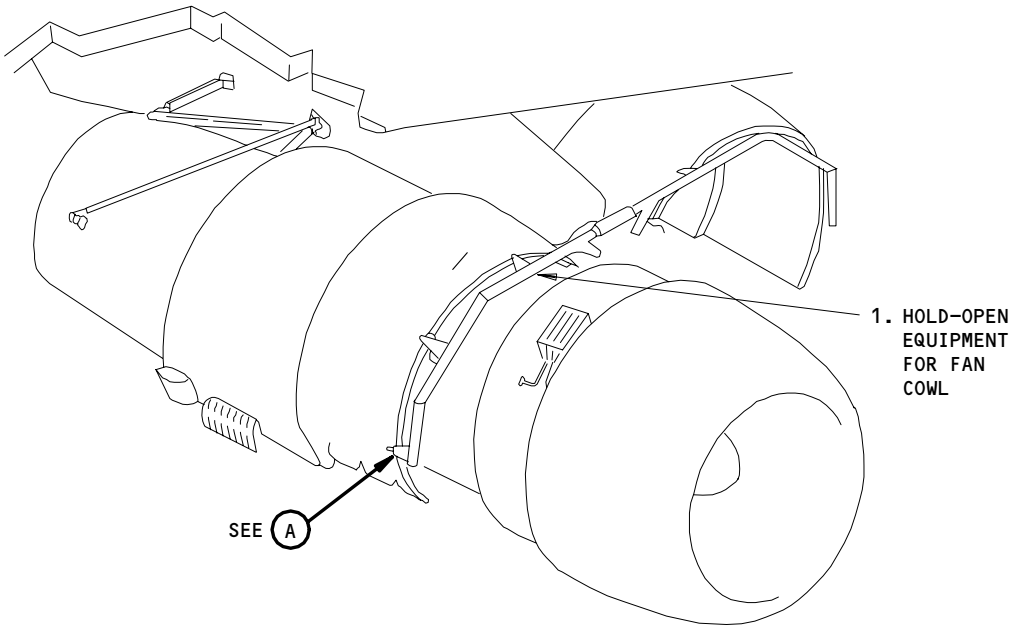
(22) Do the test for the engine that is shown in the Power Plant Test Reference Table (AMM 71-00-00/501).

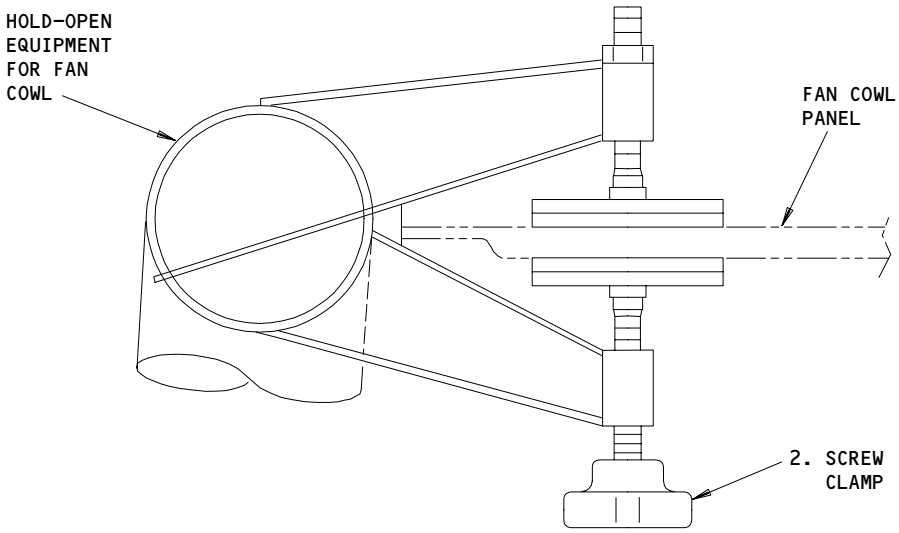


Aft Bootstrap Equipment Installation
Figure 401

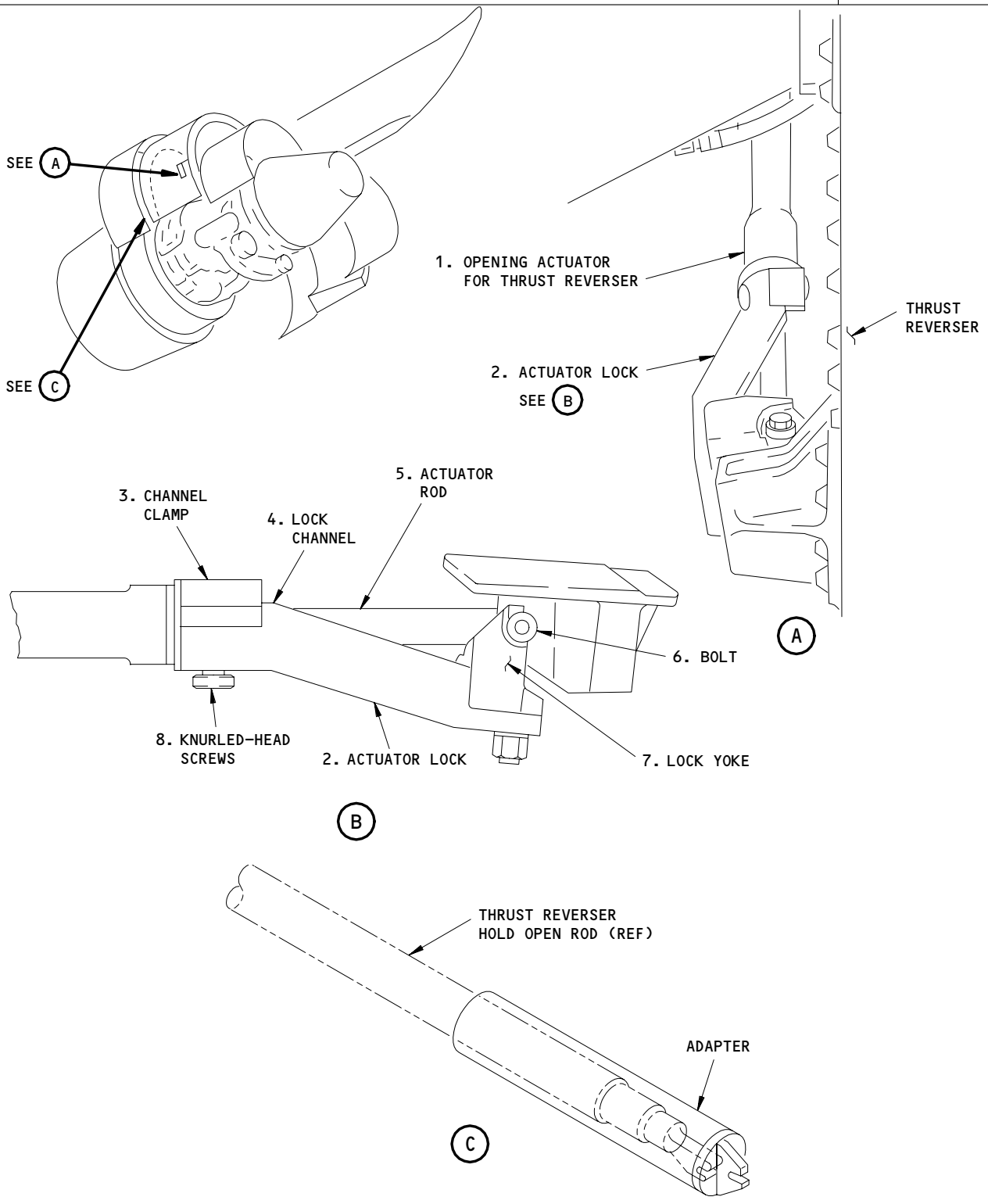


Core Cowl Panel Hold-Open Equipment Installation
Figure 402

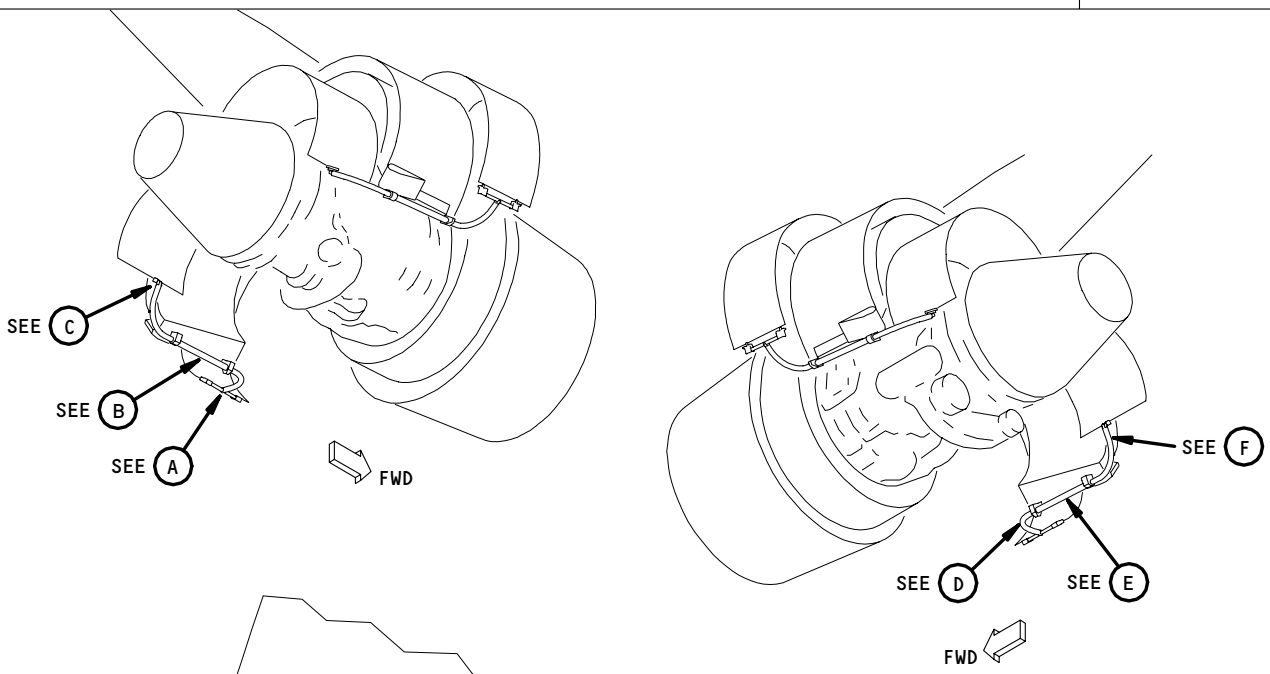


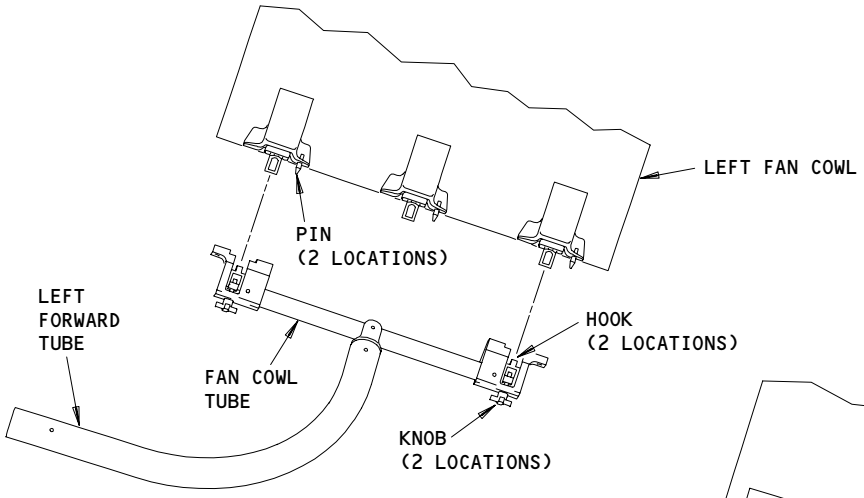


Fan Cowl Panel Hold-Open Equipment Installation
Figure 403



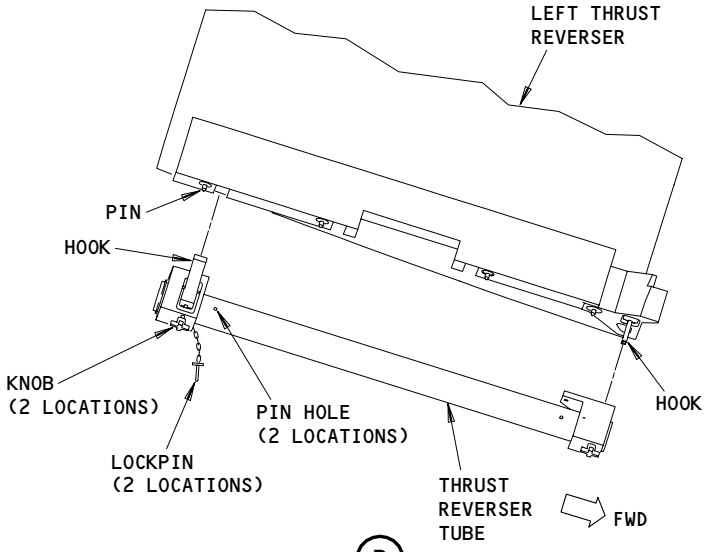
Thrust Reverser Hold-Open Equipment Installation
Figure 404





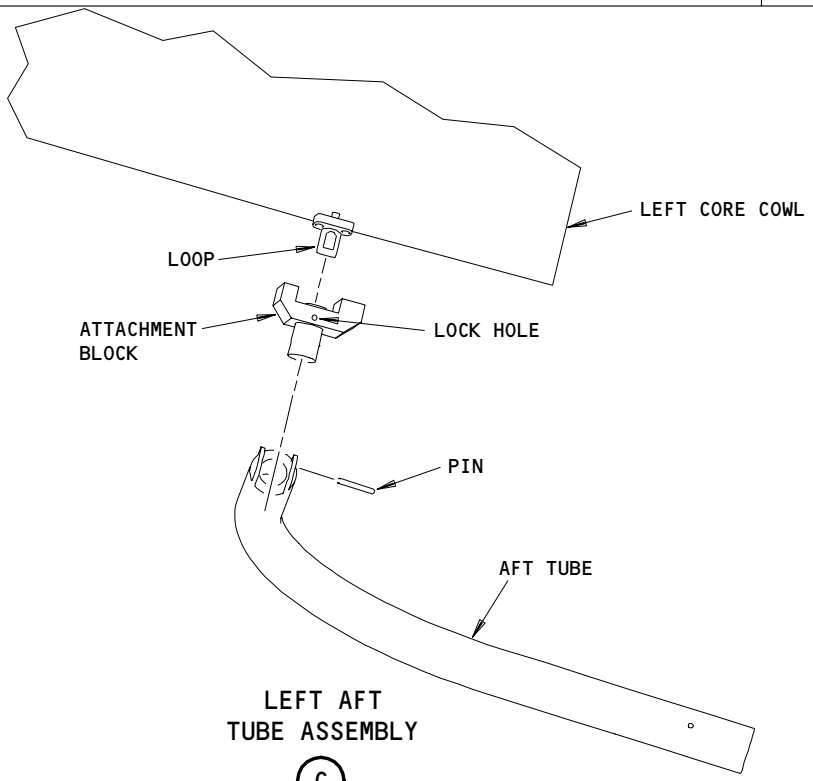
LEFT FORWARD TUBE ASSEMBLY

A



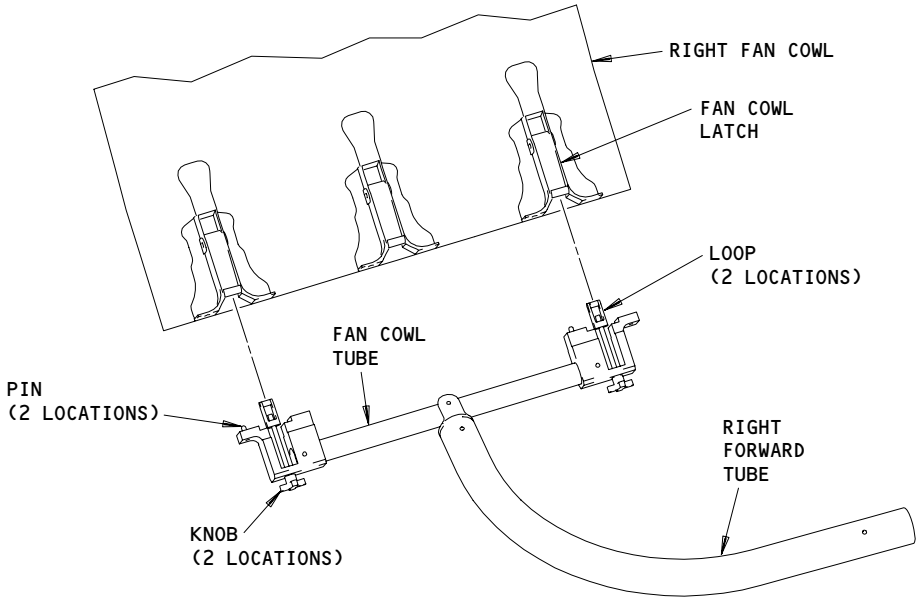
B

Fan and Core Cowl Hold-Open Equipment Installation
Figure 405 (Sheet 1)



LEFT AFT
TUBE ASSEMBLY

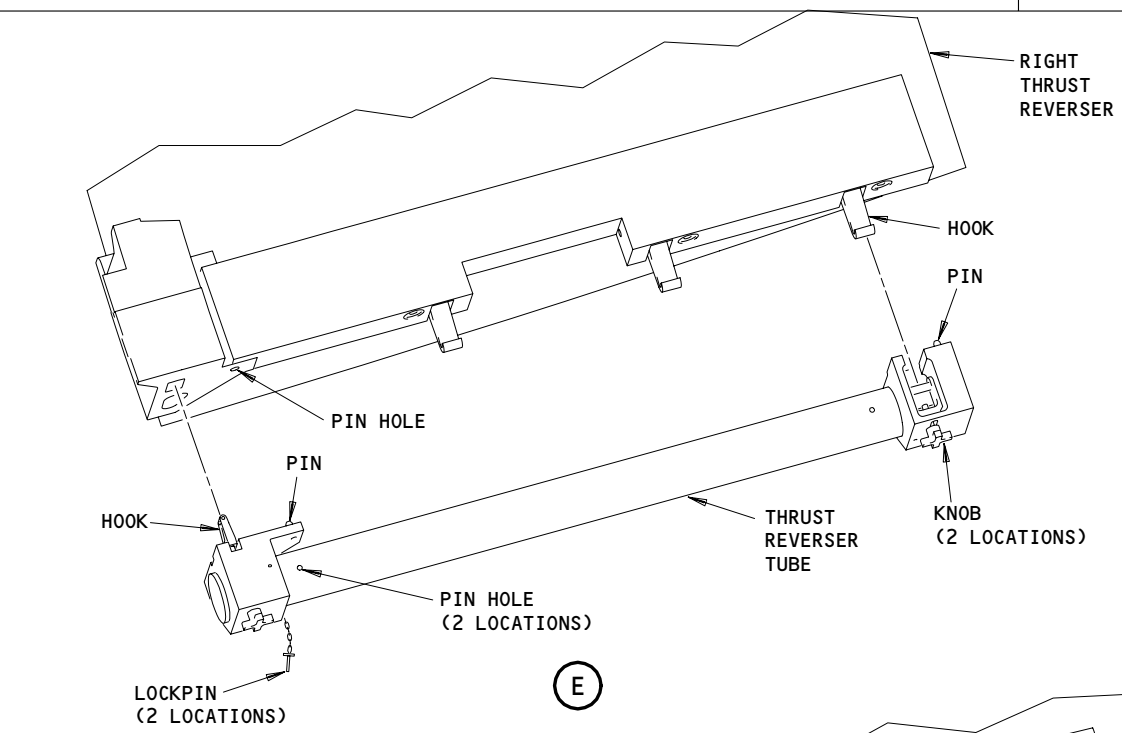
C

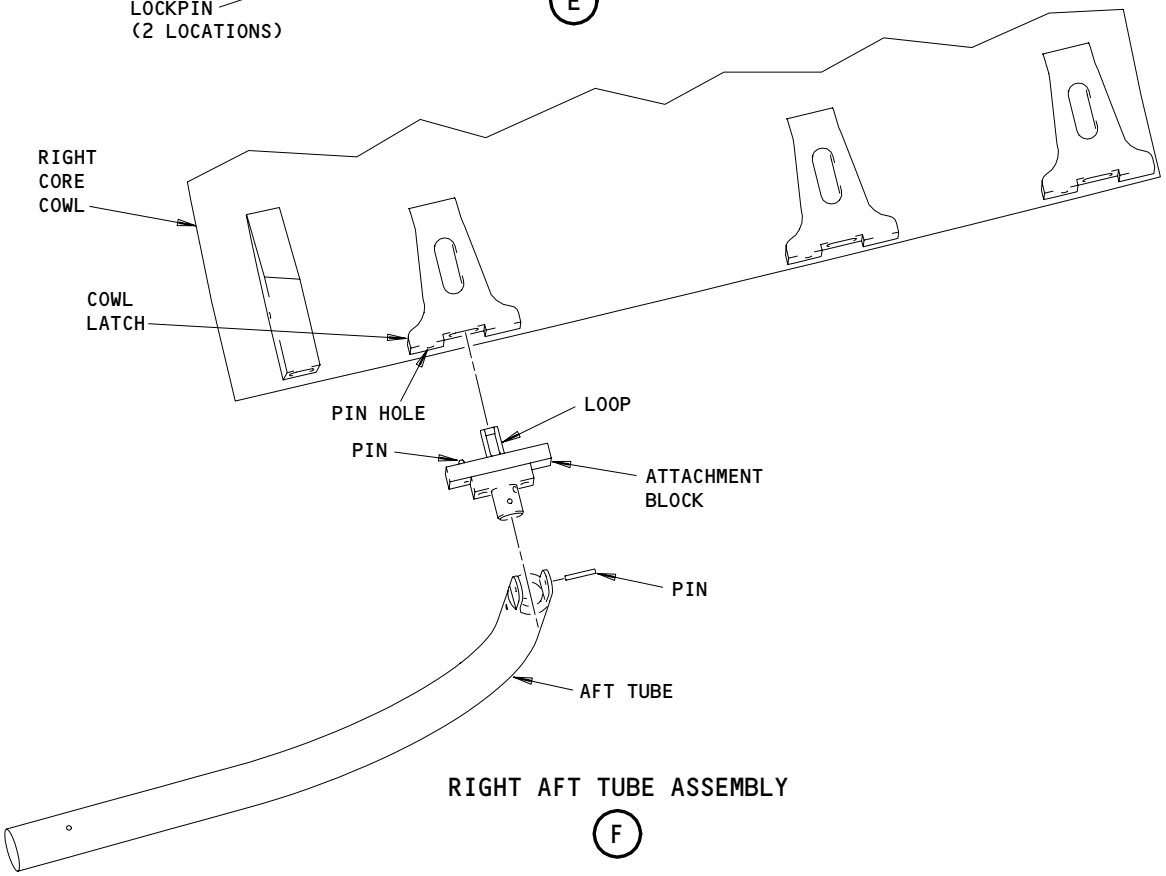


RIGHT FORWARD TUBE ASSEMBLY

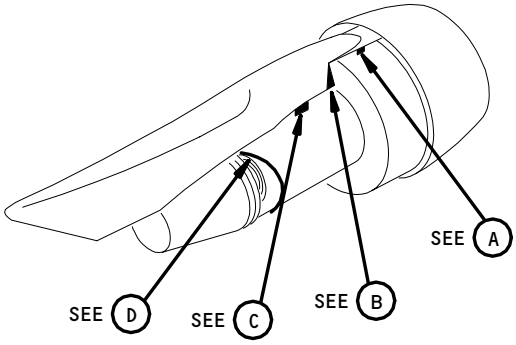
D

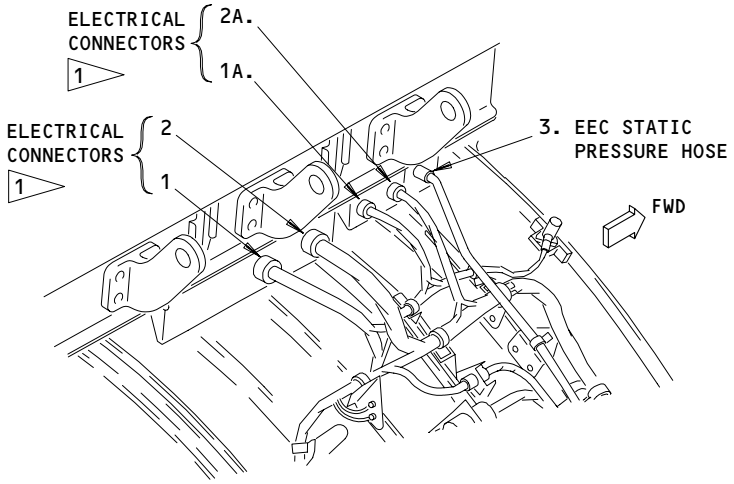
Fan and Core Cowl Hold-Open Equipment Installation
Figure 405 (Sheet 2)





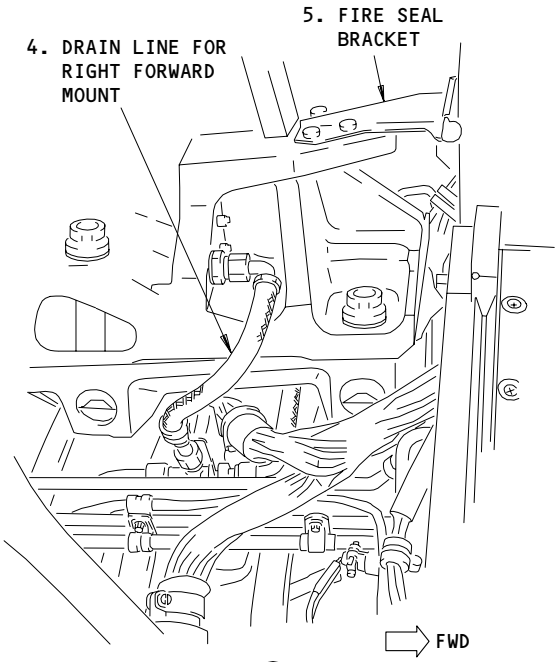
Fan and Core Cowl Hold-Open Equipment Installation
Figure 405 (Sheet 3)





ENGINES WITH SCU

A

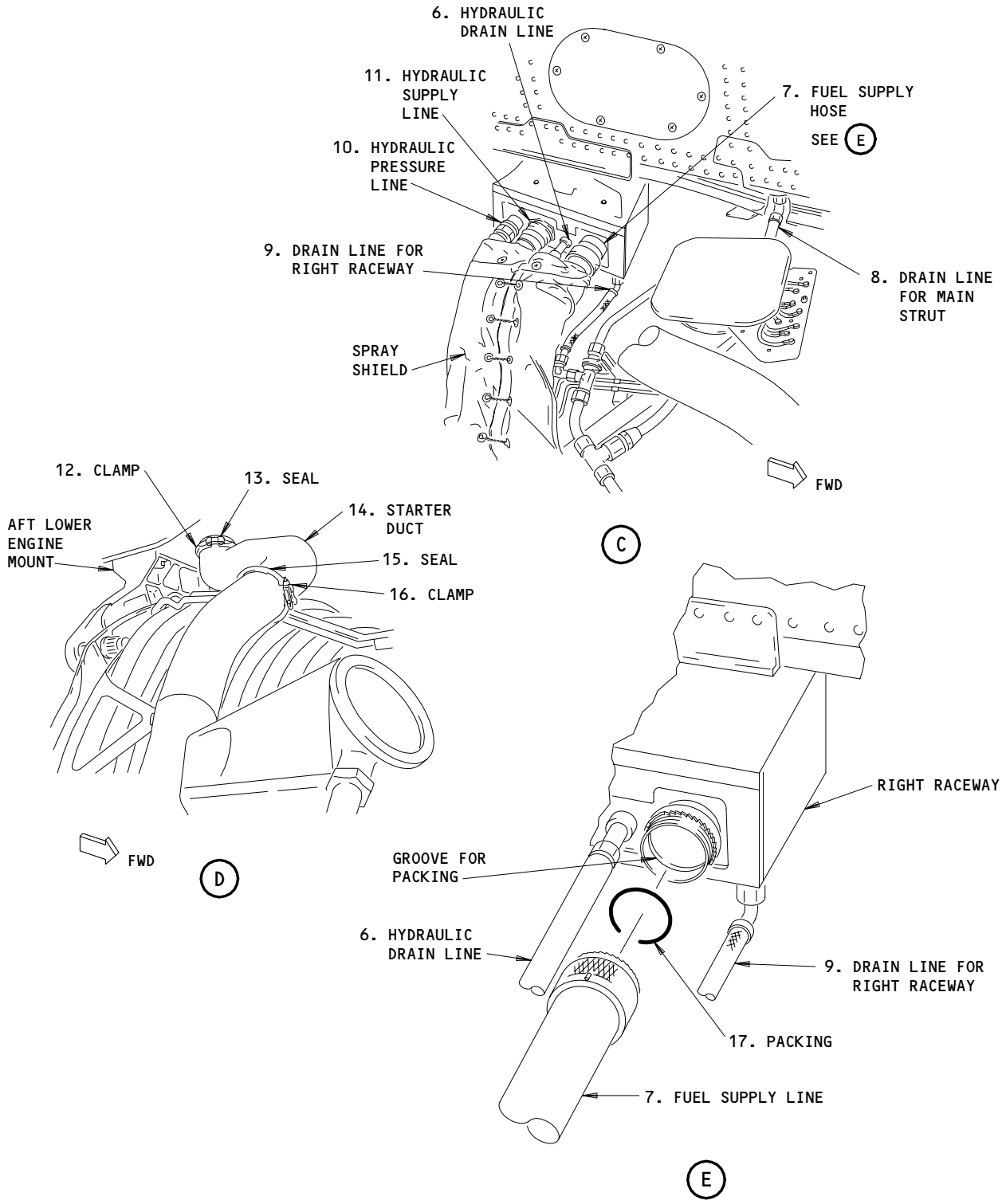


B

1

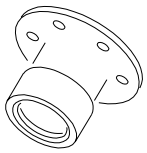
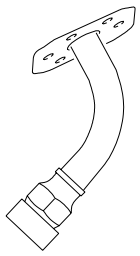
ELECTRICAL CONNECTORS IDENTIFICATION			
INDEX NO.	CONNECTOR PLUG	MATING RECEPTACLES	
		STRUT	
		LEFT	RIGHT
1	D8320P	D8320J	D8334J
2	D4224P	D4224J	D4246J
1A	D8360P	DUMMY RECEPTACLES	
2A	D8350P		

Power Plant Disconnect Locations (Right Side)
Figure 407 (Sheet 1)



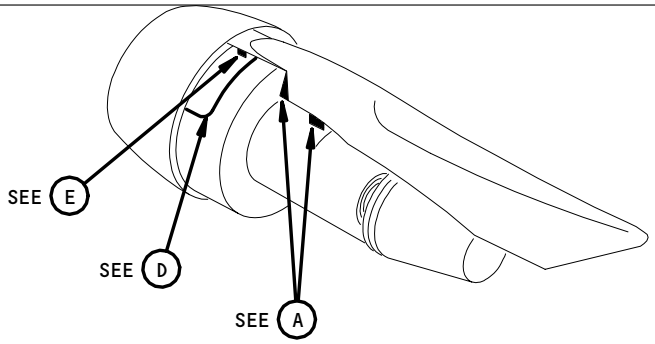
Power Plant Disconnect Locations (Right Side)
Figure 407 (Sheet 2)

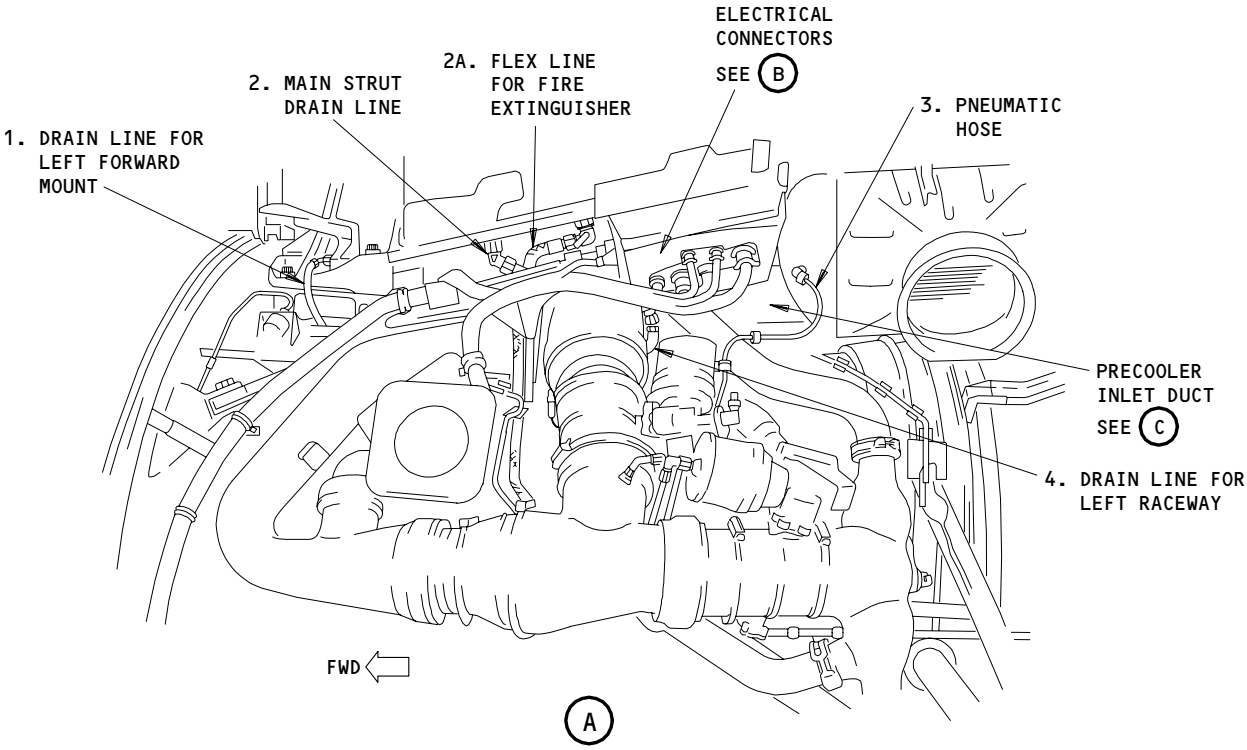
767 PW4000 ENGINE/STRUT DRAIN INSTALLATION INTERCHANGEABILITY

STRUT/ENGINE COMBINATION	PROP NO. VP832 AND PRIOR	PROP NO. RQ538 AND AFTER 1
PRIOR TO L/N 802 OR STRUT DRAIN FITTING 311T4631-1 (INCLUDES UNION MS21902J8 AND O-RING M83248-2-908) 	HOSE P/N: AS138-08N0095L	HOSE P/N: AS138-08N0095L
L/N 802 AND AFTER OR STRUT DRAIN FITTING 311T4631-2 	HOSE P/N: AS138-08N0086	HOSE P/N: AS136-08N0077

1 CORRESPONDS TO ENGINE SERIAL NUMBERS P727991-P727992, P727997-P727998, P727999-P728000, P729001-P729002, P729014-P729015, P729021-P729022, P729023-P719024, P729033-P719034, P729039-P729040, P729045-P729046.

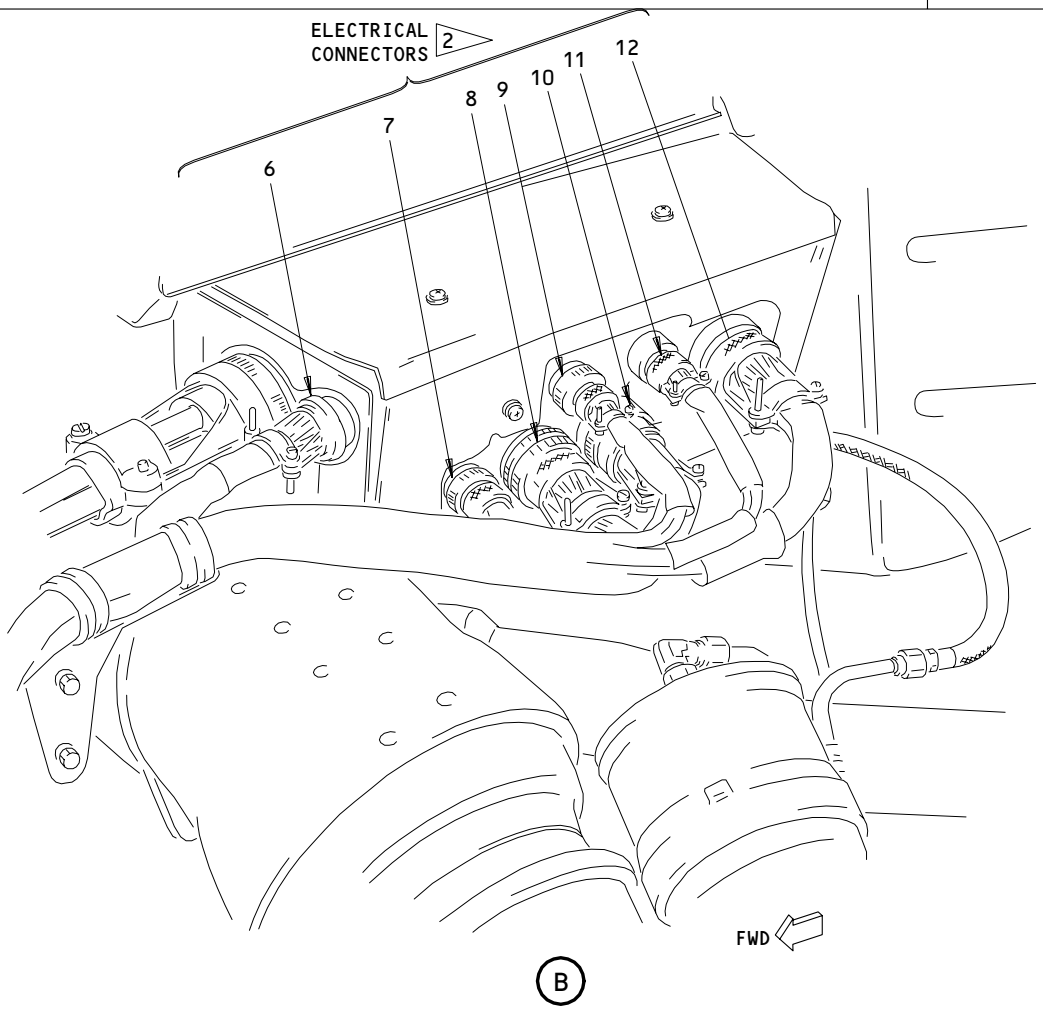
Power Plant Disconnect Locations (Right Side)
Figure 407 (Sheet 3)





1 MAKE SURE THE LOCK BOLT DOES NOT EXTEND BEYOND THE TOP OF THE DUCT INTO THE FAN COWL PANEL

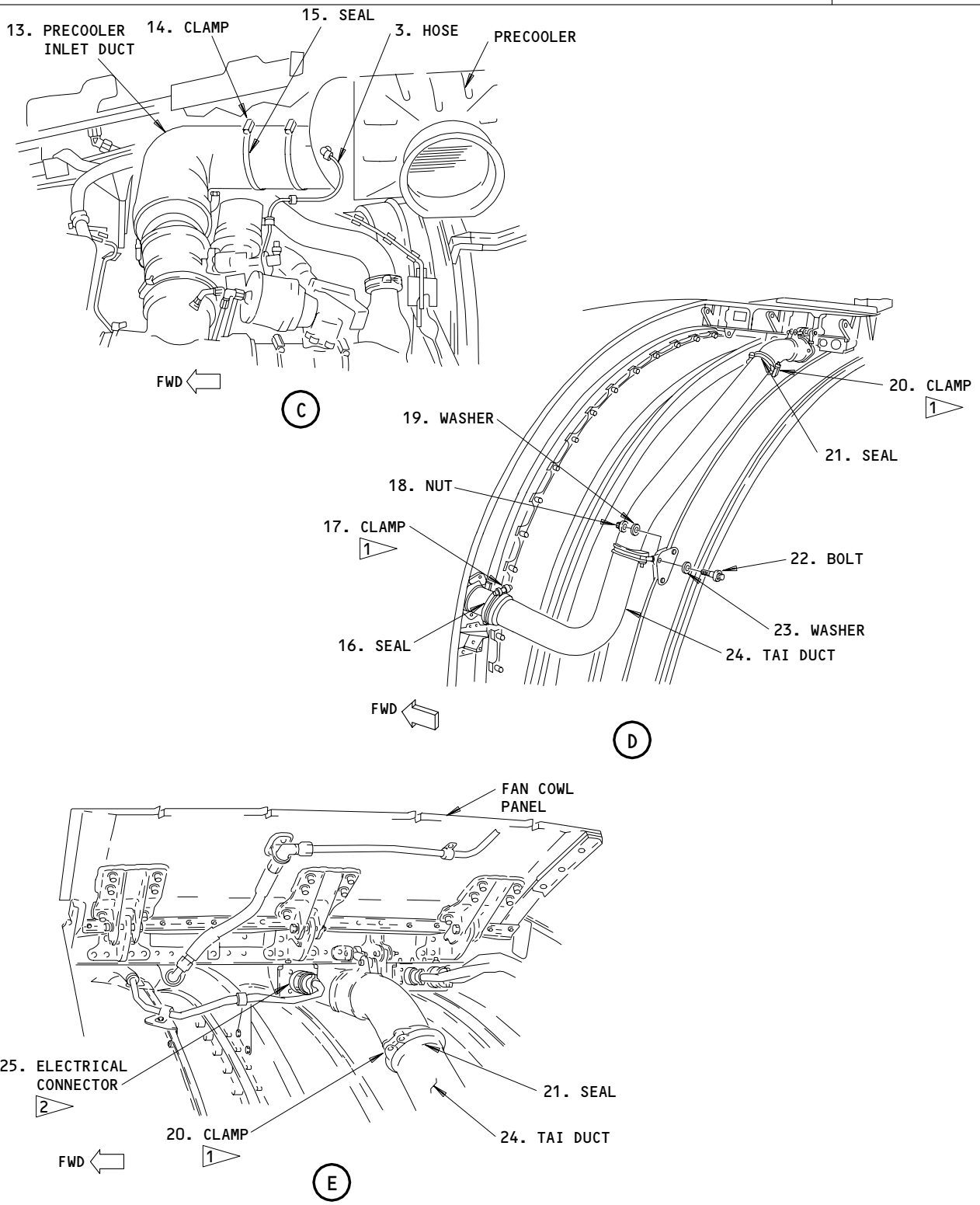
Power Plant Disconnect Locations (Left Side)
Figure 408 (Sheet 1)



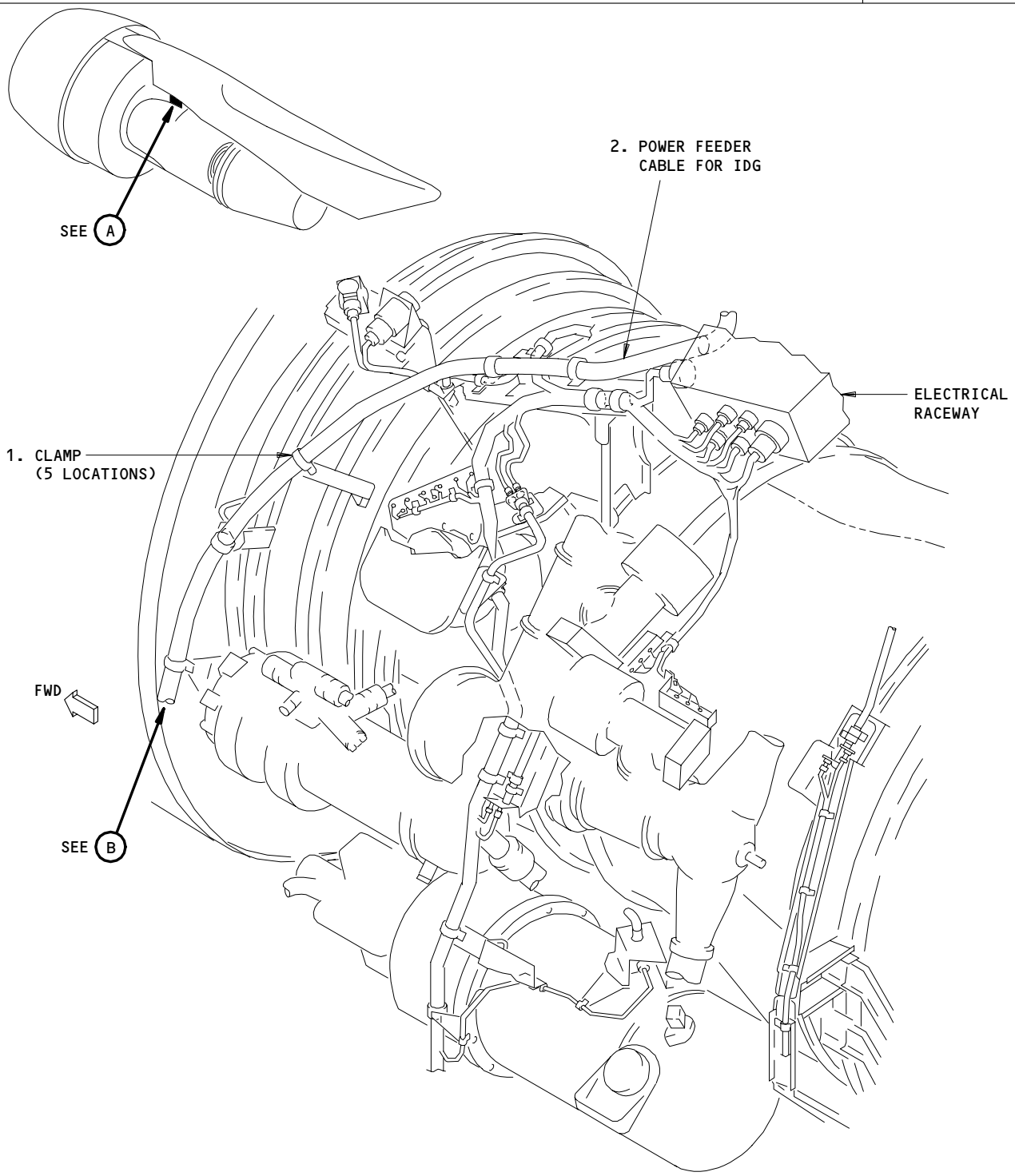
2

ELECTRICAL CONNECTORS IDENTIFICATION			
INDEX NO.	CONNECTOR PLUG	MATING RECEPTACLES STRUT LEFT	MATING RECEPTACLES STRUT RIGHT
6	D4230P	D4230J	D4220J
7	D4154P	D4154J	D4148J
8	D4208P	D4208J	D4258J
9	D4228P	D4228J	D4256J
10	D4216P	D4216J	D4266J
11	D4200P	D4200J	D4236J
12	D4232P	D4232J	D4240J
25	D8336P	D6420J	D6442J

Power Plant Disconnect Locations (Left Side)
Figure 408 (Sheet 2)

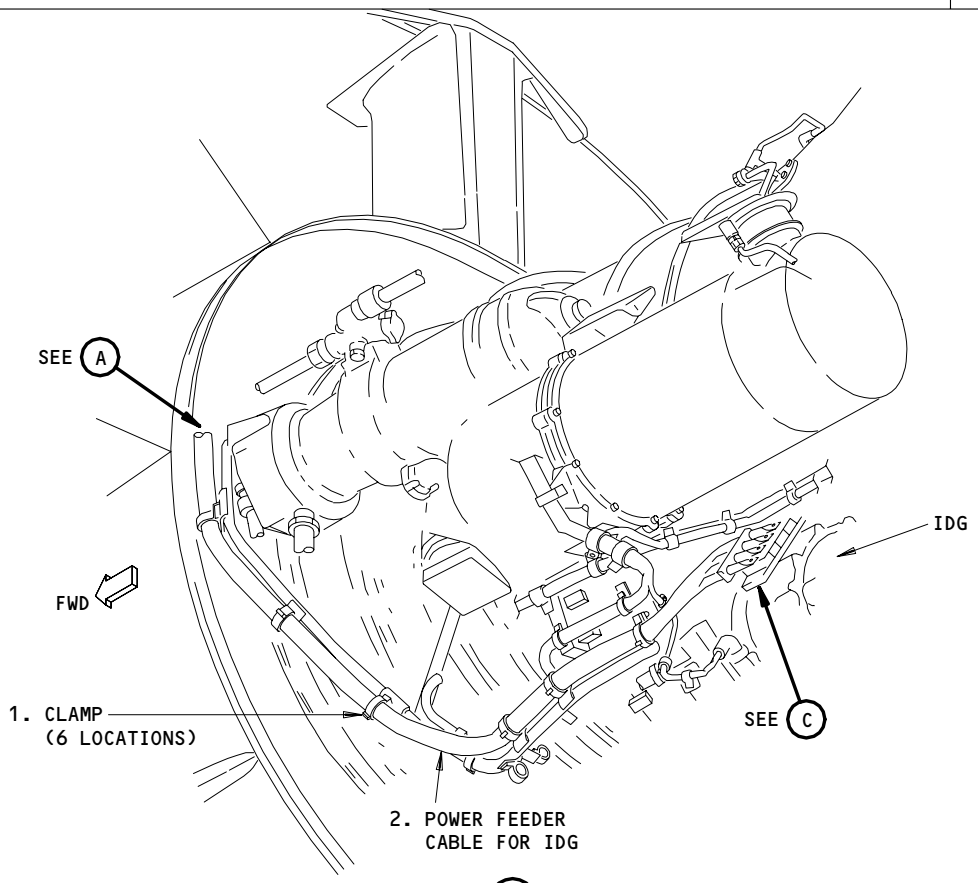


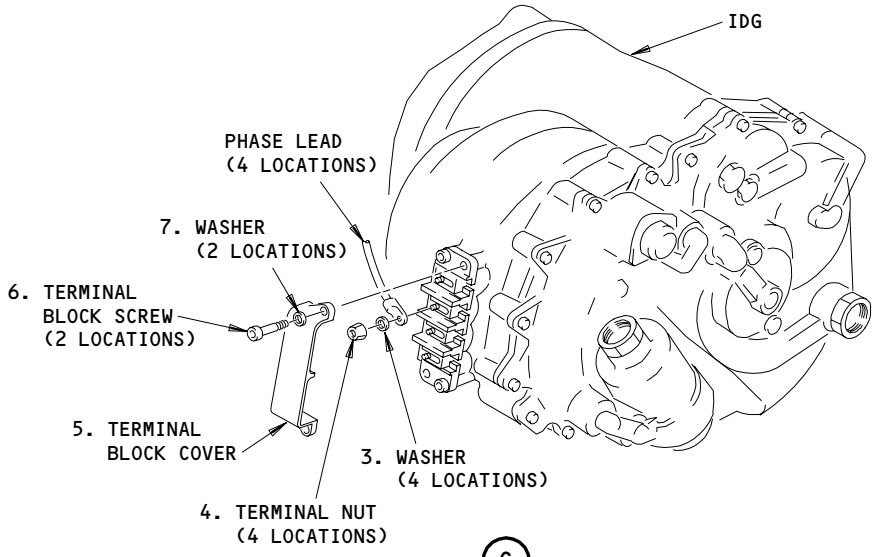
Power Plant Disconnect Locations (Left Side)
Figure 408 (Sheet 3)



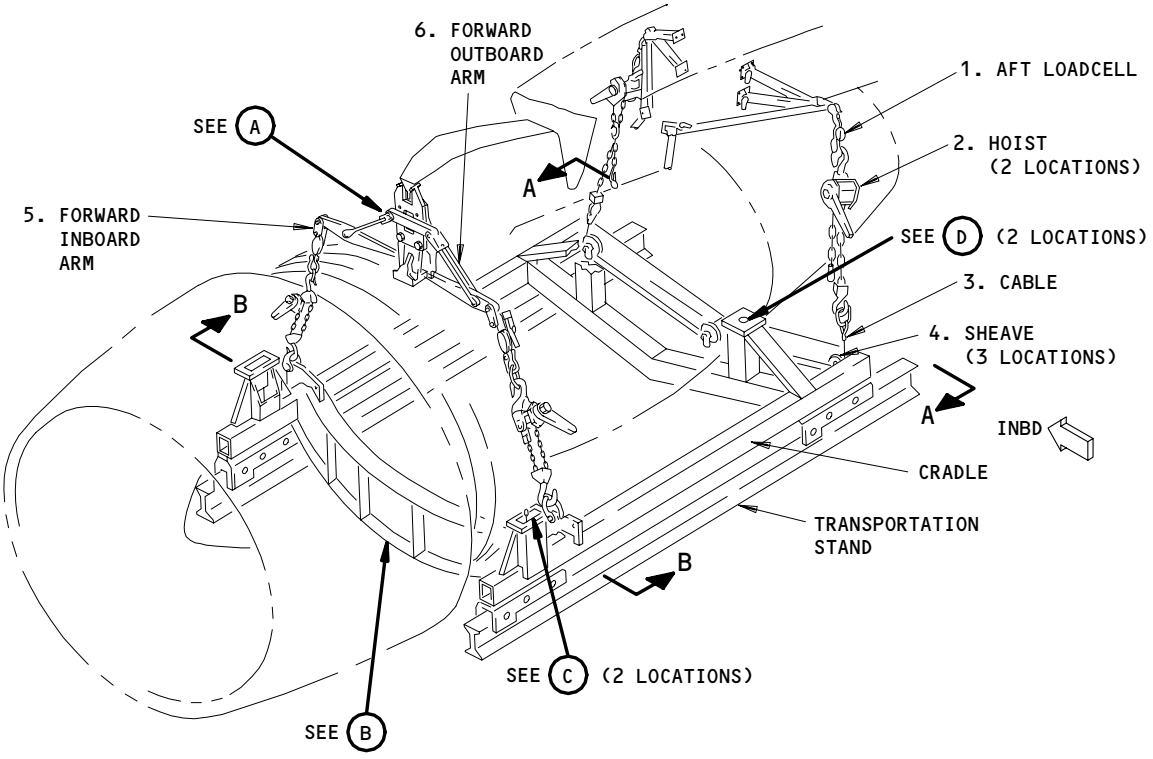
A

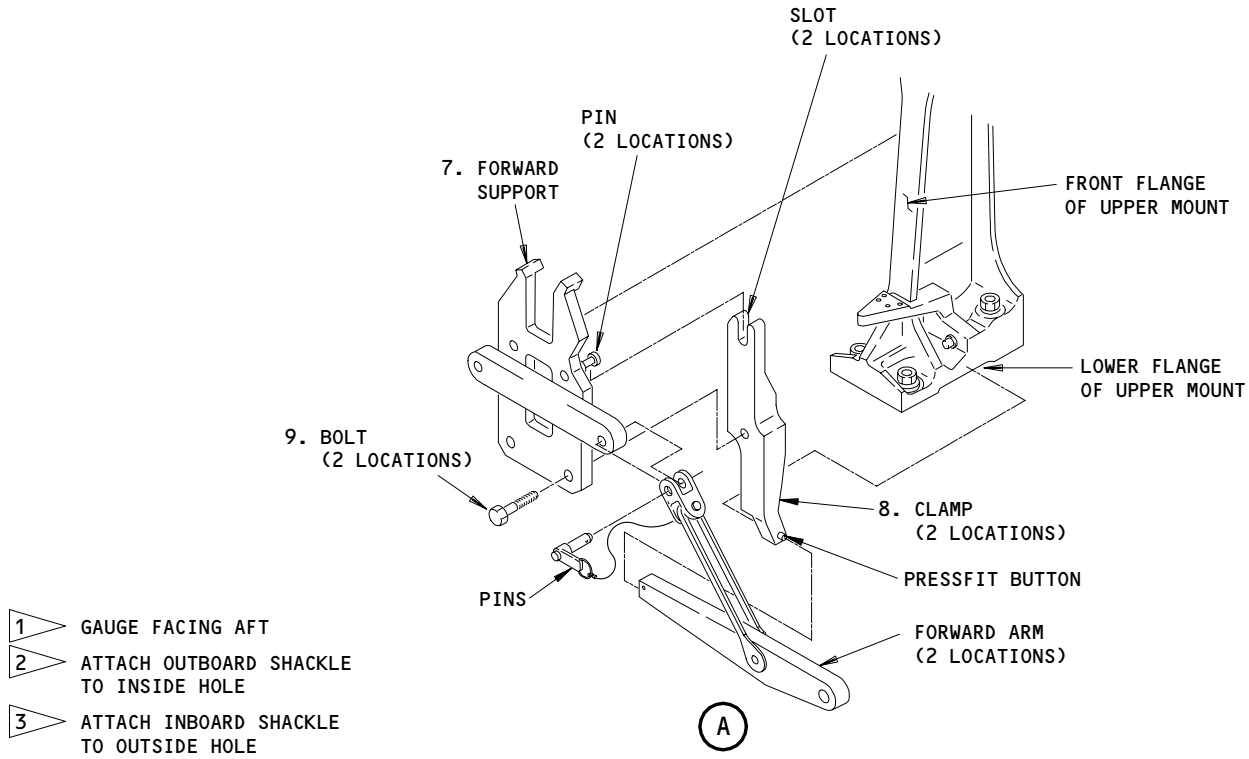
Power Feeder Wire Bundle Installation
Figure 409 (Sheet 1)



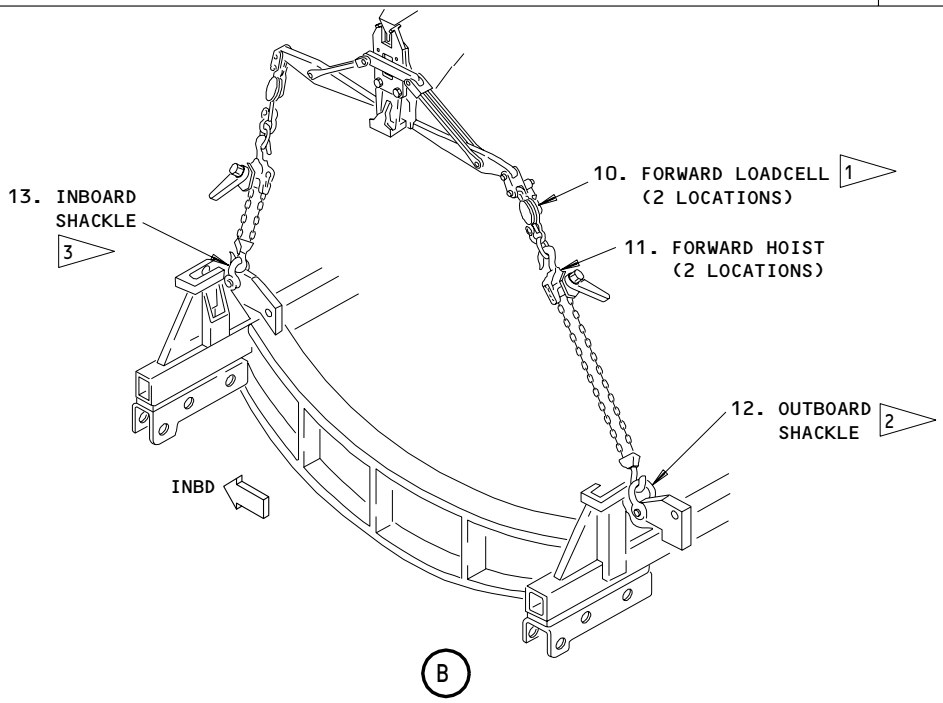


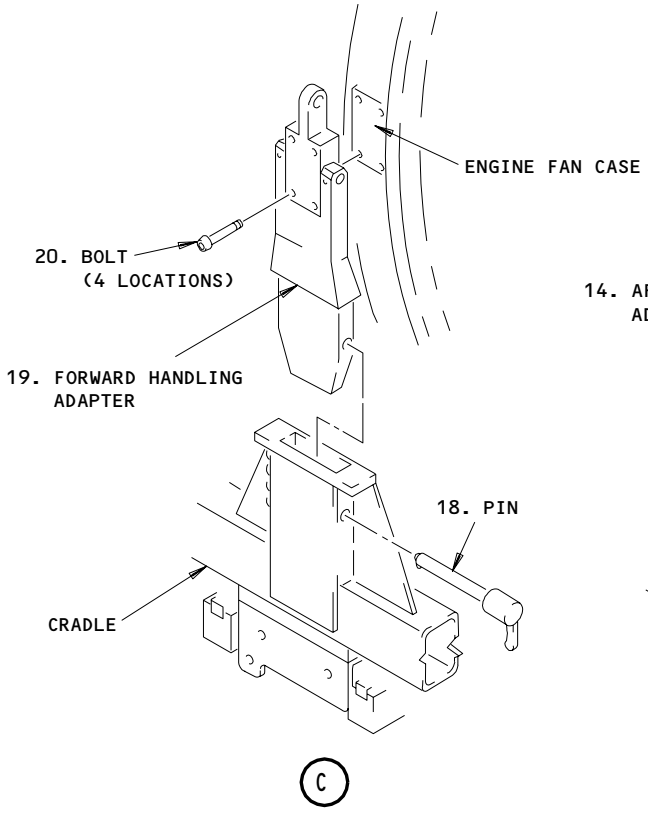
Power Feeder Wire Bundle Installation
Figure 409 (Sheet 2)

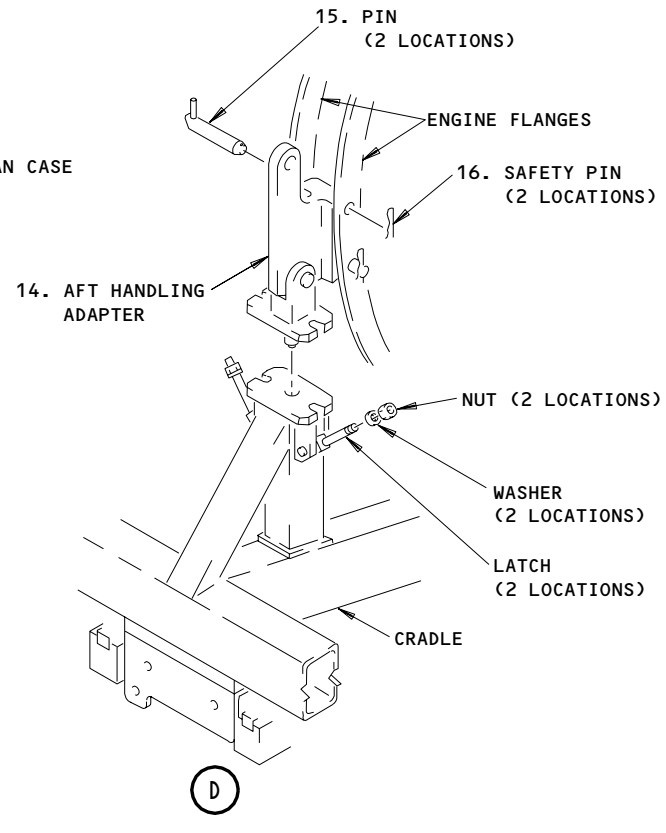




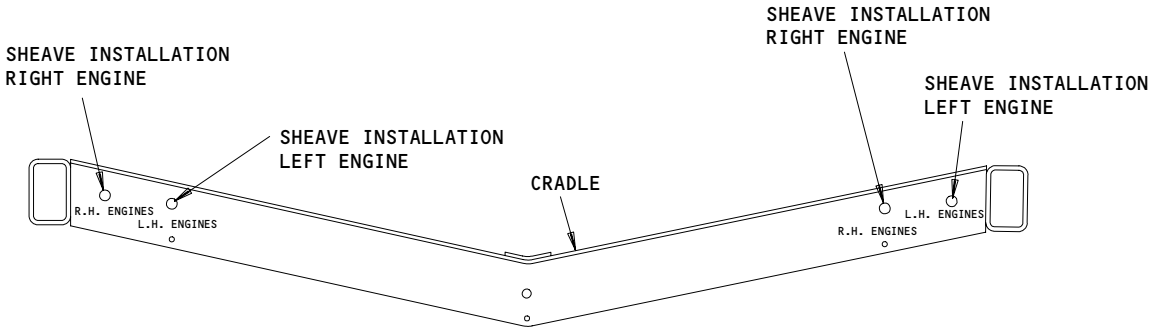
Bootstrap Equipment and Cradle Installation
Figure 411 (Sheet 1)



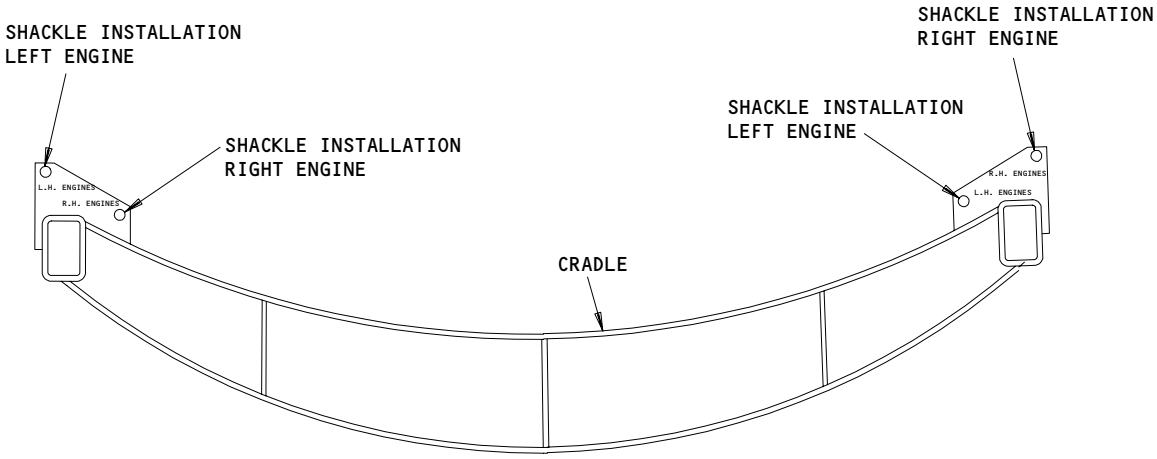




Bootstrap to Cradle Installation
Figure 411 (Sheet 2)

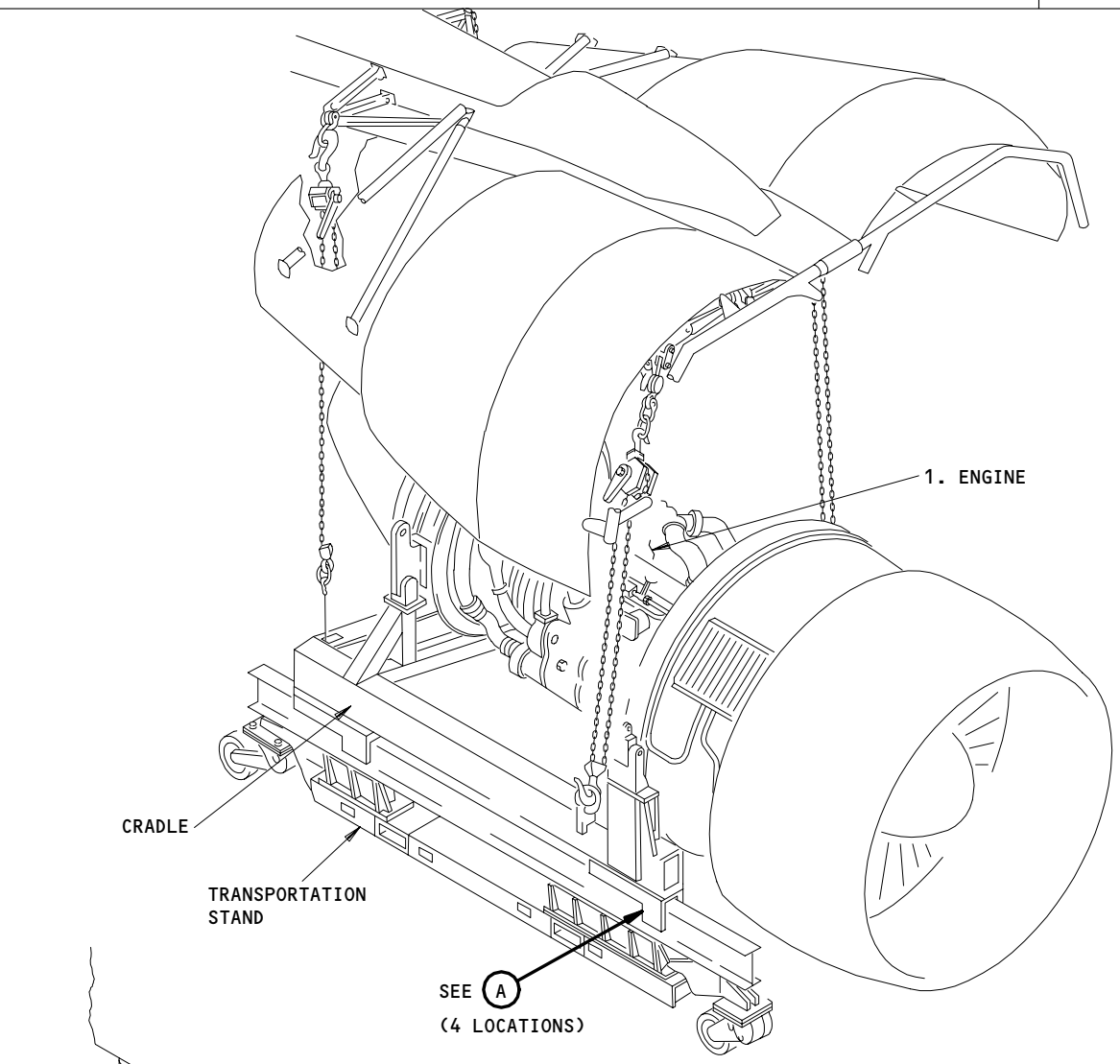


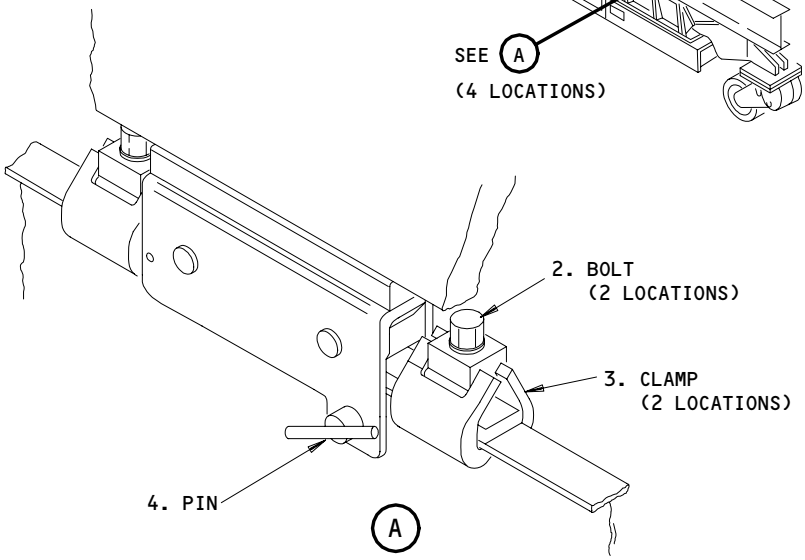
(VIEW IN THE FORWARD DIRECTION)
A-A



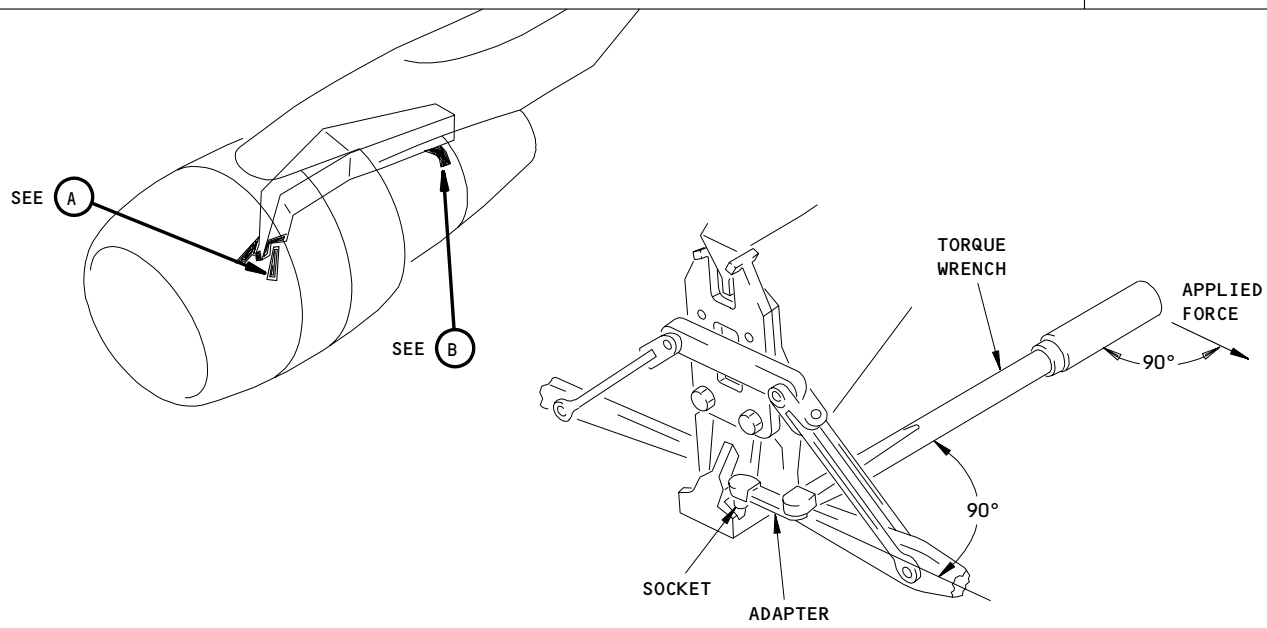
(VIEW IN THE AFT DIRECTION)
B-B

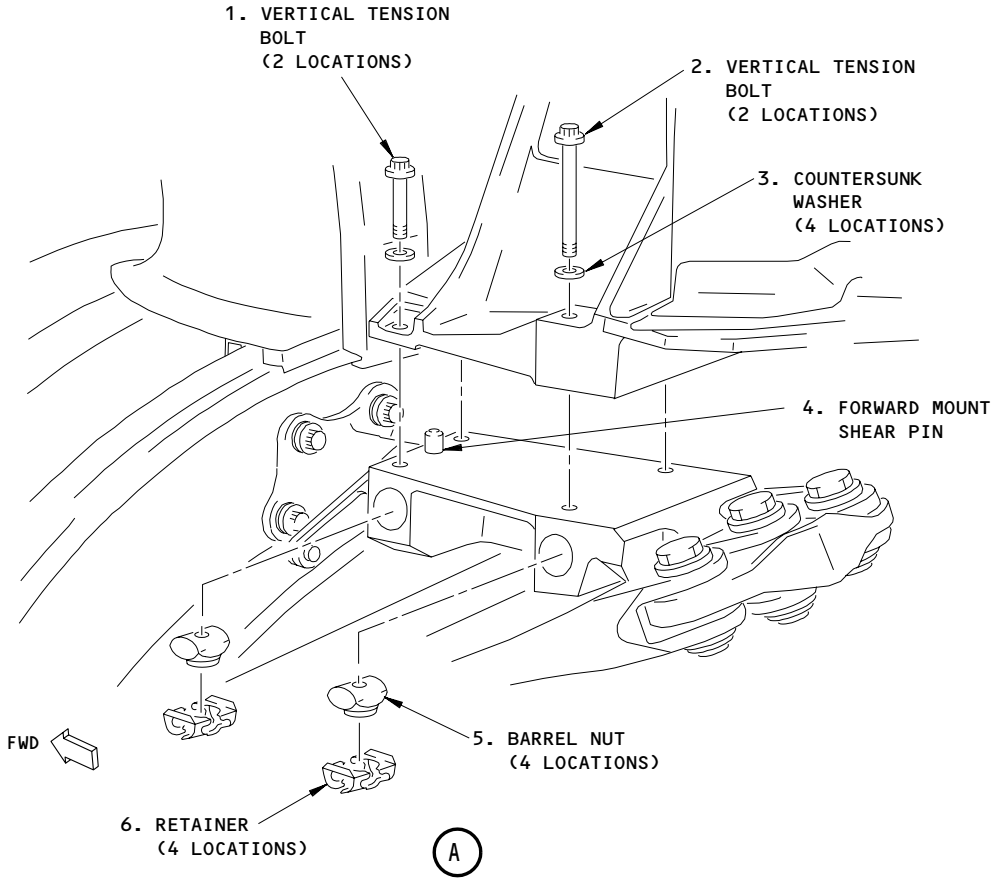
Bootstrap Equipment and Cradle Installation
Figure 411 (Sheet 3)



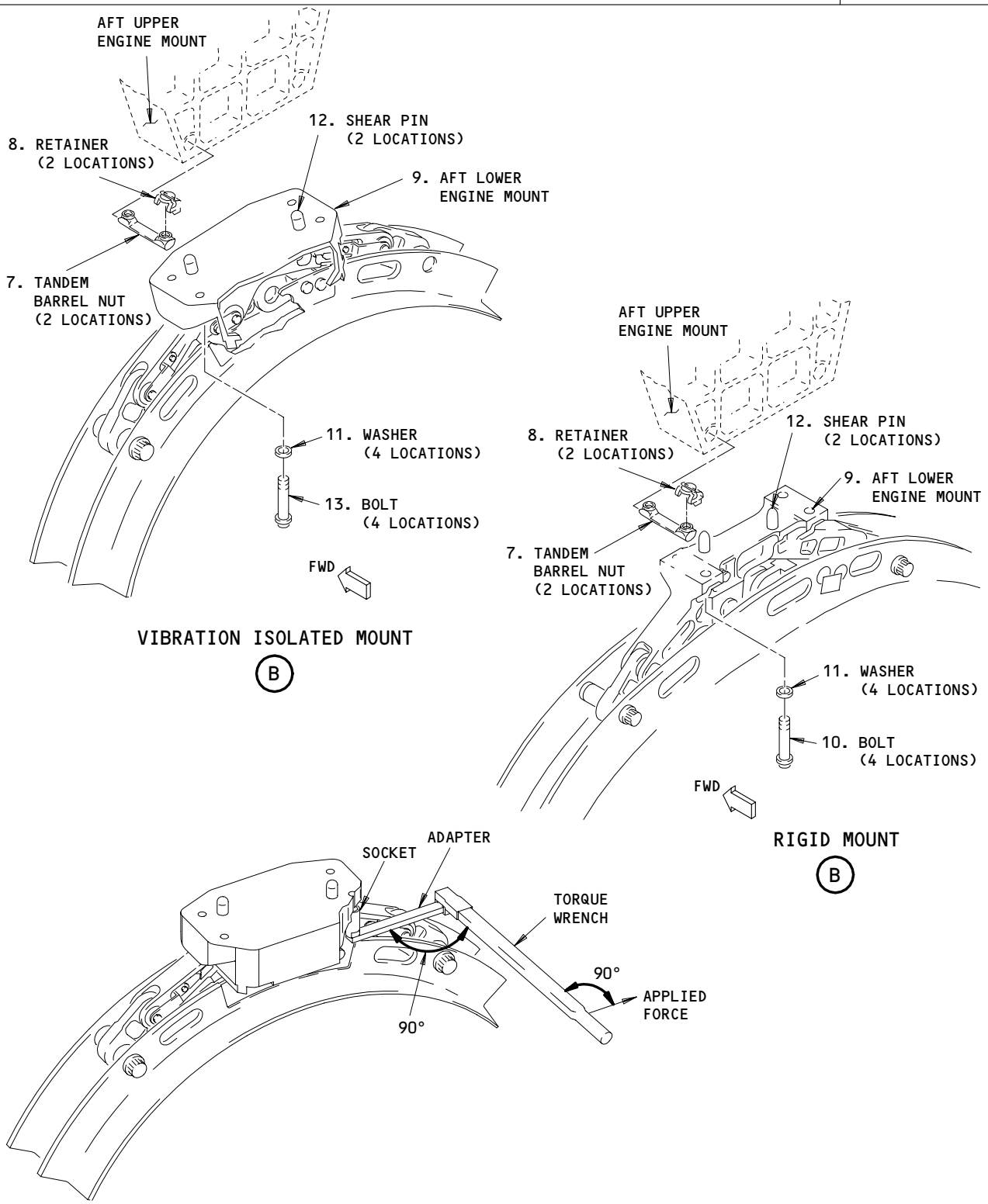


Engine to Cradle
Figure 412

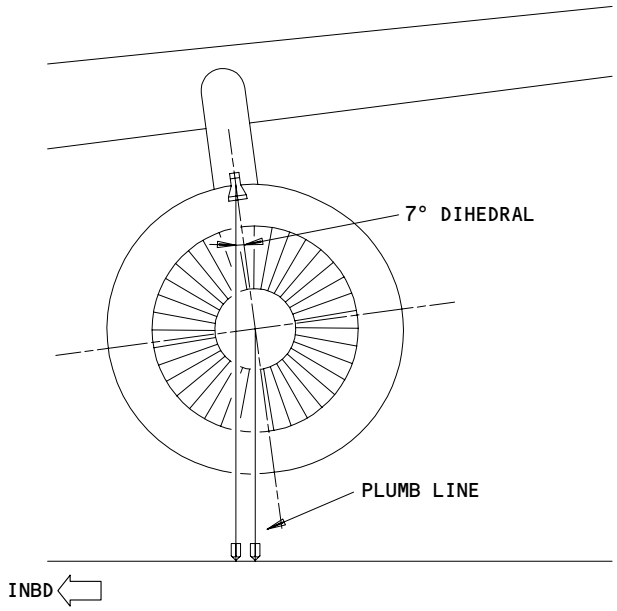


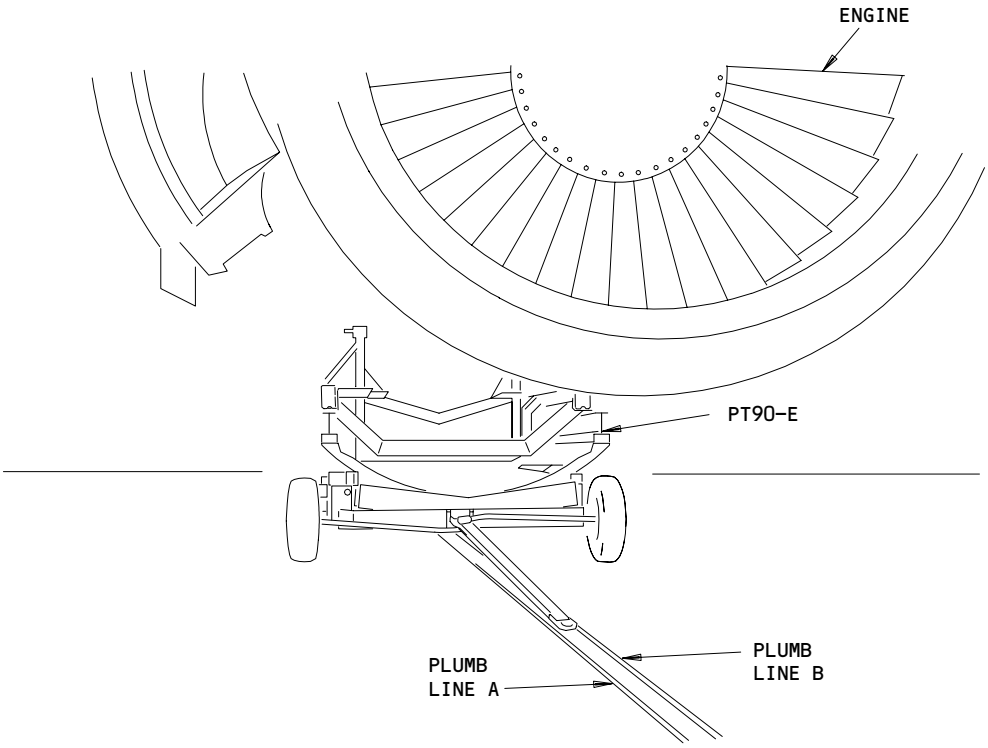


Forward and Aft Engine Mount Installation
Figure 413 (Sheet 1)

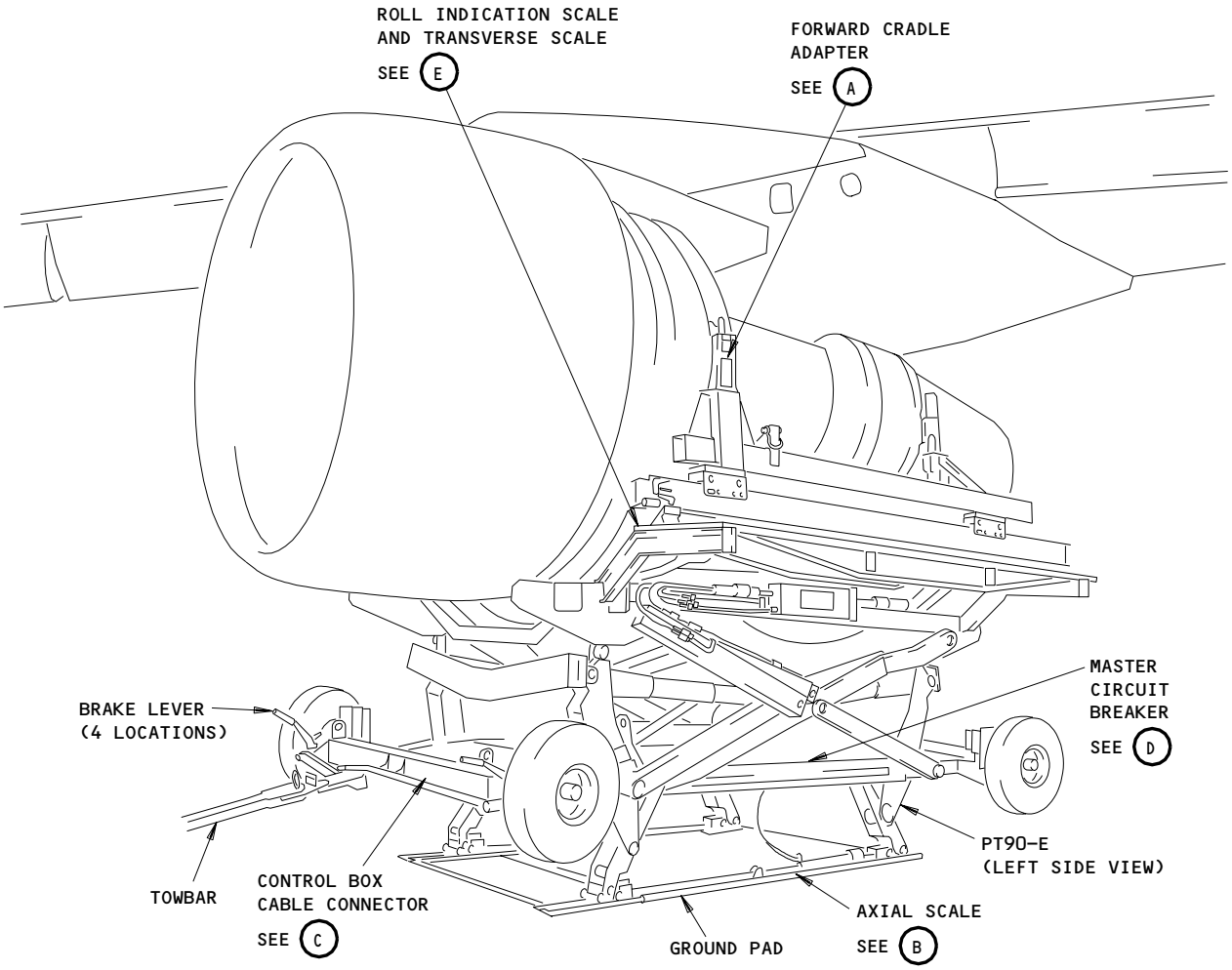


Forward and Aft Engine Mount Installation
Figure 413 (Sheet 2)

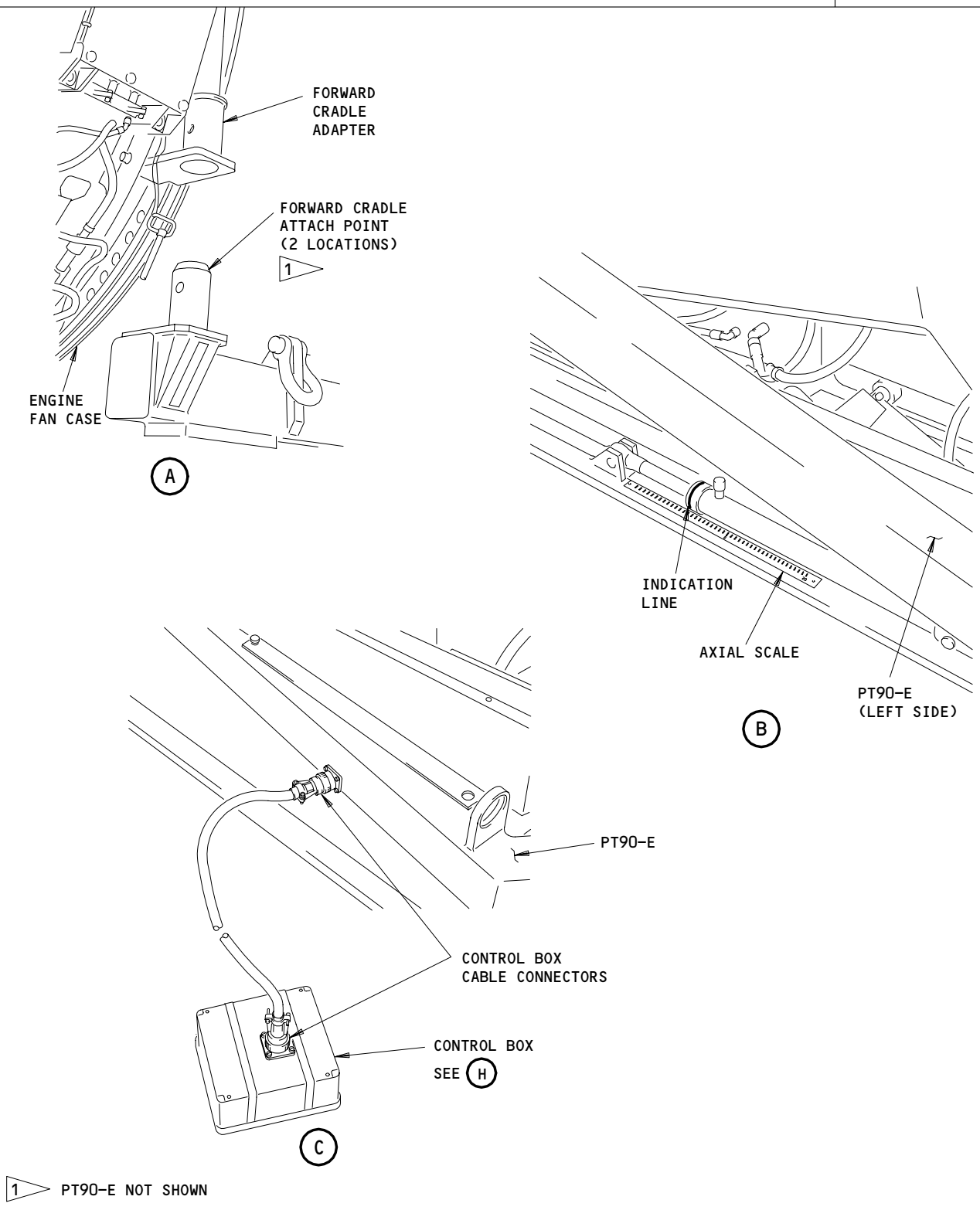




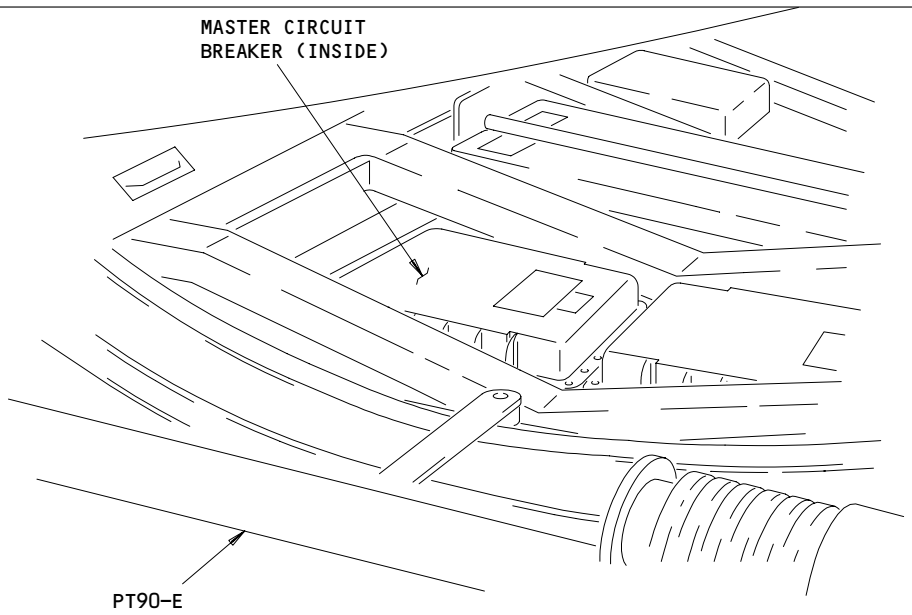
PT90-E Universal Engine Changer
Figure 414 (Sheet 1)



PT90-E Universal Engine Changer
Figure 414 (Sheet 2)

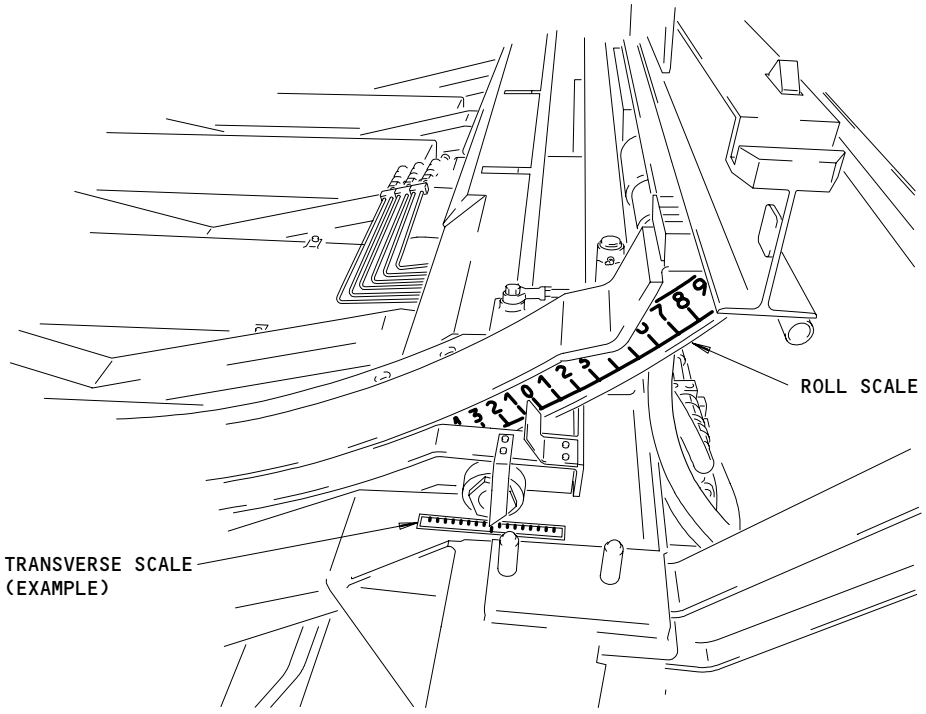


PT90-E Universal Engine Changer
Figure 414 (Sheet 3)



VIEW IN THE FORWARD DIRECTION

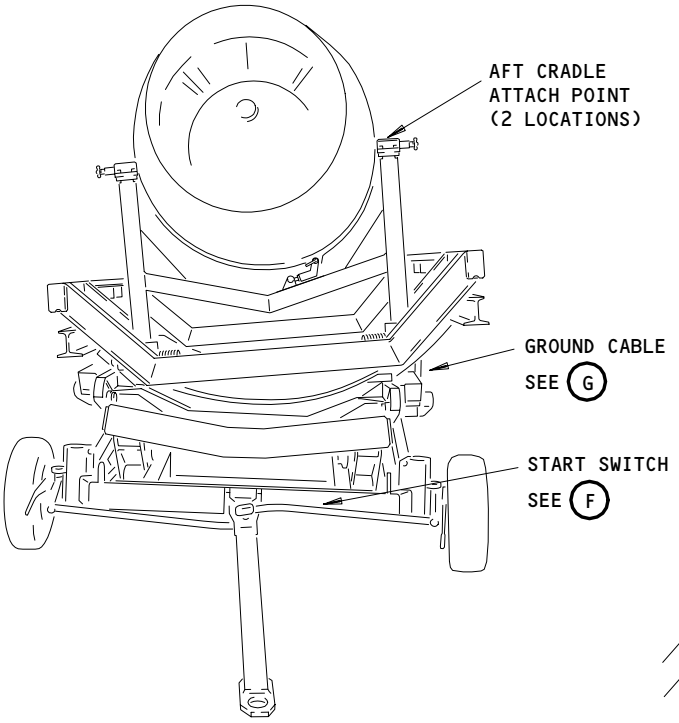
D



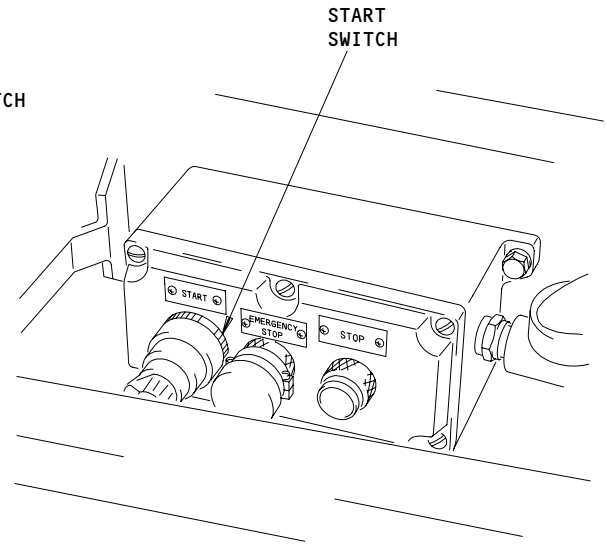
VIEW IN THE AFT DIRECTION

E

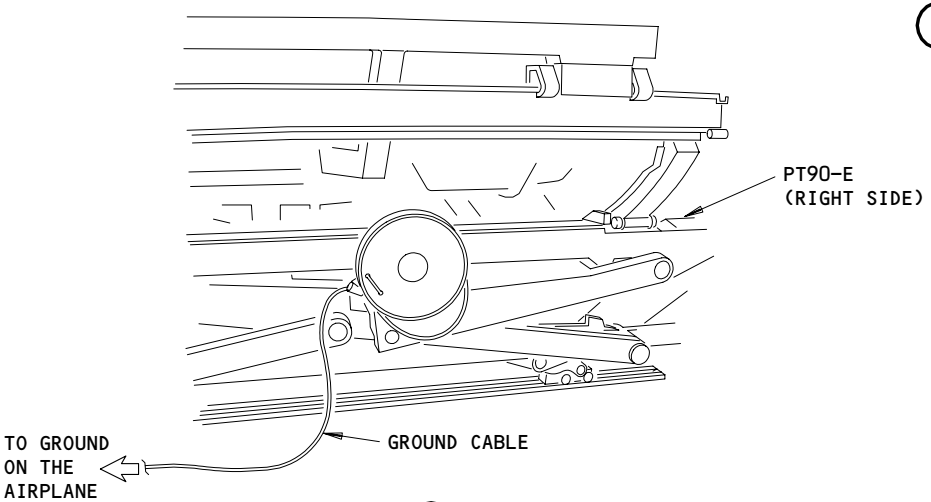
PT90-E Universal Engine Changer
Figure 414 (Sheet 4)



PT90-E
(VIEW IN THE FORWARD DIRECTION)

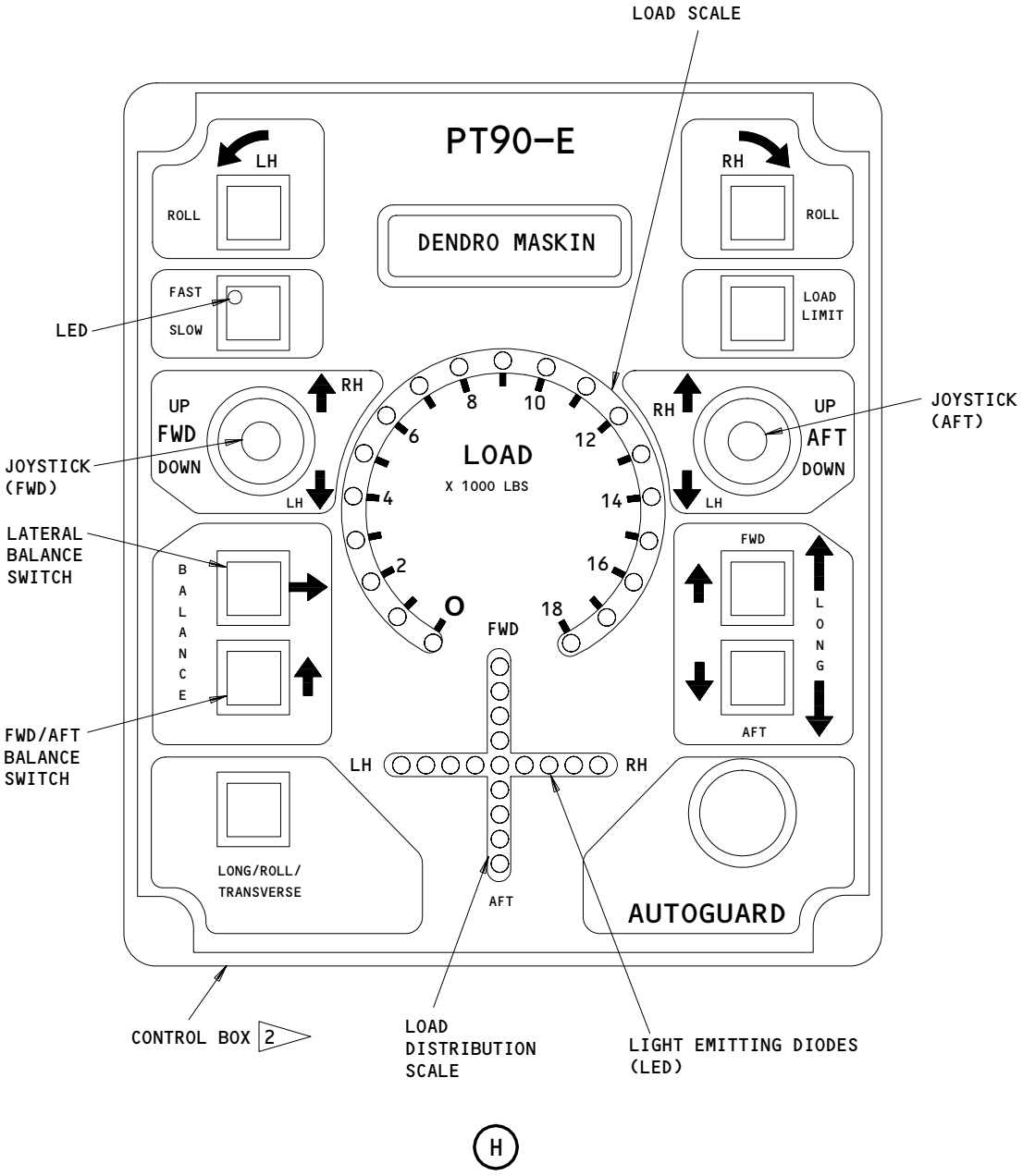


F



G

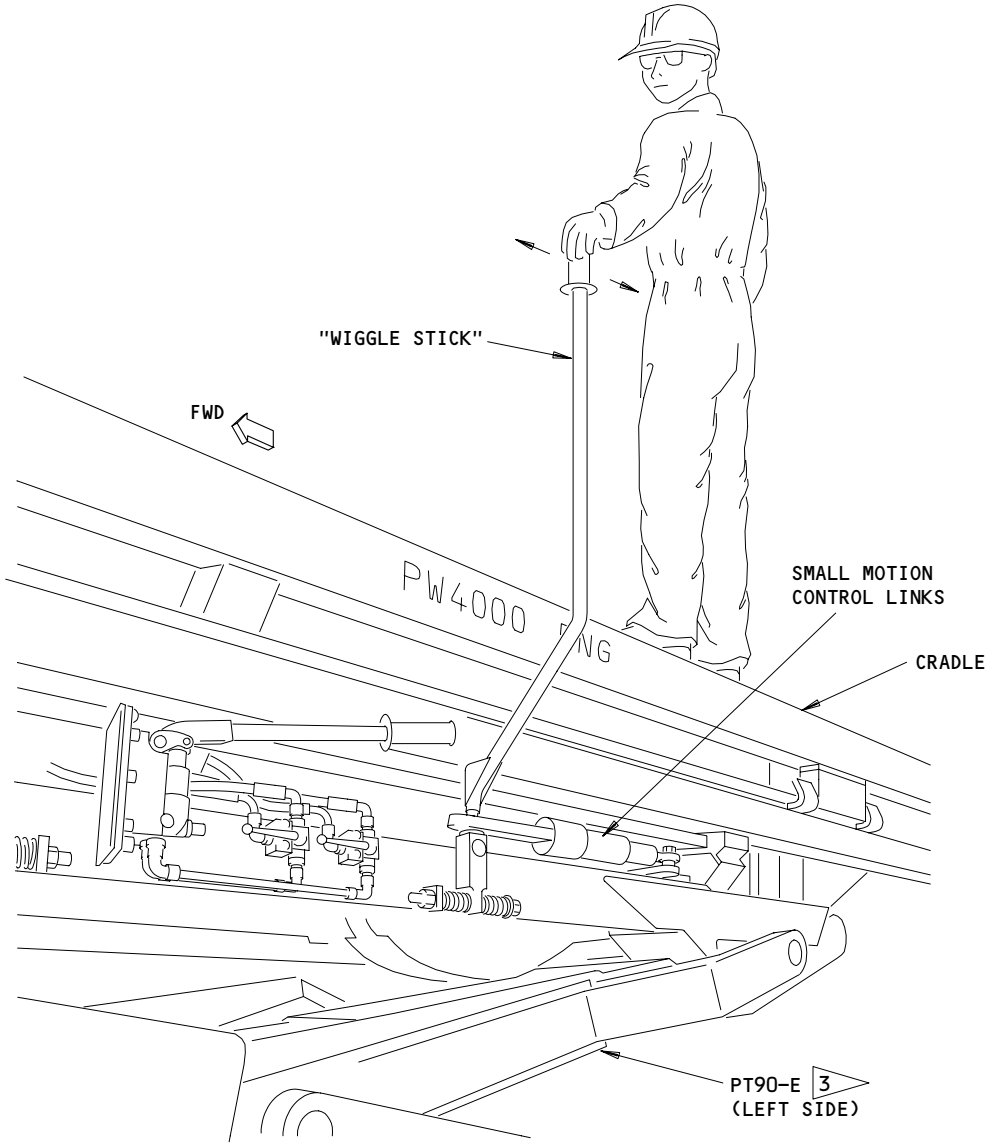
PT90-E Universal Engine Changer
Figure 414 (Sheet 5)



(H)

2 REFER TO THE DENDRO MASKIN PT90-E OPERATION AND MAINTENANCE MANUAL FOR DIRECTIONS ON HOW TO USE THE CONTROL BOX TO OPERATE THE HOIST CORRECTLY.

PT90-E Universal Engine Changer
Figure 414 (Sheet 6)



3 ENGINE NOT SHOWN FOR CLARITY

PT90-E Universal Engine Changer
Figure 414 (Sheet 7)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-401-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINES		00500 HRS	10101	005	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	EXTERNAL PORTIONS OF INLET COWL		ALL	4000

ZONES	ACCESS PANELS
412	

MECH	INSP	MPD ITEM NUMBER

VISUALLY CHECK THE EXTERNAL PORTIONS OF THE ENGINE 1 INLET COWL FOR CONDITION AND SECURITY. N71-11-01-A

EFFECTIVITY

4
5
5
9

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-401-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AIRPL	ENGINE 2		00500 HRS	10101	005	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	EXTERNAL PORTIONS OF INLET COWL		ALL	4000

ZONES	ACCESS PANELS
422	

MECH	INSP	MPD ITEM NUMBER

VISUALLY CHECK THE EXTERNAL PORTIONS OF THE ENGINE 2 INLET COWL FOR CONDITION AND SECURITY. N71-11-01-A

EFFECTIVITY

4560

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-406-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1	W-06-147-01-1	1C	11212	006	AUG 10/96

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	EXTERNAL SURFACE OF THE CORE COWLS		ALL	4000

ZONES	ACCESS PANELS
417 418	

MECH	INSP	MPD ITEM NUMBER

VISUALLY CHECK THE EXTERNAL SURFACE OF THE ENGINE 1 CORE COWLS FOR CONDITION. N71-00-00-E

EFFECTIVITY

CHECK/INSP	EXTERNAL SURFACE OF THE CORE COWLS
N71-00-00-E	71-406-01-1 PAGE 1 OF 1 AUG 10/96

4
5
6
1

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-406-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2	W-06-147-01-2	1C	11212	006	AUG 10/96

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	EXTERNAL SURFACE OF THE CORE COWLS		ALL	4000

ZONES	ACCESS PANELS
427 428	

MECH	INSP	MPD ITEM NUMBER

VISUALLY CHECK THE EXTERNAL SURFACE OF THE ENGINE 2 CORE COWLS FOR CONDITION. N71-00-00-E

EFFECTIVITY

CHECK/INSP	EXTERNAL SURFACE OF THE CORE COWLS
N71-00-00-E	71-406-01-2 PAGE 1 OF 1 AUG 10/96

4
5
6
2

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-408-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1	W-06-149-01	1C	11212	006	MAY 10/89

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	CORE COWL PRESSURE RELIEF DOORS		ALL	4000

ZONES	ACCESS PANELS
417	417BL 417CL 418BR 418CR

MECH	INSP	MPD ITEM NUMBER

VISUALLY CHECK THE ENGINE 1 CORE COWL PRESSURE RELIEF DOORS FOR CONDITION AND SECURITY. N71-00-00-G

EFFECTIVITY

CHECK/INSP	CORE COWL PRESSURE RELIEF DOORS
N71-00-00-G	71-408-01-1 PAGE 1 OF 1 MAY 10/89

4
5
6
3

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-408-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2	W-06-149-01	1C	11212	006	MAY 10/89

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	CORE COWL PRESSURE RELIEF DOORS		ALL	4000

ZONES	ACCESS PANELS
427	427BL 427CL 428BR 428CR

MECH	INSP	MPD ITEM NUMBER

VISUALLY CHECK THE ENGINE 2 CORE COWL PRESSURE RELIEF DOORS FOR CONDITION AND SECURITY. N71-00-00-G

EFFECTIVITY

CHECK/INSP	CORE COWL PRESSURE RELIEF DOORS
N71-00-00-G	71-408-01-2 PAGE 1 OF 1 MAY 10/89

4 5 6 4

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-409-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		1C	11212	005	AUG 10/88

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	LEFT INLET COWL ACOUSTIC PANELS		ALL	4000

ZONES	ACCESS PANELS
412	

MECH	INSP	MPD ITEM NUMBER
		N71-11-00-A

VISUALLY CHECK THE ENGINE 1 INLET COWL ACOUSTIC PANELS FOR CONDITION AND SECURITY.

EFFECTIVITY

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-409-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		1C	11212	005	AUG 10/88

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	RIGHT INLET COWL ACOUSTIC PANELS		ALL	4000

ZONES	ACCESS PANELS
422	

MECH	INSP	MPD ITEM NUMBER
		N71-11-00-A

VISUALLY CHECK THE ENGINE 2 INLET COWL ACOUSTIC PANELS FOR CONDITION AND SECURITY.

EFFECTIVITY

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-410-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1	W-06-145-01	1C	11212	006	AUG 10/98

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENG 1 FORWARD ENG MOUNT COMPONENTS		ALL	4000

ZONES	ACCESS PANELS
411	415AL 416AR

MECH	INSP	MPD ITEM NUMBER
		N71-21-00-A

VISUALLY CHECK THE VISIBLE PORTIONS OF THE ENGINE 1 FORWARD MOUNT THRUST LINKS, EVENER BAR AND LOWER FITTING FOR CONDITION AND SECURITY.

EFFECTIVITY

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-410-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2	W-06-145-01	1C	11212	006	MAY 10/89

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENG 2 FORWARD ENG MOUNT COMPONENTS		ALL	4000

ZONES	ACCESS PANELS
421	425AL 426AR

MECH	INSP	MPD ITEM NUMBER
		N71-21-00-A

VISUALLY CHECK THE VISIBLE PORTIONS OF THE ENGINE 2 FORWARD MOUNT THRUST LINKS, EVENER BAR AND LOWER FITTING FOR CONDITION AND SECURITY.

EFFECTIVITY

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-412-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		00500 HRS	10101	006	DEC 22/07

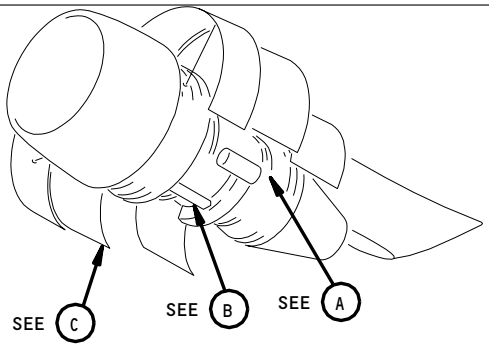
TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 1 ENGINE DRAIN SYSTEM		ALL	4000

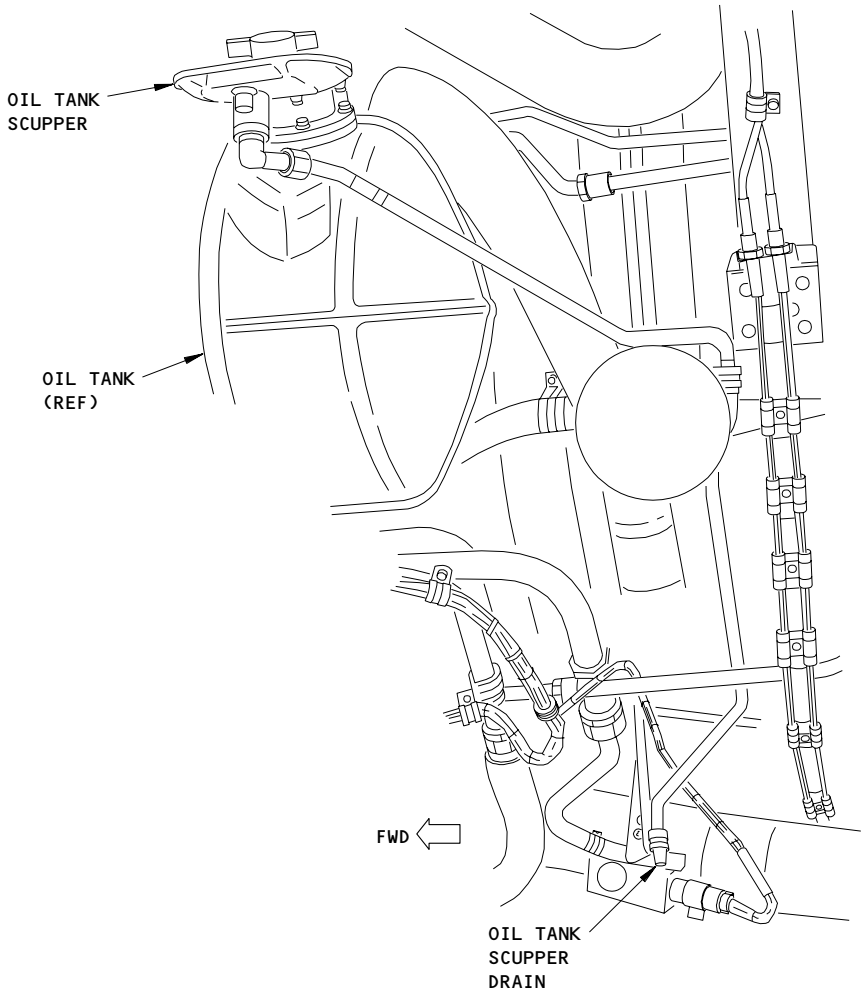
ZONES	ACCESS PANELS
411	415AL 416AR

MECH	INSP	MPD ITEM NUMBER
		N71-71-00-6A

VISUALLY CHECK THE ENGINE 1 ENGINE DRAIN SYSTEM FOR CONDITION AND SECURITY.

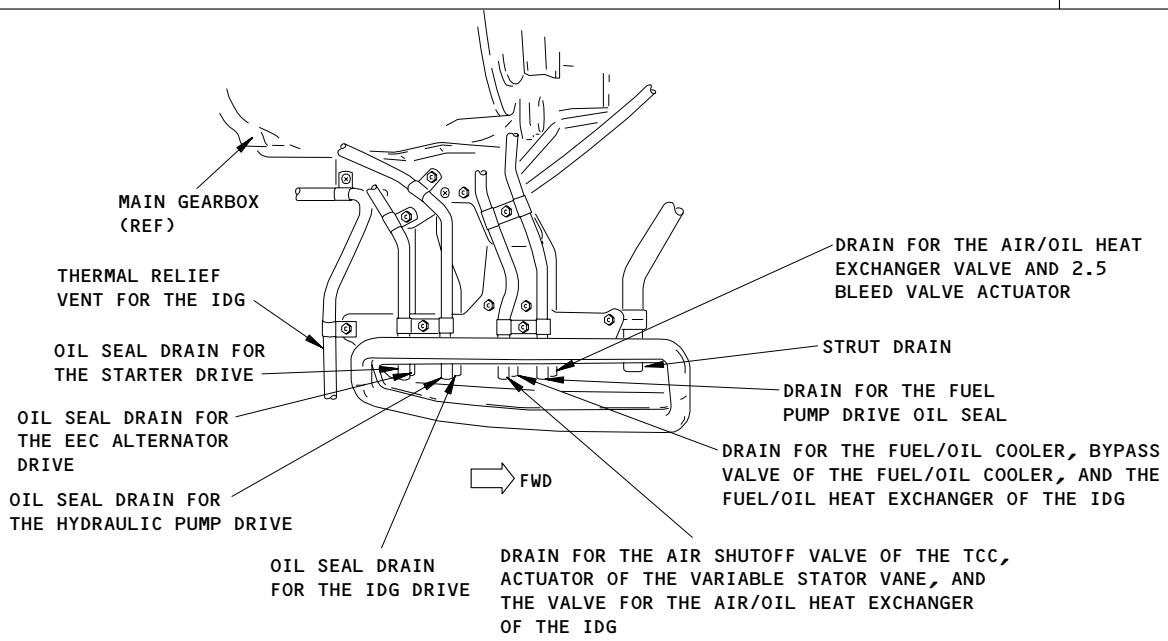
EFFECTIVITY





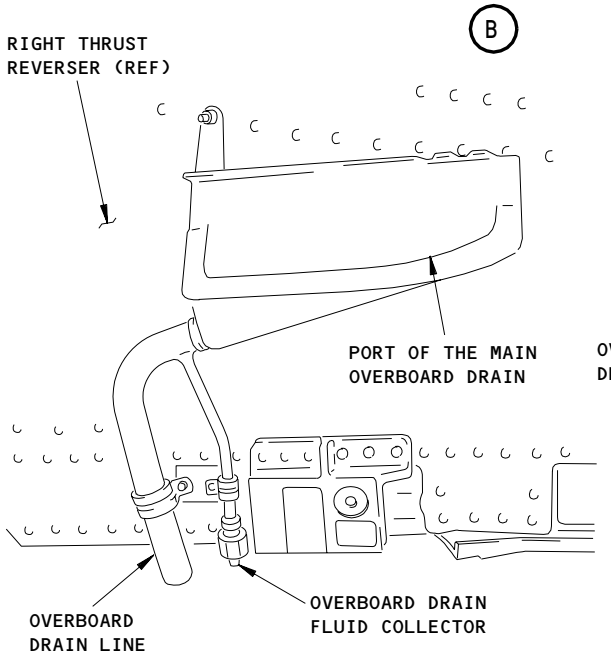
AFT DRAIN
A

Engine Vents and Drains
Figure 601 (Sheet 1)



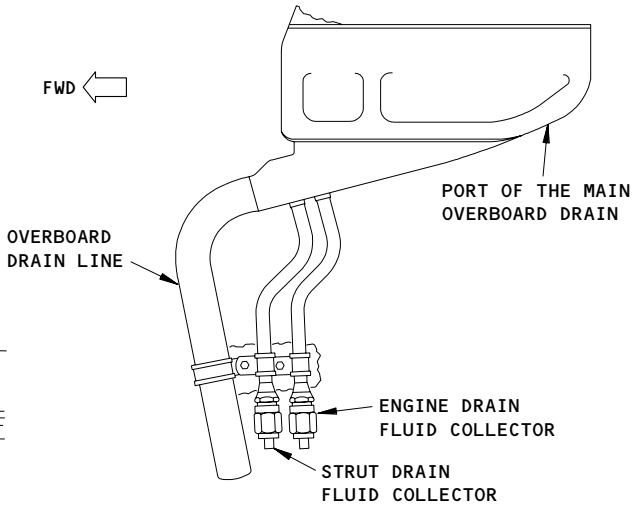
DRAIN COLLECTOR

(B)



OVERBOARD DRAIN

(C) 1



OVERBOARD DRAIN

(C) 2

1 AIRPLANES WITH ONE FLUID COLLECTOR TUBE FOR THE OVERBOARD DRAIN

2 AIRPLANES WITH TWO FLUID COLLECTOR TUBES FOR THE OVERBOARD DRAIN

Engine Vents and Drains
Figure 601 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-412-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		00500 HRS	10101	006	DEC 22/07

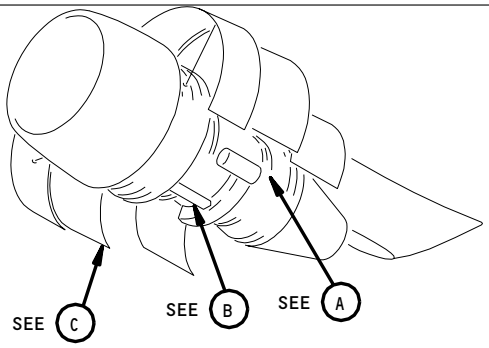
TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 2 ENGINE DRAIN SYSTEM		ALL	4000

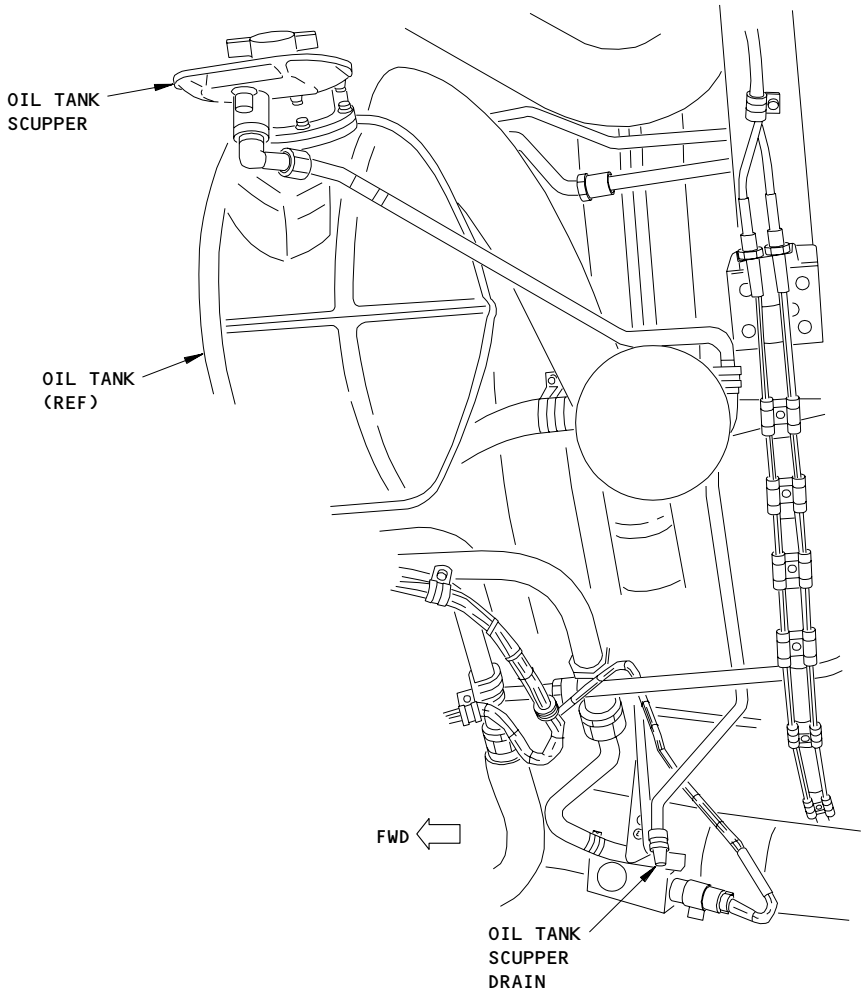
ZONES	ACCESS PANELS
421	425AL 426AR

MECH	INSP	MPD ITEM NUMBER
		N71-71-00-6A

VISUALLY CHECK THE ENGINE 2 ENGINE DRAIN SYSTEM FOR CONDITION AND SECURITY.

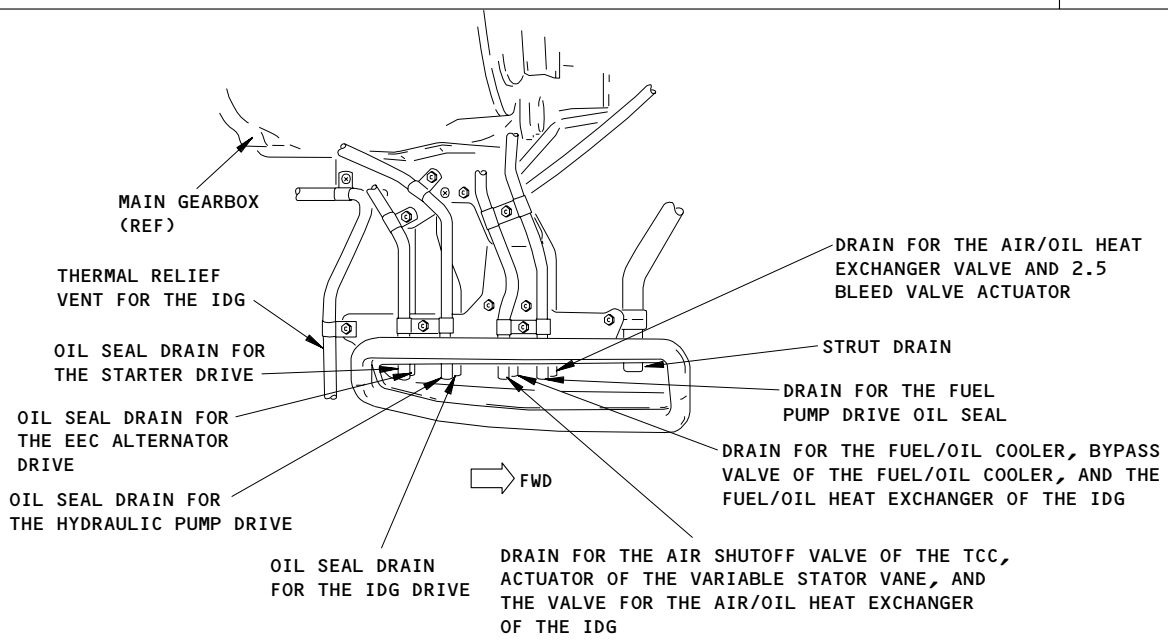
EFFECTIVITY





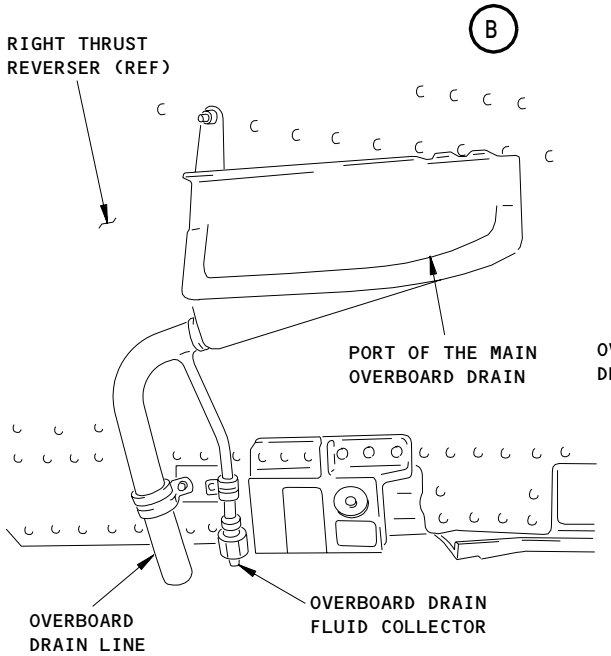
AFT DRAIN
A

Engine Vents and Drains
Figure 601 (Sheet 1)



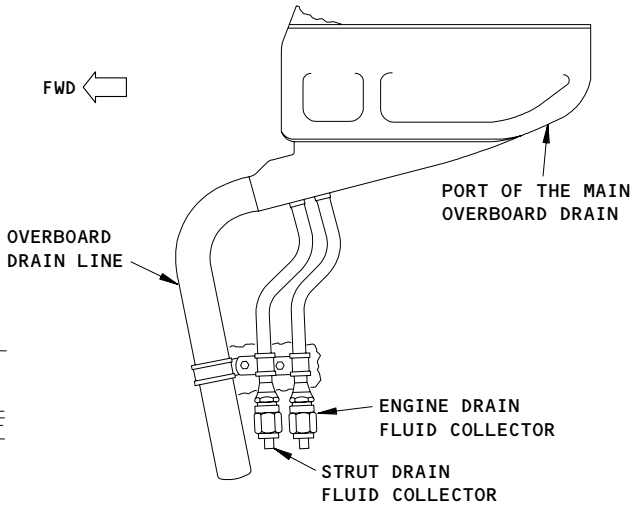
DRAIN COLLECTOR

(B)



OVERBOARD DRAIN

(C) 1



OVERBOARD DRAIN

(C) 2

1 AIRPLANES WITH ONE FLUID COLLECTOR TUBE FOR THE OVERBOARD DRAIN

2 AIRPLANES WITH TWO FLUID COLLECTOR TUBES FOR THE OVERBOARD DRAIN

Engine Vents and Drains
Figure 601 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-413-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
SHOPS	ENGINES		ENG CNG	99XXX	006	FEB 10/92

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	ENGINE DRAIN LINES		ALL	4000

ZONES	ACCESS PANELS
411 421	

MECH	INSP	MPD ITEM NUMBER

OPERATIONALLY CHECK (OFF AIRCRAFT) THE ENGINE DRAIN LINES TO VERIFY THAT THEY ARE FREE OF OBSTRUCTIONS. N71-71-00-A

THIS IS A SHOP TASK TO BE PERFORMED DURING ENGINE BUILD-UP.

EFFECTIVITY

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-416-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1	W-06-145-01	1C	11212	006	MAY 10/89

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 1 AFT ENGINE MOUNT COMPONENTS		ALL	4000

ZONES	ACCESS PANELS
411	417AL 418AR

MECH	INSP	MPD ITEM NUMBER
		N71-21-00-B

VISUALLY CHECK THE VISIBLE PORTIONS OF THE ENGINE 1 AFT MOUNT HANGER, CENTER AND TANGENTIAL LINKS FOR CONDITION AND SECURITY.

EFFECTIVITY

4576

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-416-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2	W-06-145-01	1C	11212	006	MAY 10/89

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 2 AFT ENGINE MOUNT COMPONENTS		ALL	4000

ZONES	ACCESS PANELS
421	427AL 428AR

MECH	INSP	MPD ITEM NUMBER
		N71-21-00-B

VISUALLY CHECK THE VISIBLE PORTIONS OF THE ENGINE 2 AFT MOUNT HANGER, CENTER AND TANGENTIAL LINKS FOR CONDITION AND SECURITY.

EFFECTIVITY

CHECK/INSP	ENGINE 2 AFT ENGINE MOUNT COMPONENTS
N71-21-00-B	71-416-01-2 PAGE 1 OF 1 MAY 10/89

4 5 7 7

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-416-02-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		01000 HRS	10202	014	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	ENG 1 AFT MOUNT COMPONENTS.		NOTE	4000

ZONES	ACCESS PANELS
410	417AL 418AR

MECH | INSP

MPD ITEM NUMBER

FUNCTIONALLY CHECK THE ENGINE 1 VIBRATION ISOLATOR CLEARANCE FOR THE AFT ENGINE MOUNT. N71-21-00-6A

AIRPLANE NOTE: TASK NO LONGER APPLICABLE TO AIRPLANES WHO HAVE SERVICE BULLETIN SB 767-71-00-74 REV 1. INCORPORATED.

1. Vibration Isolator Clearance for the Aft Engine Mount (Fig. 602)

A. References

(1) AMM 71-21-02/401, Aft Lower Engine Mount

(2) AMM 78-31-00/201, Thrust Reverser System

B. Access

(1) Location Zones
410 Left Engine Nacelle
420 Right Engine Nacelle

(2) Access Panels
436CL Aft Core Cowl Skirt Fairing (Left Engine)
446CR Aft Core Cowl Skirt Fairing (Right Engine)

C. Prepare for the Vibration Isolator Clearance check.

WARNING: DO THE THRUST REVERSER DEACTIVATION TO PREVENT THE OPERATION OF THE THRUST REVERSERS. THE ACCIDENTAL OPERATION OF THE THRUST REVERSERS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

MECH	INSP

(1) Do this procedure: Thrust Reverser Deactivation for Ground Maintenance (AMM 78-31-00/201).

(2) Remove the aft skirt fairing above the outboard core cowl panel.

(3) Remove the two bolts (1), washers (2), and cover plate (3) for the hinge pin.

(4) Measure the clearance between the hinge pin and the top plate downstop on the outboard side of the aft mount.

(a) If the clearance is less than 0.038 inch (0.97 mm), but more than 0.015 inch (0.38 mm), then visually inspect the hinge pin and downstop for damage immediately and replace the aft mount during the next possible scheduled maintenance operation.

NOTE: The gap is near the limit for removal of the aft mount. Replace the aft mount during the next possible scheduled maintenance operation.

1) Use the bootstrap to remove the load from the mount (AMM 71-00-02/401).

2) If the damage is minor, return the airplane to service.

NOTE: Signs of minor damage are surface polishing, a small quantity of missing material, and small pits caused by galling.

a) Inspect the components for damage again after 500 hours or 300 cycles, whichever comes first.

3) If the damage is major, replace the engine mount (AMM 71-21-02/401).

NOTE: Signs of major damage are missing chrome on the hinge pin, significant smearing of surface material, edge roll-over on the down stop, and surface cracks.

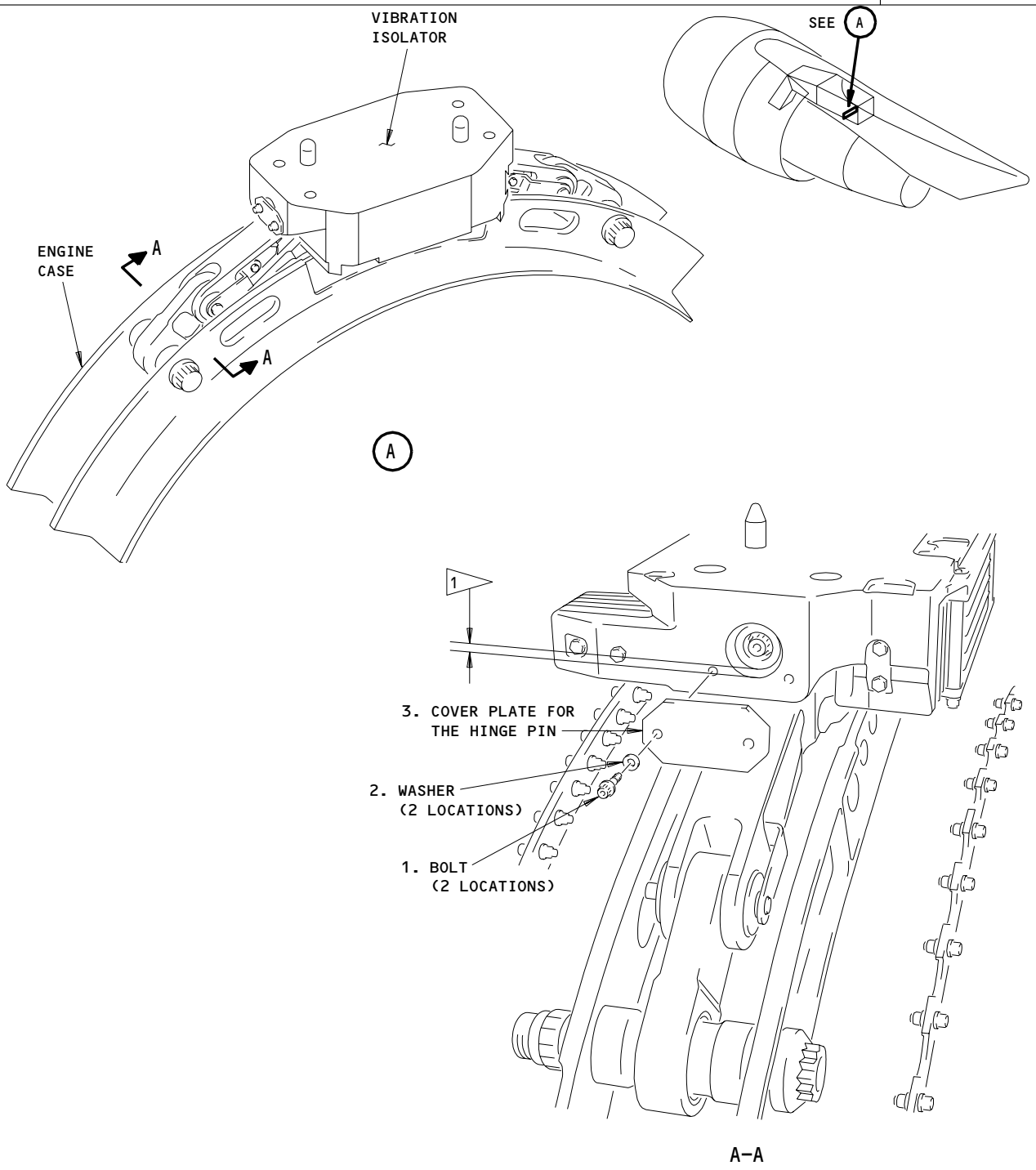
(b) If the clearance is less than 0.015 inch (0.38mm), replace the aft engine mount (AMM 71-21-02/401).

(c) Install the cover plate for the hinge pin.

MECH	INSP

(d) Install the aft skirt fairing on the outboard side of the engine.

(e) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).



1 THE CLEARANCE BETWEEN THE HINGE PIN AND THE DOWNSTOP MUST BE AT LEAST 0.015 INCH (0.38 mm)

Aft Engine Mount Inspection
Figure 602

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-416-02-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		01000 HRS	10202	014	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	ENG 2 AFT MOUNT COMPONENTS.		NOTE	4000

ZONES	ACCESS PANELS
421	427AL 428AR

MECH | INSP

MPD ITEM NUMBER

FUNCTIONALLY CHECK THE ENGINE 2 VIBRATION ISOLATOR CLEARANCE FOR THE AFT ENGINE MOUNT. N71-21-00-6A

AIRPLANE NOTE: TASK NO LONGER APPLICABLE TO AIRPLANES WHO HAVE SERVICE BULLETIN SB 767-71-00-74 REV 1. INCORPORATED.

1. Vibration Isolator Clearance for the Aft Engine Mount (Fig. 602)

A. References

(1) AMM 71-21-02/401, Aft Lower Engine Mount

(2) AMM 78-31-00/201, Thrust Reverser System

B. Access

(1) Location Zones
410 Left Engine Nacelle
420 Right Engine Nacelle

(2) Access Panels
436CL Aft Core Cowl Skirt Fairing (Left Engine)
446CR Aft Core Cowl Skirt Fairing (Right Engine)

C. Prepare for the Vibration Isolator Clearance check.

WARNING: DO THE THRUST REVERSER DEACTIVATION TO PREVENT THE OPERATION OF THE THRUST REVERSERS. THE ACCIDENTAL OPERATION OF THE THRUST REVERSERS CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

MECH | INSP

(1) Do this procedure: Thrust Reverser Deactivation for Ground Maintenance (AMM 78-31-00/201).

(2) Remove the aft skirt fairing above the outboard core cowl panel.

(3) Remove the two bolts (1), washers (2), and cover plate (3) for the hinge pin.

(4) Measure the clearance between the hinge pin and the top plate downstop on the outboard side of the aft mount.

(a) If the clearance is less than 0.038 inch (0.97 mm), but more than 0.015 inch (0.38 mm), then visually inspect the hinge pin and downstop for damage immediately and replace the aft mount during the next possible scheduled maintenance operation.

NOTE: The gap is near the limit for removal of the aft mount. Replace the aft mount during the next possible scheduled maintenance operation.

1) Use the bootstrap to remove the load from the mount (AMM 71-00-02/401).

2) If the damage is minor, return the airplane to service.

NOTE: Signs of minor damage are surface polishing, a small quantity of missing material, and small pits caused by galling.

a) Inspect the components for damage again after 500 hours or 300 cycles, whichever comes first.

3) If the damage is major, replace the engine mount (AMM 71-21-02/401).

NOTE: Signs of major damage are missing chrome on the hinge pin, significant smearing of surface material, edge roll-over on the down stop, and surface cracks.

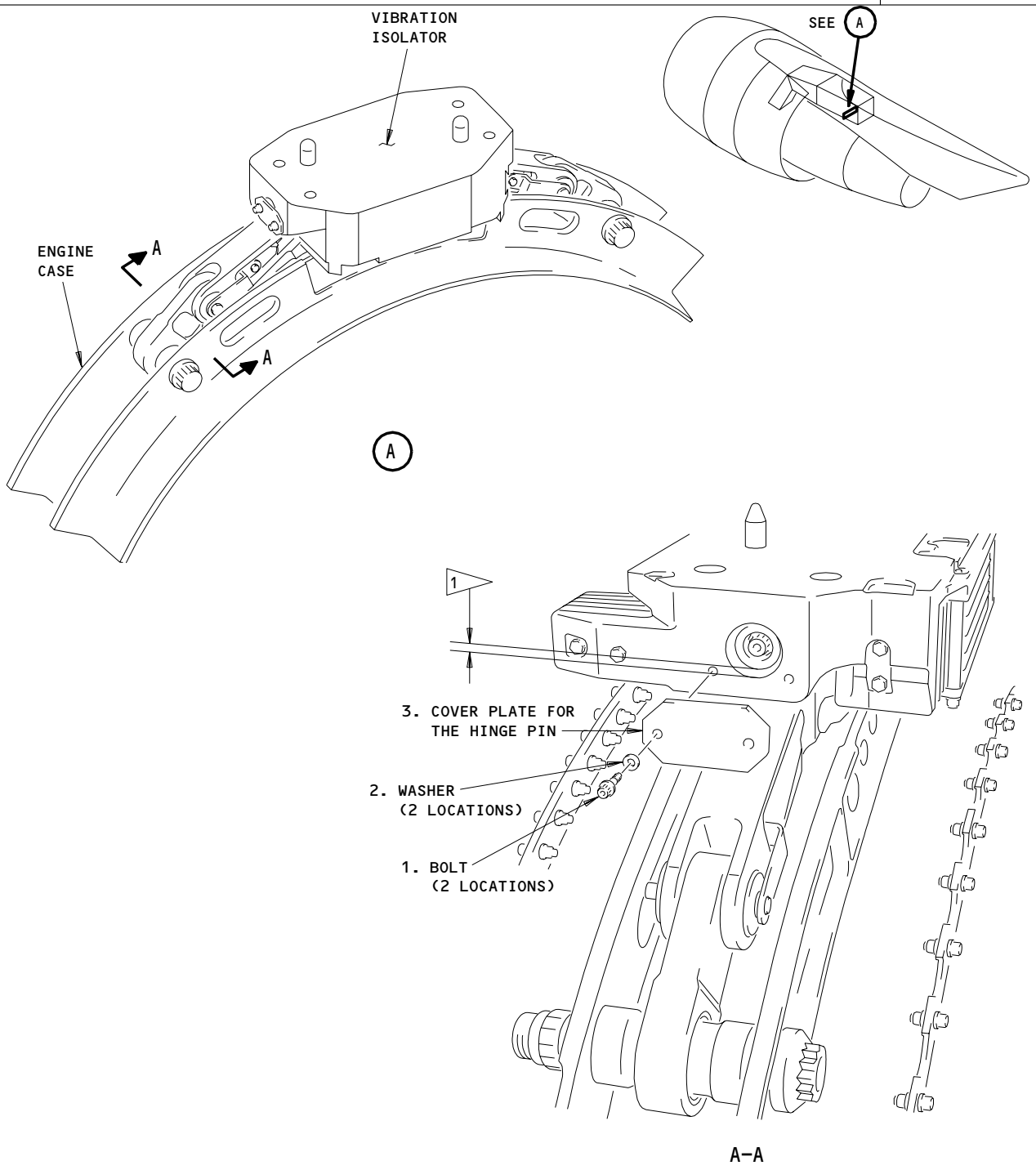
(b) If the clearance is less than 0.015 inch (0.38mm), replace the aft engine mount (AMM 71-21-02/401).

(c) Install the cover plate for the hinge pin.

MECH	INSP

(d) Install the aft skirt fairing on the outboard side of the engine.

(e) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).



1 THE CLEARANCE BETWEEN THE HINGE PIN AND THE DOWNSTOP MUST BE AT LEAST 0.015 INCH (0.38 mm)

Aft Engine Mount Inspection
Figure 602

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-421-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	STRUT 1		1C	11212	005	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	STRUT 1 DRAIN INLETS		ALL	4000

ZONES	ACCESS PANELS
432	415AL 416AR 416BR 436BL

MECH | INSP

MPD ITEM NUMBER

VISUALLY CHECK THE STRUT 1 DRAIN INLETS FOR BLOCKAGE. N71-00-00-6A

CLEAN THE INLETS AND INLET SCREENS (IF INSTALLED) AS NECESSARY.

1. Strut Drains Inspection

A. References

(1) AMM 54-53-01/401, Strut Pressure Relief and Access Doors

(2) AMM 71-11-04/201, Fan Cowl Panels

(3) AMM 71-11-06/201, Core Cowl Panels

(4) AMM 78-31-00/201, Thrust Reverser System

B. Procedure

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE THRUST REVERSER TO PREVENT THE OPERATION OF THE THRUST REVERSER. ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Do the deactivation procedure for the thrust reverser for ground Maintenance (AMM 78-31-00/201).

(2) Remove the 436BL access panel for the left engine and the 446BL access panel for the right engine (AMM 54-53-01/401).

MECH	INSP

(3) Make sure the inlet to the strut drain line does not have a blockage.

NOTE: The strut drain line goes through the skirt fairing on the core cowl.

(4) Install the 436BL and the 446BL access panels (AMM 54-53-01/401).

(5) Open the fan cowl panels (AMM 71-11-04/201).

(6) Open the core cowl panels (AMM 71-11-06/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 TO OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS WHEN YOU OPEN THE THRUST REVERSERS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(7) Open the thrust reversers (AMM 78-31-00/201).

(8) Remove the 416BR access panel for the left engine and the 426BR access panel for the right engine (AMM 54-53-01/401).

NOTE: These access panels are on the strut behind the thrust reversers.

(9) Make sure the inlet of the drain line does not have a blockage.

(10) Install the 416BR and the 426BR access panels (AMM 54-53-01/401).

(11) Make sure the drain inlets on the left side and the right side of the forward engine mount do not have a blockage.

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS WHEN YOU CLOSE THE THRUST REVERSERS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(12) Close the thrust reversers (AMM 78-31-00/201).

(13) Close the core cowl panels (AMM 71-11-06/201).

MECH	INSP

(14) Close the fan cowl panels (AMM 71-11-04/201).

(15) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-421-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	STRUT 2		1C	11212	005	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	STRUT 2 DRAIN INLETS		ALL	4000

ZONES	ACCESS PANELS
442	425AL 426AR 426BR 446BL

MECH | INSP

MPD ITEM NUMBER

VISUALLY CHECK THE STRUT 2 DRAIN INLETS FOR BLOCKAGE. N71-00-00-6A

CLEAN THE INLETS AND INLET SCREENS (IF INSTALLED) AS NECESSARY.

1. Strut Drains Inspection

A. References

(1) AMM 54-53-01/401, Strut Pressure Relief and Access Doors

(2) AMM 71-11-04/201, Fan Cowl Panels

(3) AMM 71-11-06/201, Core Cowl Panels

(4) AMM 78-31-00/201, Thrust Reverser System

B. Procedure

WARNING: DO THE DEACTIVATION PROCEDURE FOR THE THRUST REVERSER TO PREVENT THE OPERATION OF THE THRUST REVERSER. ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Do the deactivation procedure for the thrust reverser for ground Maintenance (AMM 78-31-00/201).

(2) Remove the 436BL access panel for the left engine and the 446BL access panel for the right engine (AMM 54-53-01/401).

MECH	INSP

(3) Make sure the inlet to the strut drain line does not have a blockage.

NOTE: The strut drain line goes through the skirt fairing on the core cowl.

(4) Install the 436BL and the 446BL access panels (AMM 54-53-01/401).

(5) Open the fan cowl panels (AMM 71-11-04/201).

(6) Open the core cowl panels (AMM 71-11-06/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 TO OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS WHEN YOU OPEN THE THRUST REVERSERS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(7) Open the thrust reversers (AMM 78-31-00/201).

(8) Remove the 416BR access panel for the left engine and the 426BR access panel for the right engine (AMM 54-53-01/401).

NOTE: These access panels are on the strut behind the thrust reversers.

(9) Make sure the inlet of the drain line does not have a blockage.

(10) Install the 416BR and the 426BR access panels (AMM 54-53-01/401).

(11) Make sure the drain inlets on the left side and the right side of the forward engine mount do not have a blockage.

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00 TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS WHEN YOU CLOSE THE THRUST REVERSERS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(12) Close the thrust reversers (AMM 78-31-00/201).

(13) Close the core cowl panels (AMM 71-11-06/201).

MECH	INSP

(14) Close the fan cowl panels (AMM 71-11-04/201).

(15) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-424-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		1C	11212	005	AUG 22/00

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	ENGINE 1 COWL HOLD-OPEN RODS		ALL	4000

ZONES	ACCESS PANELS
410	413AL 414AR 417AL 418AR

MECH | INSP

MPD ITEM NUMBER

OPERATIONALLY CHECK THE ENGINE 1 FAN COWL, CORE COWL, AND FAN DUCT COWL AND THRUST REVERSER HOLD-OPEN RODS. N71-11-10-2A

1. Cowl Panel Hold-Open Rod - Inspection/Check (Fig. 201)

A. References

(1) AMM 71-11-04/201, Fan Cowl Panel

(2) AMM 71-11-06/201, Core Cowl Panel

(3) AMM 78-31-00/201, Thrust Reversers

B. Procedure

(1) Open the fan cowl panels (AMM 71-11-04/201).

NOTE: You open the fan cowl panels for access to the hold-open rods on the thrust reversers. It is not necessary to open the thrust reversers to examine the hold-open rods.

WARNING: DO THE THRUST REVERSER DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(2) Do this procedure: Thrust Reverser Deactivation for Ground Maintenance (AMM 78-31-00/201).

(3) Do the steps that follow to examine the hold-open rods on the thrust reversers:

MECH | INSP

(a) Disconnect and connect the rods to the stow bracket to make sure they operate correctly.

(b) Make sure the end of the rods that attach to the cowls with the bolts move freely.

(c) Visually examine the hold open rod attach bracket assembly for wear and damage.

1) Make sure there is no crack in the hold open rod attach bracket.

2) Make sure the minimum remaining thickness for the hold open rod attach bracket eye bolt flange is 0.110 inch (2.794 mm).

3) Make sure the torque for the hold open rod attach bracket eye bolt nut is 160 - 240 inch-pounds (18.1 - 27.1 newton-meters).

(d) Visually examine the rods for damage.

(e) Extend the rods to make sure the rods operate smoothly.

(f) Make sure the latches lock into the flanges of the rods.

(g) Push the latches to release the rods three times to make sure there is not contamination in the latches.

(h) If there is contamination on the rods or on the latches, clean the rods.

(4) Do the steps that follow to examine the hold-open rods on the fan cowl panels:

(a) Hold the fan cowls open from the external side.

(b) Disconnect the hold-open rods from the brackets on the engine.

(c) Connect and disconnect the rods from the stow brackets to make sure they operate correctly.

(d) Make sure the end of the rods that attach to the fan cowls with the bolts move freely.

(e) Visually examine the rods for damage.

MECH | INSP

(f) Extend the rods to make sure the rods operate smoothly.

(g) Make sure you cannot see the red bands with the word "unlocked" when the rods are fully extended.

(h) Push on the secondary locks and move the lock sleeves three times to make sure there is not contamination in the lock devices.

(i) If there is contamination on the rods or on the latches, clean the rods.

(5) Open the core cowl panels (AMM 71-11-06/201).

(6) Do the steps that follow to examine the hold-open rods on the core cowl panels:

(a) Hold the core cowl panels open from the external side.

(b) Disconnect the hold-open rods on the core cowl panels from the brackets on the engine.

(c) Connect and disconnect the rods from the stow brackets to make sure they operate correctly.

(d) Make sure the end of the rods that attach to the core cowls with the bolts move freely.

(e) Visually examine the rods for damage.

(f) Extend the rods to make sure they operate smoothly.

(g) Make sure the latches go into the flanges when the rods are fully extended.

(h) Push the latches to release the rods three times to make sure there is not contamination in the latches.

(i) If there is contamination on the rods or on the latches, clean the rods.

(7) Close the core cowl panels (AMM 71-11-06/201).

(8) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

(9) Close the fan cowl panels (AMM 71-11-04/201).

2. Cowl Panel Hold-Open Rod - Cleaning/Painting (Fig. 201)

A. Consumable Materials

(1) B00069 Solvent - Triclorethane

B. Procedure

(1) Do the steps that follow to clean the hold-open rods on the fan cowl panels:

(a) Make sure the rods are extended and locked.

(b) Apply a large quantity of the solvent below the lock sleeves.

(c) Operate the rods (extend and retract the rods) to flush the dirt, the oil, or the grease from the rods and the lock devices.

(d) Dry the rods and the lock devices with a clean cloth.

(e) Make sure the rods and the lock sleeves operate correctly.

(f) Do not lubricate the rods or the lock devices.

(2) Do these steps to clean the hold-open rods on the core cowl panels and on the thrust reversers:

(a) Make sure the rods are extended and locked.

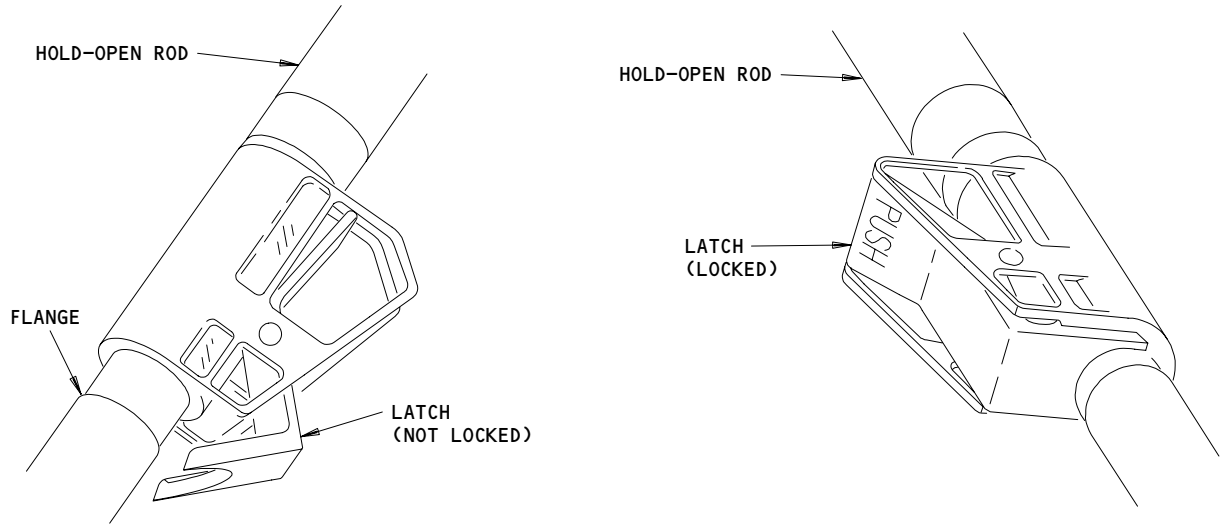
(b) Apply a large quantity of the solvent to the rods and to the latches.

(c) Operate the rods and the latches (extend and retract the rods) to flush the dirt, the oil, or the grease from the rods.

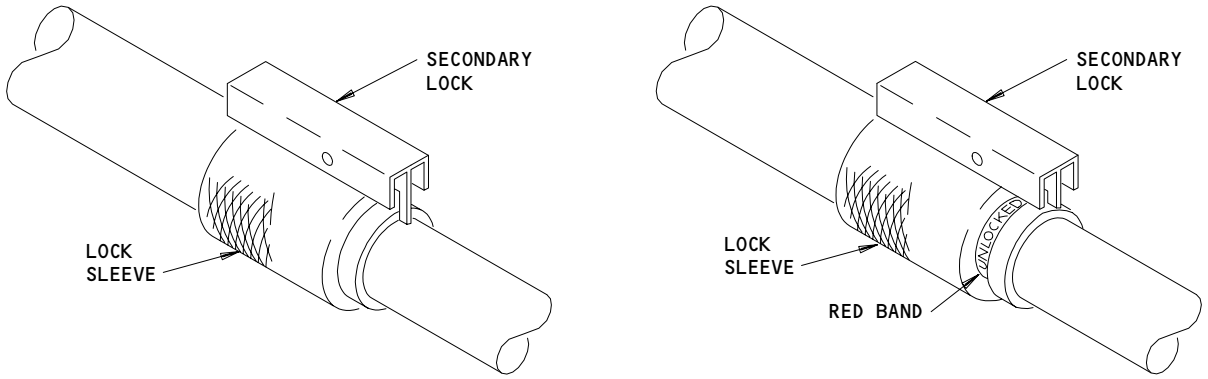
(d) Dry the latches and the rods with a clean cloth.

(e) Make sure the rods and the latches operate correctly.

(f) Do not lubricate the rods or the latches.



HOLD-OPEN ROD FOR THE CORE COWL PANEL AND THRUST REVERSER



LOCKED

NOT LOCKED

HOLD-OPEN ROD FOR THE FAN COWL PANEL

Hold-Open Rod Lock
Figure 201

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-424-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		1C	11212	005	AUG 22/00

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	ENGINE 2 COWL HOLD-OPEN RODS		ALL	4000

ZONES	ACCESS PANELS
420	423AL 424AR 427AL 428AR

MECH	INSP	MPD ITEM NUMBER

OPERATIONALLY CHECK THE ENGINE 2 FAN COWL, CORE COWL, AND FAN DUCT COWL AND THRUST REVERSER HOLD-OPEN RODS. N71-11-10-2A

1. Cowl Panel Hold-Open Rod - Inspection/Check (Fig. 201)

A. References

(1) AMM 71-11-04/201, Fan Cowl Panel

(2) AMM 71-11-06/201, Core Cowl Panel

(3) AMM 78-31-00/201, Thrust Reversers

B. Procedure

(1) Open the fan cowl panels (AMM 71-11-04/201).

NOTE: You open the fan cowl panels for access to the hold-open rods on the thrust reversers. It is not necessary to open the thrust reversers to examine the hold-open rods.

WARNING: DO THE THRUST REVERSER DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT.

(2) Do this procedure: Thrust Reverser Deactivation for Ground Maintenance (AMM 78-31-00/201).

(3) Do the steps that follow to examine the hold-open rods on the thrust reversers:

MECH	INSP

(a) Disconnect and connect the rods to the stow bracket to make sure they operate correctly.

(b) Make sure the end of the rods that attach to the cowls with the bolts move freely.

(c) Visually examine the hold open rod attach bracket assembly for wear and damage.

1) Make sure there is no crack in the hold open rod attach bracket.

2) Make sure the minimum remaining thickness for the hold open rod attach bracket eye bolt flange is 0.110 inch (2.794 mm).

3) Make sure the torque for the hold open rod attach bracket eye bolt nut is 160 - 240 inch-pounds (18.1 - 27.1 newton-meters).

(d) Visually examine the rods for damage.

(e) Extend the rods to make sure the rods operate smoothly.

(f) Make sure the latches lock into the flanges of the rods.

(g) Push the latches to release the rods three times to make sure there is not contamination in the latches.

(h) If there is contamination on the rods or on the latches, clean the rods.

(4) Do the steps that follow to examine the hold-open rods on the fan cowl panels:

(a) Hold the fan cowls open from the external side.

(b) Disconnect the hold-open rods from the brackets on the engine.

(c) Connect and disconnect the rods from the stow brackets to make sure they operate correctly.

(d) Make sure the end of the rods that attach to the fan cowls with the bolts move freely.

(e) Visually examine the rods for damage.

MECH | INSP

(f) Extend the rods to make sure the rods operate smoothly.

(g) Make sure you cannot see the red bands with the word "unlocked" when the rods are fully extended.

(h) Push on the secondary locks and move the lock sleeves three times to make sure there is not contamination in the lock devices.

(i) If there is contamination on the rods or on the latches, clean the rods.

(5) Open the core cowl panels (AMM 71-11-06/201).

(6) Do the steps that follow to examine the hold-open rods on the core cowl panels:

(a) Hold the core cowl panels open from the external side.

(b) Disconnect the hold-open rods on the core cowl panels from the brackets on the engine.

(c) Connect and disconnect the rods from the stow brackets to make sure they operate correctly.

(d) Make sure the end of the rods that attach to the core cowls with the bolts move freely.

(e) Visually examine the rods for damage.

(f) Extend the rods to make sure they operate smoothly.

(g) Make sure the latches go into the flanges when the rods are fully extended.

(h) Push the latches to release the rods three times to make sure there is not contamination in the latches.

(i) If there is contamination on the rods or on the latches, clean the rods.

(7) Close the core cowl panels (AMM 71-11-06/201).

(8) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

(9) Close the fan cowl panels (AMM 71-11-04/201).

MECH | INSP

2. Cowl Panel Hold-Open Rod - Cleaning/Painting (Fig. 201)

A. Consumable Materials

(1) B00069 Solvent - Triclorethane

B. Procedure

(1) Do the steps that follow to clean the hold-open rods on the fan cowl panels:

(a) Make sure the rods are extended and locked.

(b) Apply a large quantity of the solvent below the lock sleeves.

(c) Operate the rods (extend and retract the rods) to flush the dirt, the oil, or the grease from the rods and the lock devices.

(d) Dry the rods and the lock devices with a clean cloth.

(e) Make sure the rods and the lock sleeves operate correctly.

(f) Do not lubricate the rods or the lock devices.

(2) Do these steps to clean the hold-open rods on the core cowl panels and on the thrust reversers:

(a) Make sure the rods are extended and locked.

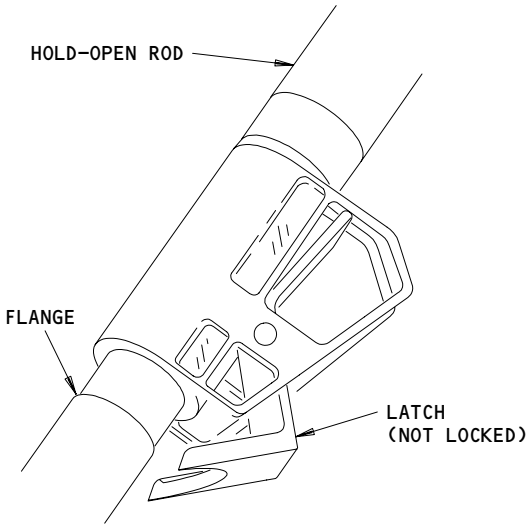
(b) Apply a large quantity of the solvent to the rods and to the latches.

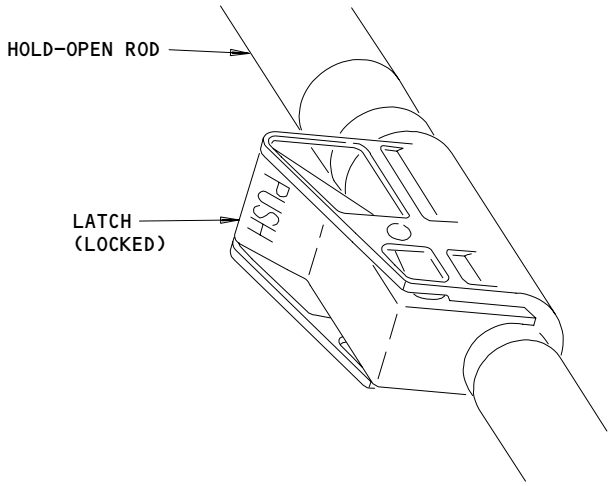
(c) Operate the rods and the latches (extend and retract the rods) to flush the dirt, the oil, or the grease from the rods.

(d) Dry the latches and the rods with a clean cloth.

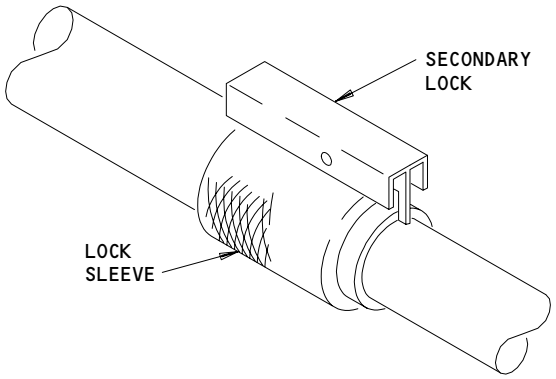
(e) Make sure the rods and the latches operate correctly.

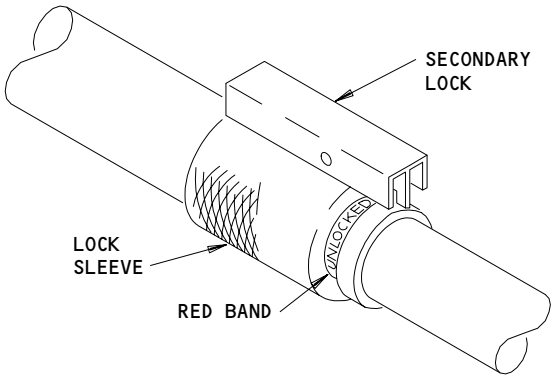
(f) Do not lubricate the rods or the latches.





HOLD-OPEN ROD FOR THE CORE COWL PANEL AND THRUST REVERSER





LOCKED

NOT LOCKED

HOLD-OPEN ROD FOR THE FAN COWL PANEL

Hold-Open Rod Lock
Figure 201

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-425-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		01000 HRS	10202	013	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 1 STRUT DRAINS		ALL	4000

ZONES	ACCESS PANELS
410 430	413AL 414AR 415AL 416AR 417AL 418AR

MECH	INSP	MPD ITEM NUMBER

CHECK THE ENGINE 1 CENTER DRAIN AND RACEWAY DRAIN LINES FOR DEPOSITS. N71-71-00-6B

1. Examine the Strut Drains for Heavy Deposits

A. Equipment

(1) Air source - regulated, compressed, 25-35 psi (170-240 kPa)

B. References

(1) AMM 54-51-00/201, Strut Drain Line Inspection and Cleaning

(2) AMM 71-11-04/201, Fan Cowl Panel

(3) AMM 71-11-06/201, Core Cowl Panel

(4) AMM 78-31-00/201, Thrust Reverser System

C. Access

(1) Location Zones

410 Power Plant (Left Engine)
420 Power Plant (Right Engine)
430 Nacelle Strut (Left Engine)
440 Nacelle Strut (Right Engine)

MECH | INSP

(2) Access Panels

413AL/414AR	Fan Cowl Panels (Left Engine)
415AL/416AR	Thrust Reverser Halves (Left Engine)
417AL/418AR	Core Cowl Panels (Left Engine)
423AL/424AR	Fan Cowl Panels (Right Engine)
425AL/426AR	Thrust Reverser Halves (Right Engine)
427AL/428AR	Core Cowl Panels (Right Engine)
436BL/436BR	Aft Engine Mount Access Doors, Left Engine
446BL/446BR	Aft Engine Mount Access Doors, Right Engine
416BR	Forward Right Strut Access Door, Left Engine
426BR	Forward Right Strut Access Door, Right Engine

D. Procedure

WARNING: DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Do the deactivation procedure for the thrust reverser for ground maintenance (AMM 78-31-00/201).

(2) Open the fan cowl panels (AMM 71-11-04/201).

(3) Open the core cowl panels (AMM 71-11-06/201).

WARNING: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Open the thrust reversers (AMM 78-31-00/201).

(5) Visually inspect the strut raceway for leakage or collected fluid.

(a) Remove insulation and cover plates from the strut raceway (AMM 54-51-00/201).

(b) Remove any fluid from the compartment.

(c) Find the fluid source(s) and treat the identified area.

(6) Check inside the hydraulic reservoir for debris.

MECH | INSP

(a) Check drains and drain screens for debris or clogging.

(b) Remove any debris from the compartment and clean drain screens.

(7) Check inside strut raceway for hydraulic fluid contamination of the electrical connectors.

(a) Replace the contaminated connectors.

(b) Check drain and drain screens for debris or clogging.

(c) Remove any debris from the compartment and clean drain screens.

(8) Disconnect these hoses from the strut (Fig. 604 and 605):

(a) The forward mount drain hoses.

(b) The center mount drain hose.

(c) The raceway drain hoses.

(9) Do a check for a clear flow of air through the engine mounted strut drain lines.

(a) Block four inlets with plugs while you cover the fifth inlet with a rag to collect the unwanted materials.

NOTE: The rag will ensure that material is not blown back into the strut.

(b) Attach the air source to the strut drain line exit on the drain mast.

(c) Blow air back up the drain lines.

(d) Ensure that there is a clear flow of air through each of the engine mounted strut drain lines.

(e) Remove the plugs, rag, and unwanted material from the drain inlets.

(f) Remove the air source.

MECH | INSP

(10) Visually examine the ends of the drain hoses and fittings for heavy deposits.

NOTE: It is usual for the ends of the drain hoses and fittings to change color. This is not residue and is acceptable.

(a) Examine the strut mounted drain fittings.

(b) Examine the ends of the drain hoses.

(11) If you do not find a heavy deposit, install the drain hoses (no more action is necessary).

(12) If you find a heavy deposit, replace the hose.

NOTE: You may use normal airline procedures to clean the removed hoses and fittings. These cleaned hoses and fittings may be reinstalled or put away for future use.

(13) If the hose or fitting is fully blocked, examine the raceway for collected fluid.

(14) Continue the visual inspection for heavy deposits in each of the next downstream tubes and fittings until you do not find heavy deposits.

(a) Replace the tubes which have heavy deposits.

(15) Connect all disconnected drain hoses.

(16) Reinstall the strut raceway cover plates and insulation (AMM 54-51-00/201).

(a) Seal the cover plates with BMS 5-63.

WARNING: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

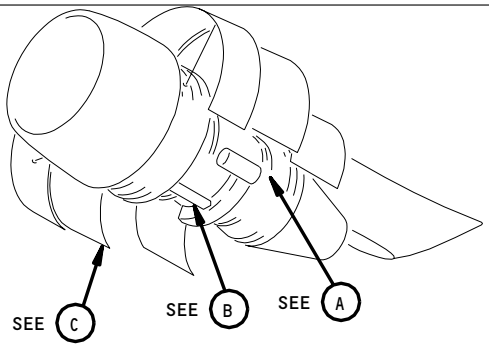
(17) Close the thrust reversers (AMM 78-31-00/201).

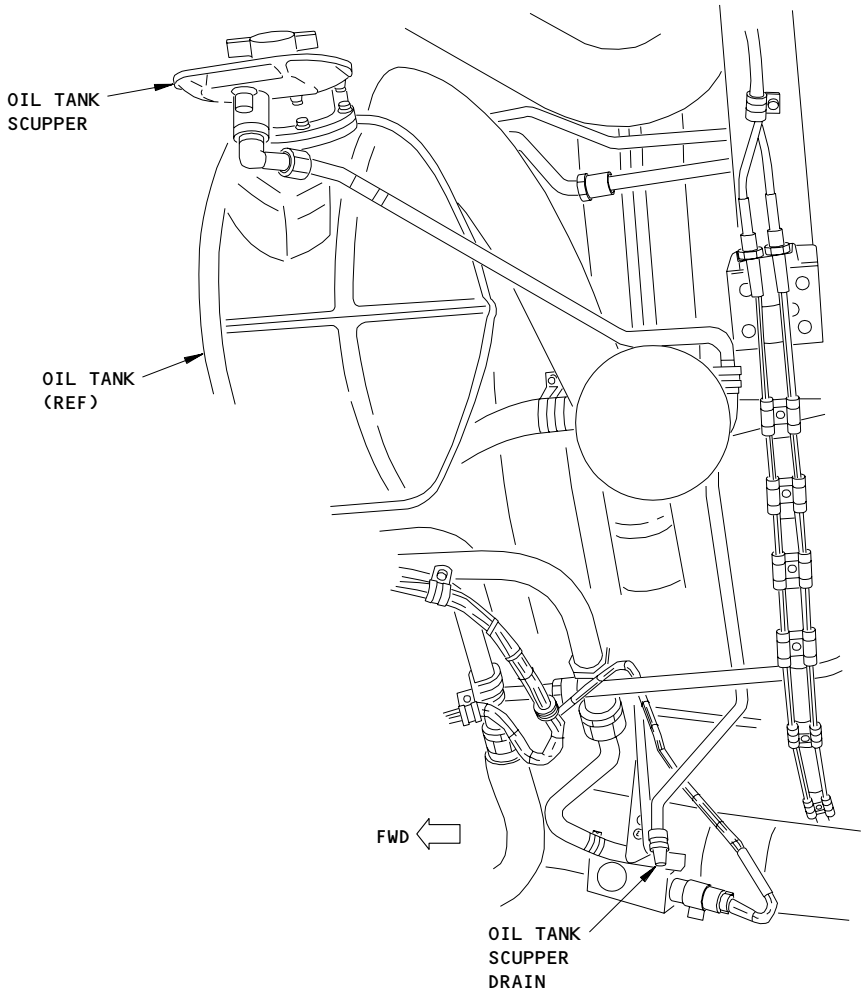
(18) Close the core cowl panels (AMM 71-11-06/201).

MECH	INSP

(19) Close the fan cowl panels (AMM 71-11-04/201).

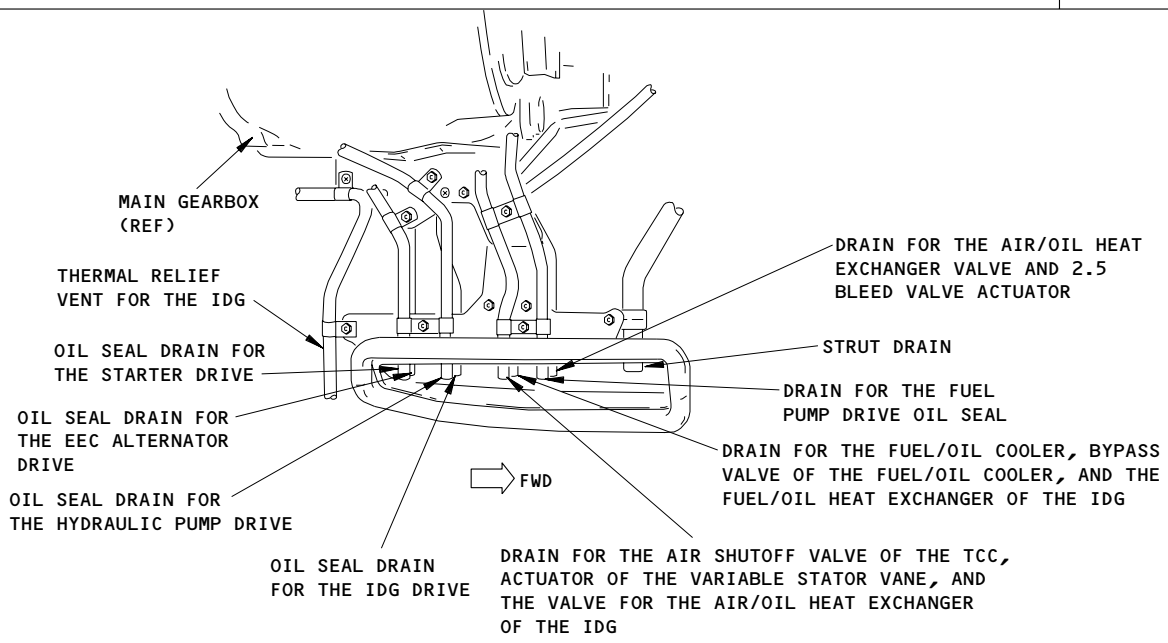
(20) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).





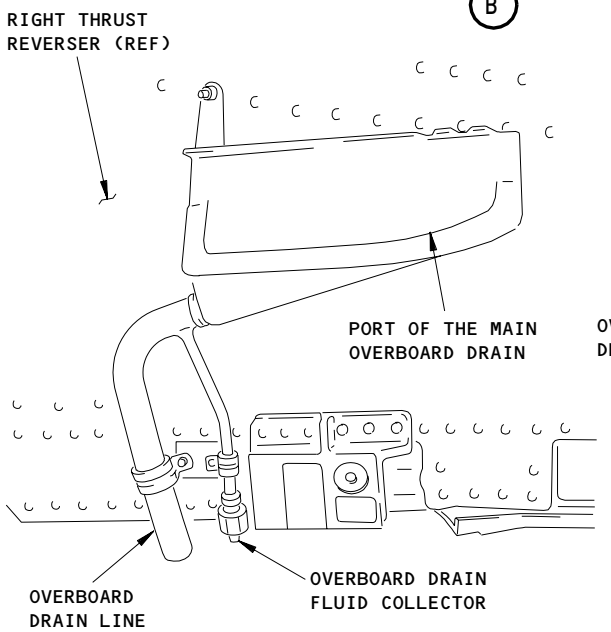
AFT DRAIN
A

Engine Vents and Drains
Figure 601 (Sheet 1)



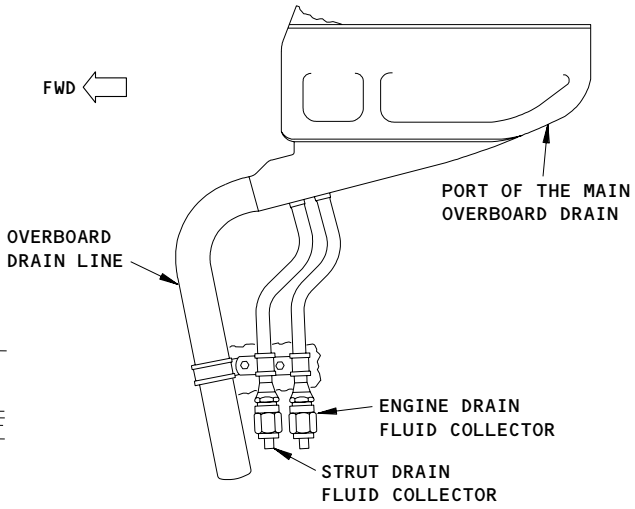
DRAIN COLLECTOR

(B)



OVERBOARD DRAIN

(C) 1



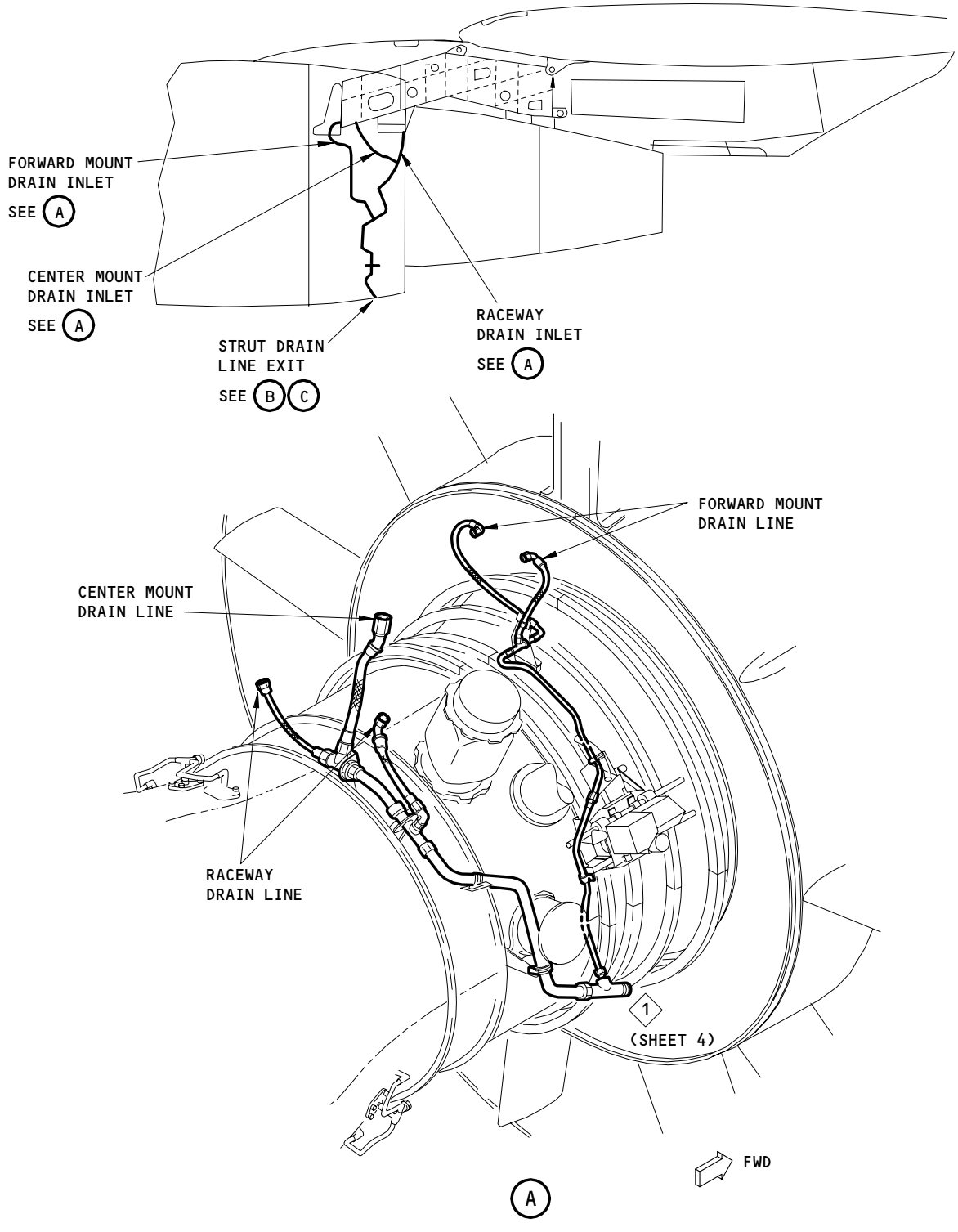
OVERBOARD DRAIN

(C) 2

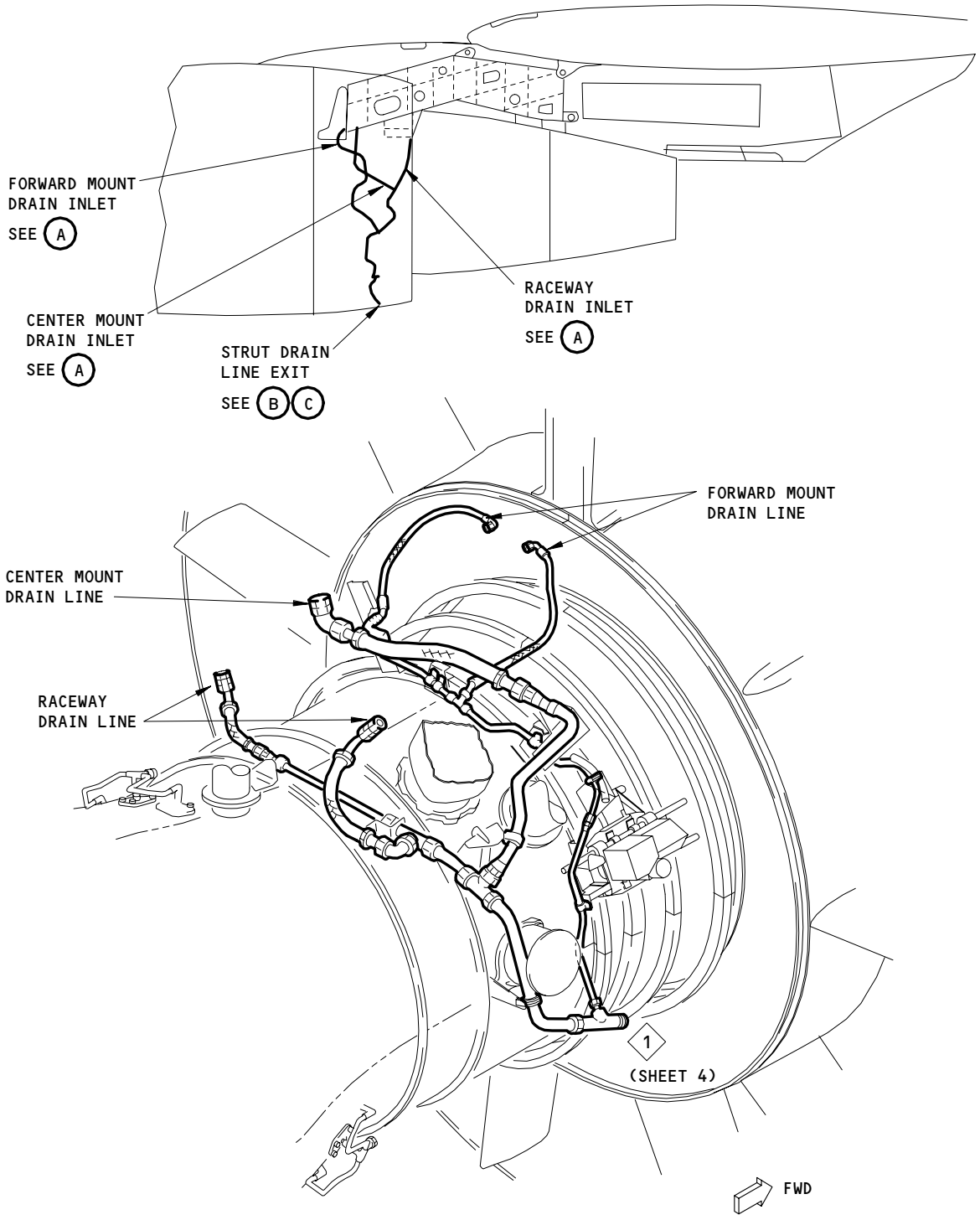
1 AIRPLANES WITH ONE FLUID COLLECTOR TUBE FOR THE OVERBOARD DRAIN

2 AIRPLANES WITH TWO FLUID COLLECTOR TUBES FOR THE OVERBOARD DRAIN

Engine Vents and Drains
Figure 601 (Sheet 2)

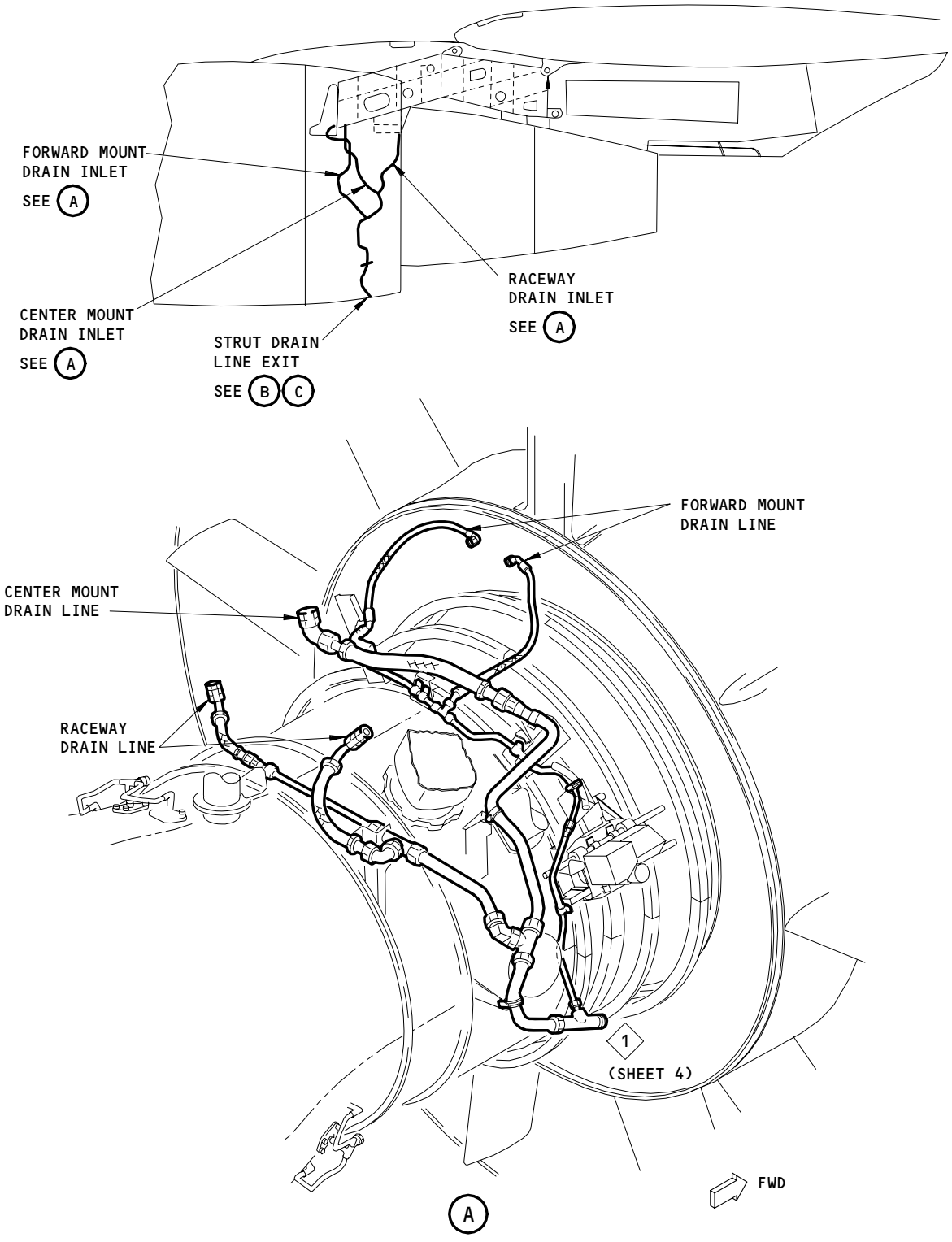


Strut Drains Inspection
Figure 604 (Sheet 1)

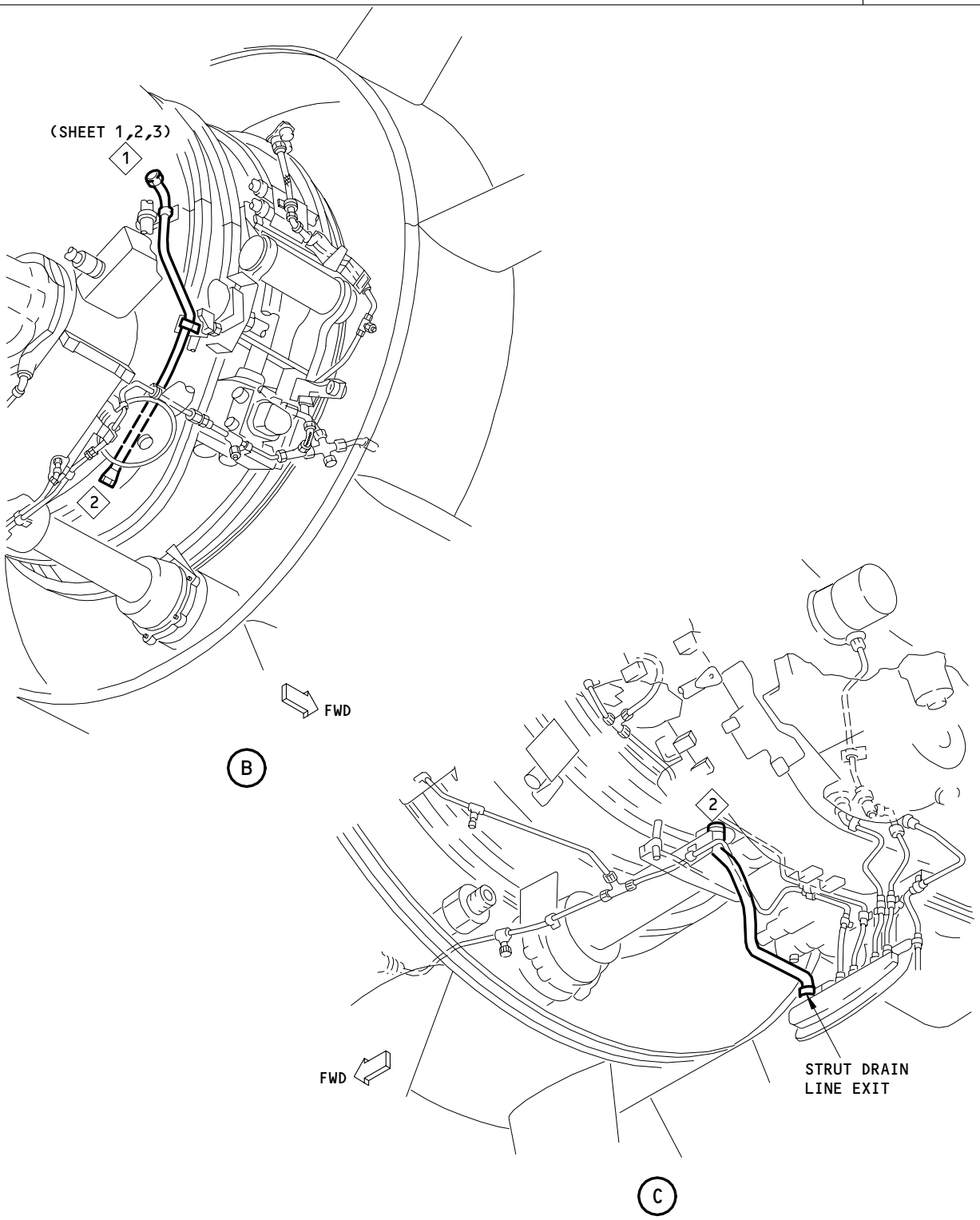


A

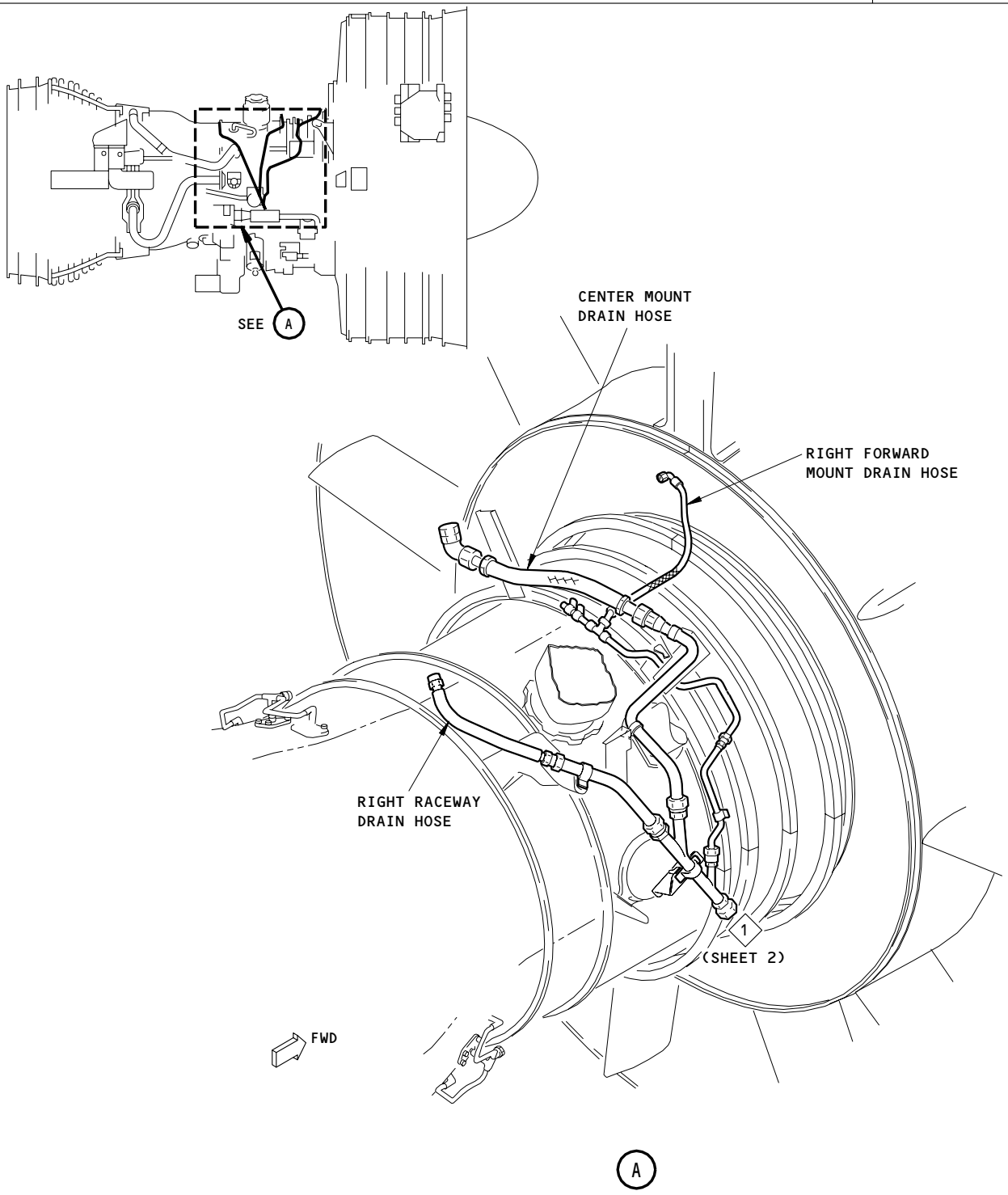
Strut Drains Inspection
Figure 604 (Sheet 2)



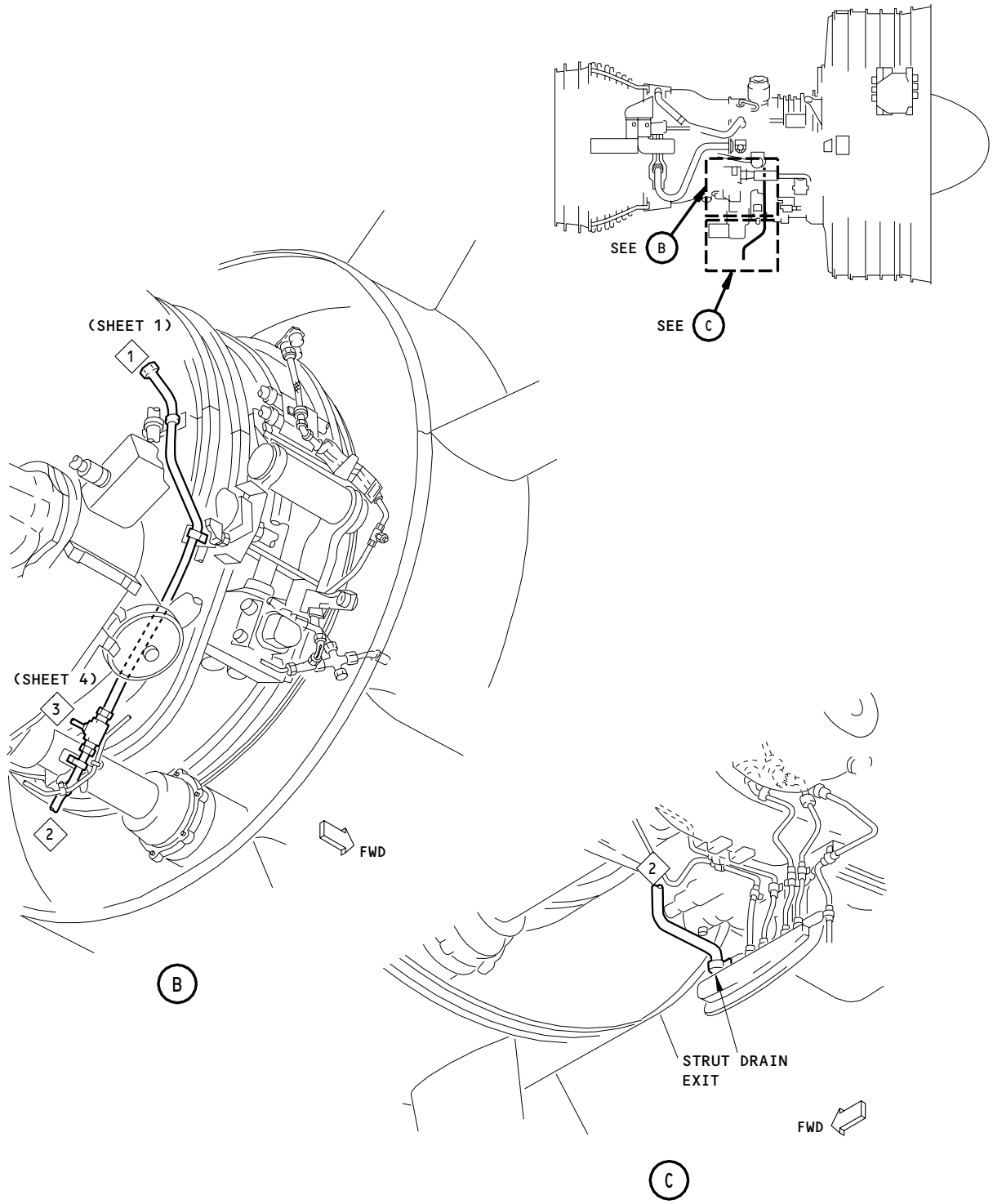
Strut Drains Inspection
Figure 604 (Sheet 3)



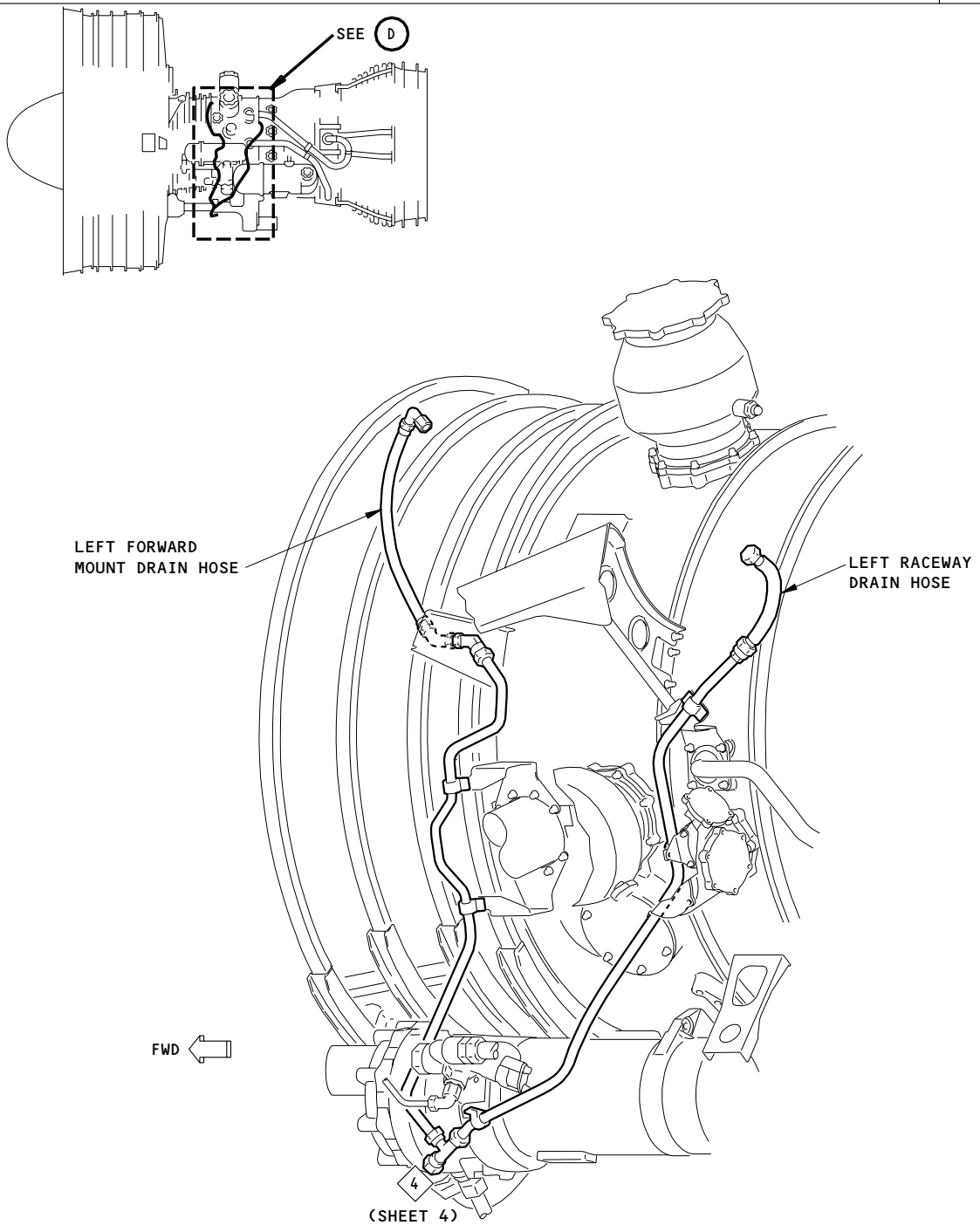
Strut Drains Inspection
Figure 604 (Sheet 4)



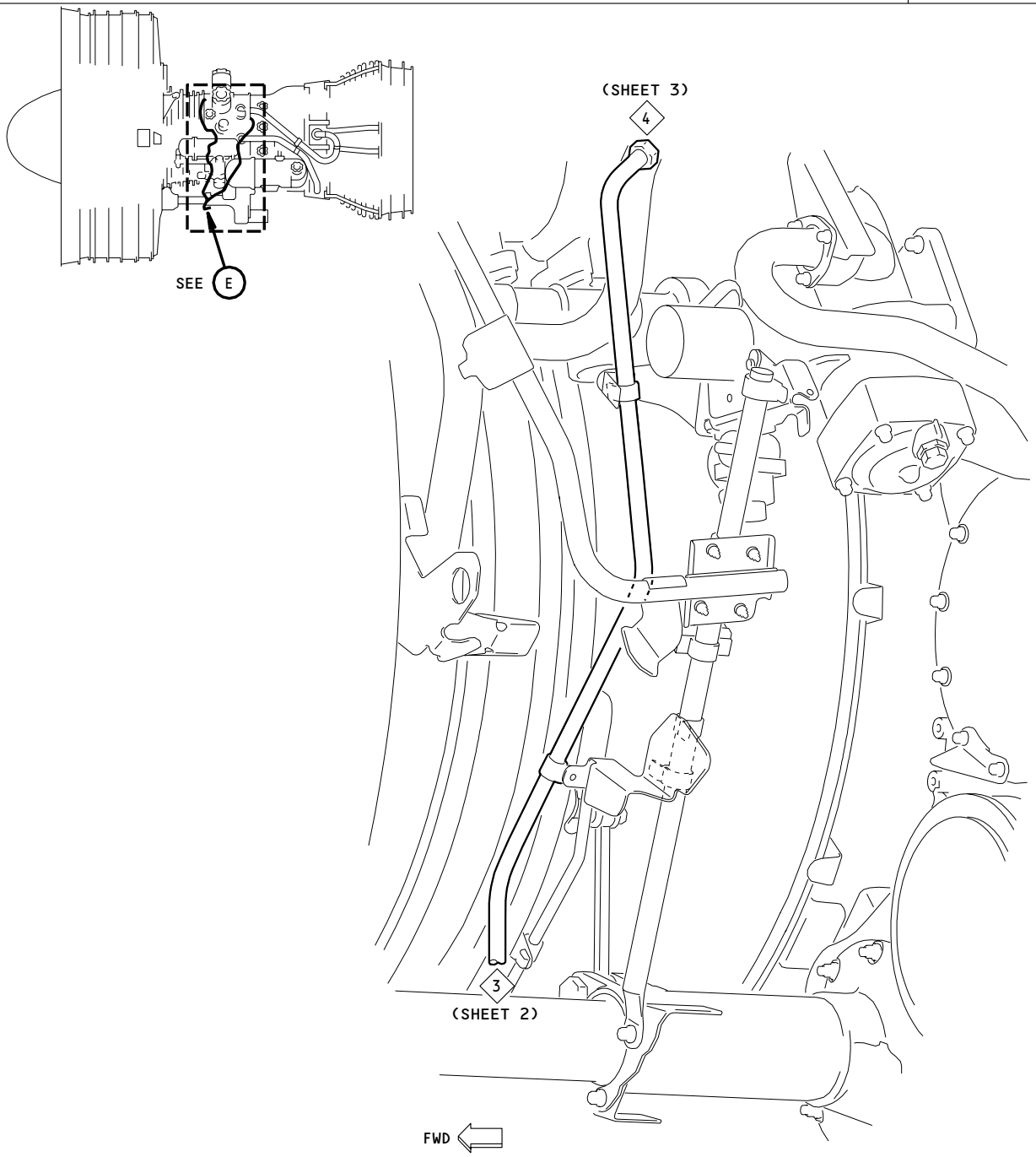
Strut Drains Inspection
Figure 605 (Sheet 1)



Strut Drains Inspection
Figure 605 (Sheet 2)



Strut Drains Inspection
Figure 605 (Sheet 3)



(VIEW IN THE UP DIRECTION)

E

Strut Drains Inspection
Figure 605 (Sheet 4)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	71-425-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		01000 HRS	10202	013	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 2 STRUT DRAINS		ALL	4000

ZONES	ACCESS PANELS
420 440	423AL 424AR 425AL 426AR 427AL 428AR

MECH	INSP	MPD ITEM NUMBER

CHECK THE ENGINE 2 CENTER DRAIN AND RACEWAY DRAIN LINES FOR DEPOSITS. N71-71-00-6B

1. Examine the Strut Drains for Heavy Deposits

A. Equipment

(1) Air source - regulated, compressed, 25-35 psi (170-240 kPa)

B. References

(1) AMM 54-51-00/201, Strut Drain Line Inspection and Cleaning

(2) AMM 71-11-04/201, Fan Cowl Panel

(3) AMM 71-11-06/201, Core Cowl Panel

(4) AMM 78-31-00/201, Thrust Reverser System

C. Access

(1) Location Zones

410 Power Plant (Left Engine)
420 Power Plant (Right Engine)
430 Nacelle Strut (Left Engine)
440 Nacelle Strut (Right Engine)

MECH	INSP

(2) Access Panels

413AL/414AR	Fan Cowl Panels (Left Engine)
415AL/416AR	Thrust Reverser Halves (Left Engine)
417AL/418AR	Core Cowl Panels (Left Engine)
423AL/424AR	Fan Cowl Panels (Right Engine)
425AL/426AR	Thrust Reverser Halves (Right Engine)
427AL/428AR	Core Cowl Panels (Right Engine)
436BL/436BR	Aft Engine Mount Access Doors, Left Engine
446BL/446BR	Aft Engine Mount Access Doors, Right Engine
416BR	Forward Right Strut Access Door, Left Engine
426BR	Forward Right Strut Access Door, Right Engine

D. Procedure

WARNING: DO THE DEACTIVATION PROCEDURE TO PREVENT THE OPERATION OF THE THRUST REVERSER. THE ACCIDENTAL OPERATION OF THE THRUST REVERSER CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Do the deactivation procedure for the thrust reverser for ground maintenance (AMM 78-31-00/201).

(2) Open the fan cowl panels (AMM 71-11-04/201).

(3) Open the core cowl panels (AMM 71-11-06/201).

WARNING: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Open the thrust reversers (AMM 78-31-00/201).

(5) Visually inspect the strut raceway for leakage or collected fluid.

(a) Remove insulation and cover plates from the strut raceway (AMM 54-51-00/201).

(b) Remove any fluid from the compartment.

(c) Find the fluid source(s) and treat the identified area.

(6) Check inside the hydraulic reservoir for debris.

MECH	INSP

(a) Check drains and drain screens for debris or clogging.

(b) Remove any debris from the compartment and clean drain screens.

(7) Check inside strut raceway for hydraulic fluid contamination of the electrical connectors.

(a) Replace the contaminated connectors.

(b) Check drain and drain screens for debris or clogging.

(c) Remove any debris from the compartment and clean drain screens.

(8) Disconnect these hoses from the strut (Fig. 604 and 605):

(a) The forward mount drain hoses.

(b) The center mount drain hose.

(c) The raceway drain hoses.

(9) Do a check for a clear flow of air through the engine mounted strut drain lines.

(a) Block four inlets with plugs while you cover the fifth inlet with a rag to collect the unwanted materials.

NOTE: The rag will ensure that material is not blown back into the strut.

(b) Attach the air source to the strut drain line exit on the drain mast.

(c) Blow air back up the drain lines.

(d) Ensure that there is a clear flow of air through each of the engine mounted strut drain lines.

(e) Remove the plugs, rag, and unwanted material from the drain inlets.

(f) Remove the air source.

MECH | INSP

(10) Visually examine the ends of the drain hoses and fittings for heavy deposits.

NOTE: It is usual for the ends of the drain hoses and fittings to change color. This is not residue and is acceptable.

(a) Examine the strut mounted drain fittings.

(b) Examine the ends of the drain hoses.

(11) If you do not find a heavy deposit, install the drain hoses (no more action is necessary).

(12) If you find a heavy deposit, replace the hose.

NOTE: You may use normal airline procedures to clean the removed hoses and fittings. These cleaned hoses and fittings may be reinstalled or put away for future use.

(13) If the hose or fitting is fully blocked, examine the raceway for collected fluid.

(14) Continue the visual inspection for heavy deposits in each of the next downstream tubes and fittings until you do not find heavy deposits.

(a) Replace the tubes which have heavy deposits.

(15) Connect all disconnected drain hoses.

(16) Reinstall the strut raceway cover plates and insulation (AMM 54-51-00/201).

(a) Seal the cover plates with BMS 5-63.

WARNING: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

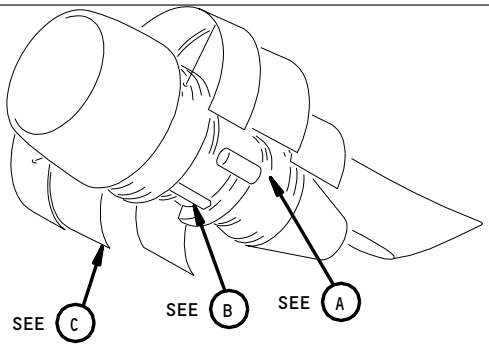
(17) Close the thrust reversers (AMM 78-31-00/201).

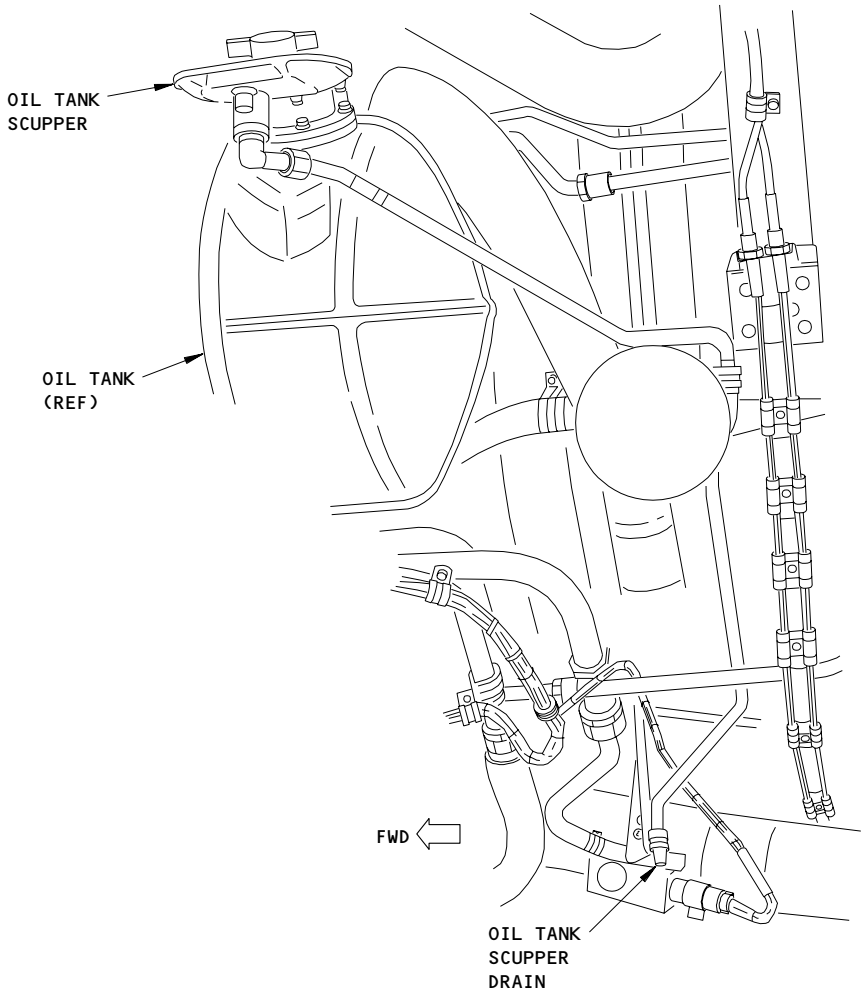
(18) Close the core cowl panels (AMM 71-11-06/201).

MECH	INSP

(19) Close the fan cowl panels (AMM 71-11-04/201).

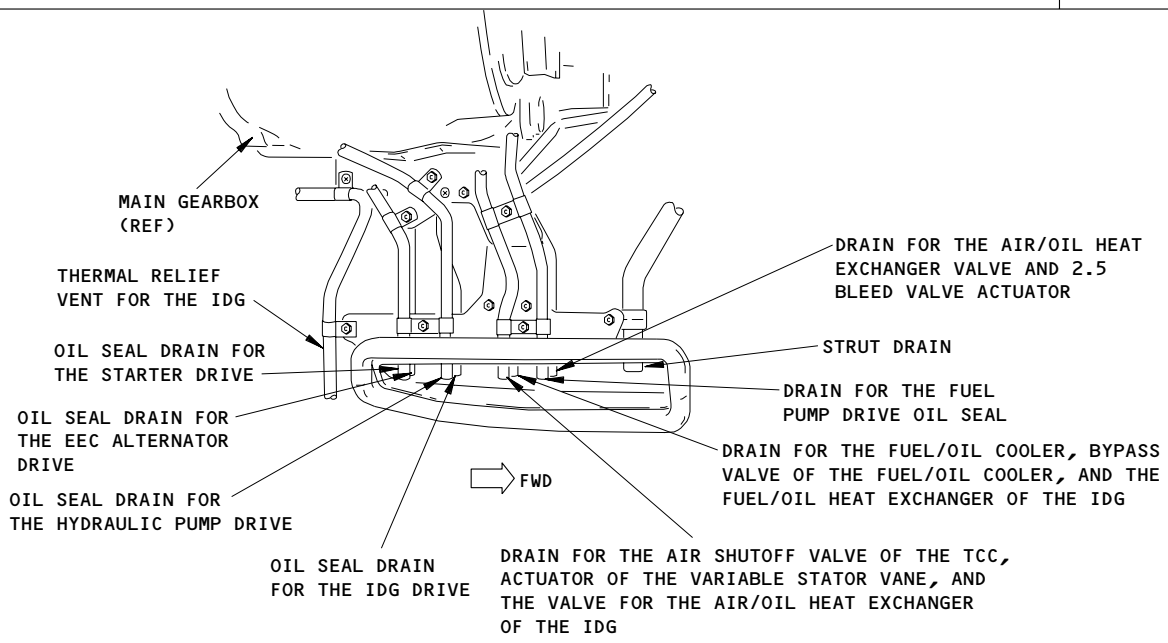
(20) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).





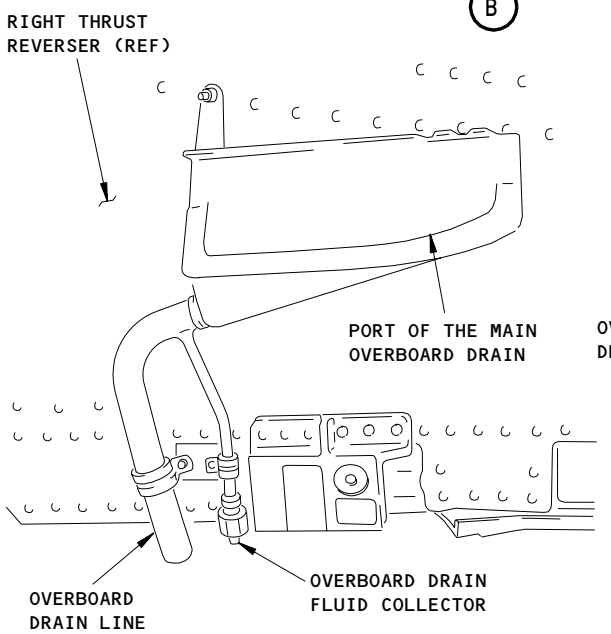
AFT DRAIN
A

Engine Vents and Drains
Figure 601 (Sheet 1)



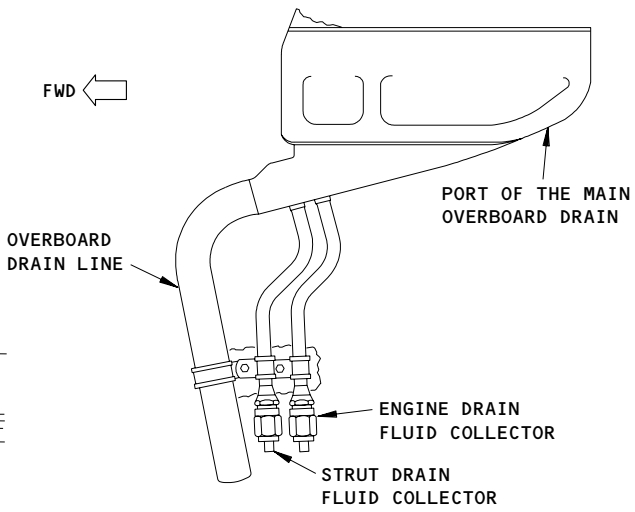
DRAIN COLLECTOR

(B)



OVERBOARD DRAIN

(C) 1



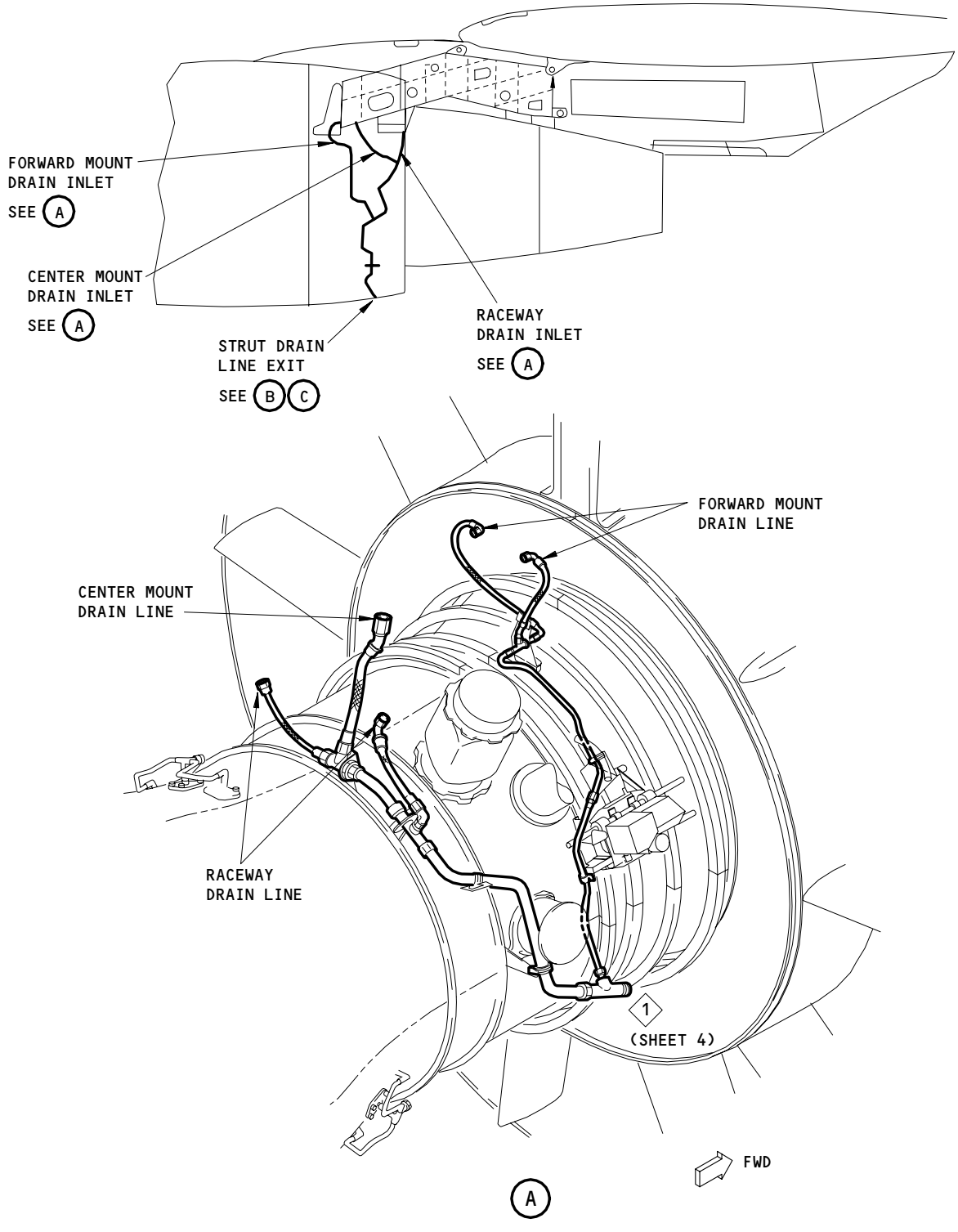
OVERBOARD DRAIN

(C) 2

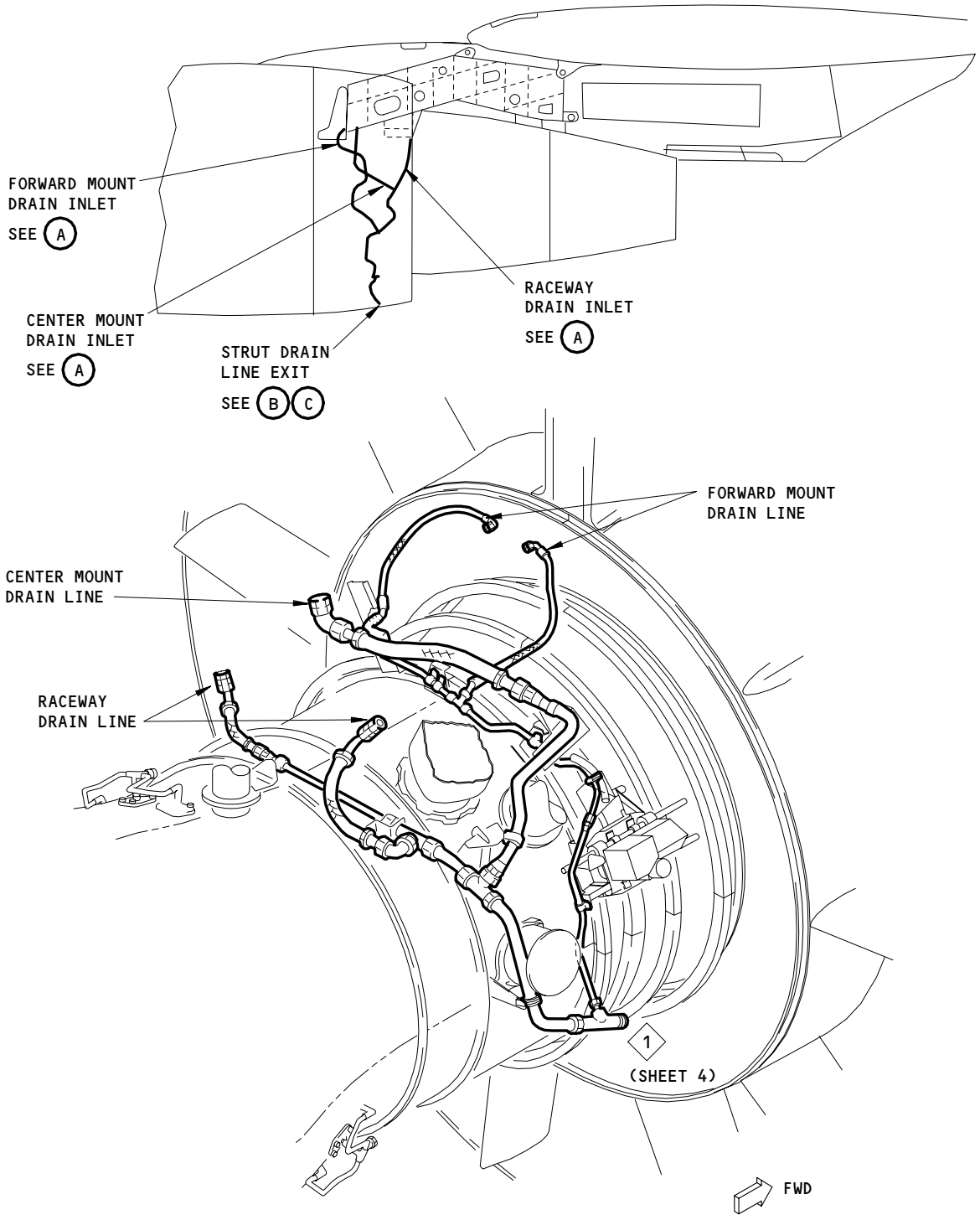
1 AIRPLANES WITH ONE FLUID COLLECTOR TUBE FOR THE OVERBOARD DRAIN

2 AIRPLANES WITH TWO FLUID COLLECTOR TUBES FOR THE OVERBOARD DRAIN

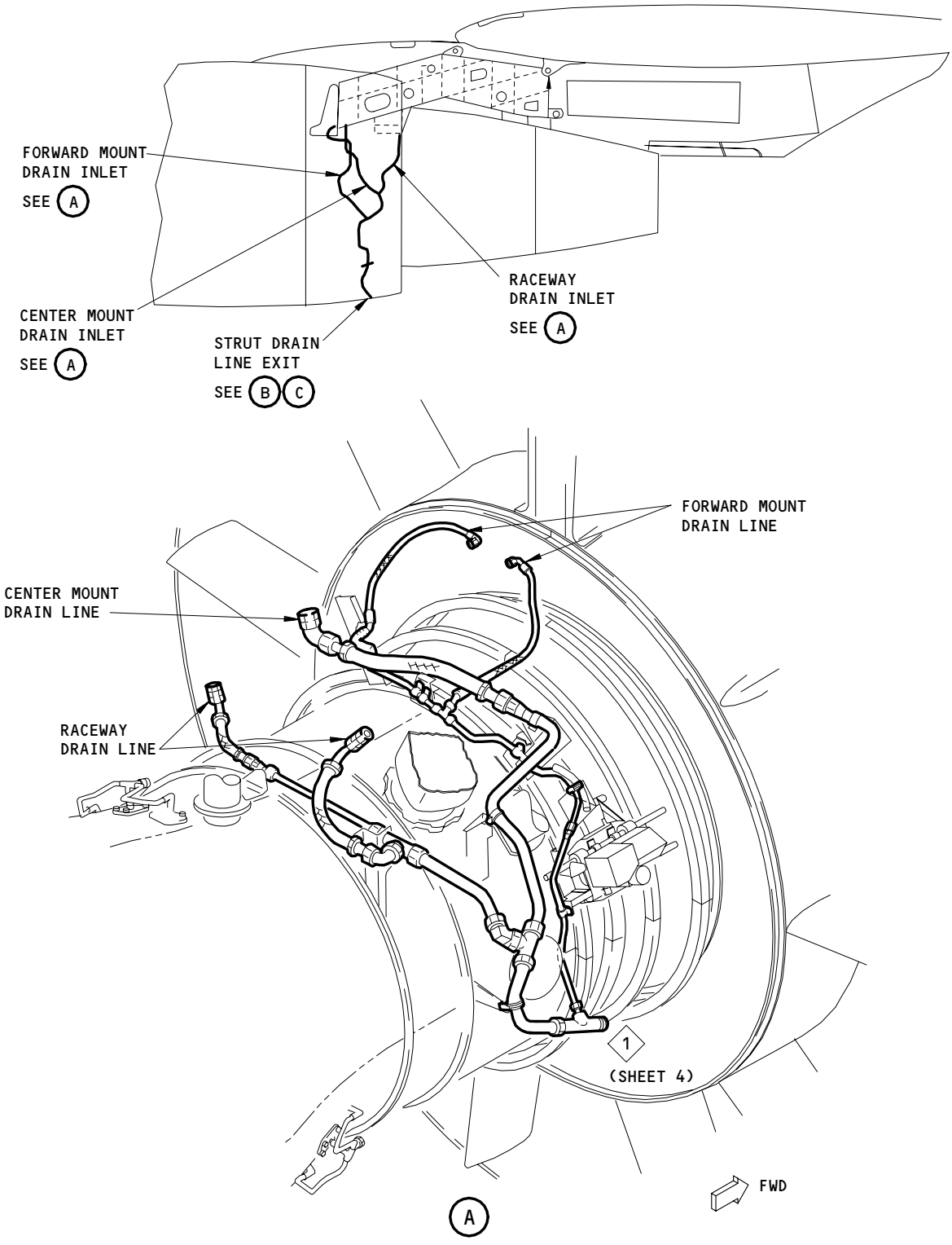
Engine Vents and Drains
Figure 601 (Sheet 2)



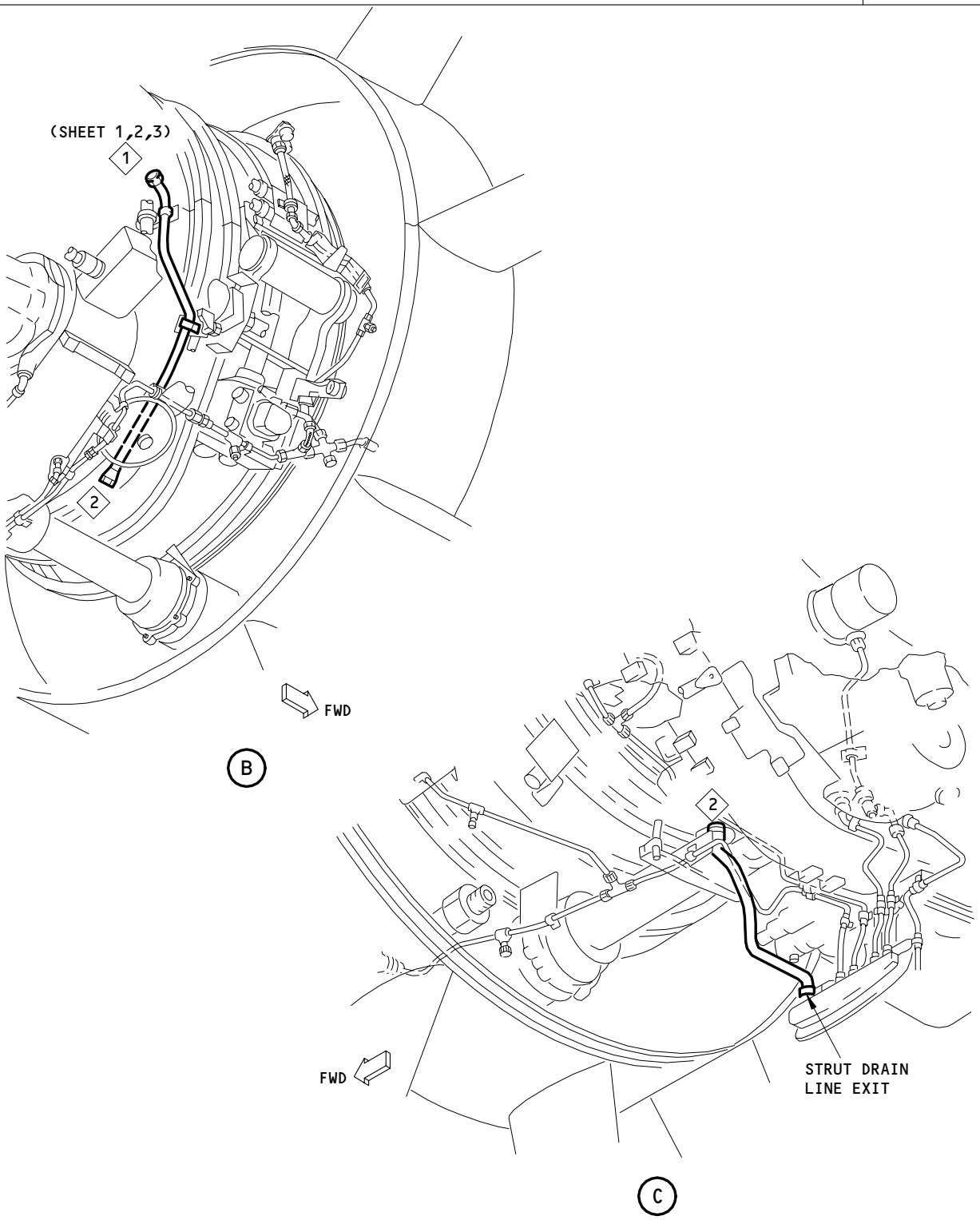
Strut Drains Inspection
Figure 604 (Sheet 1)



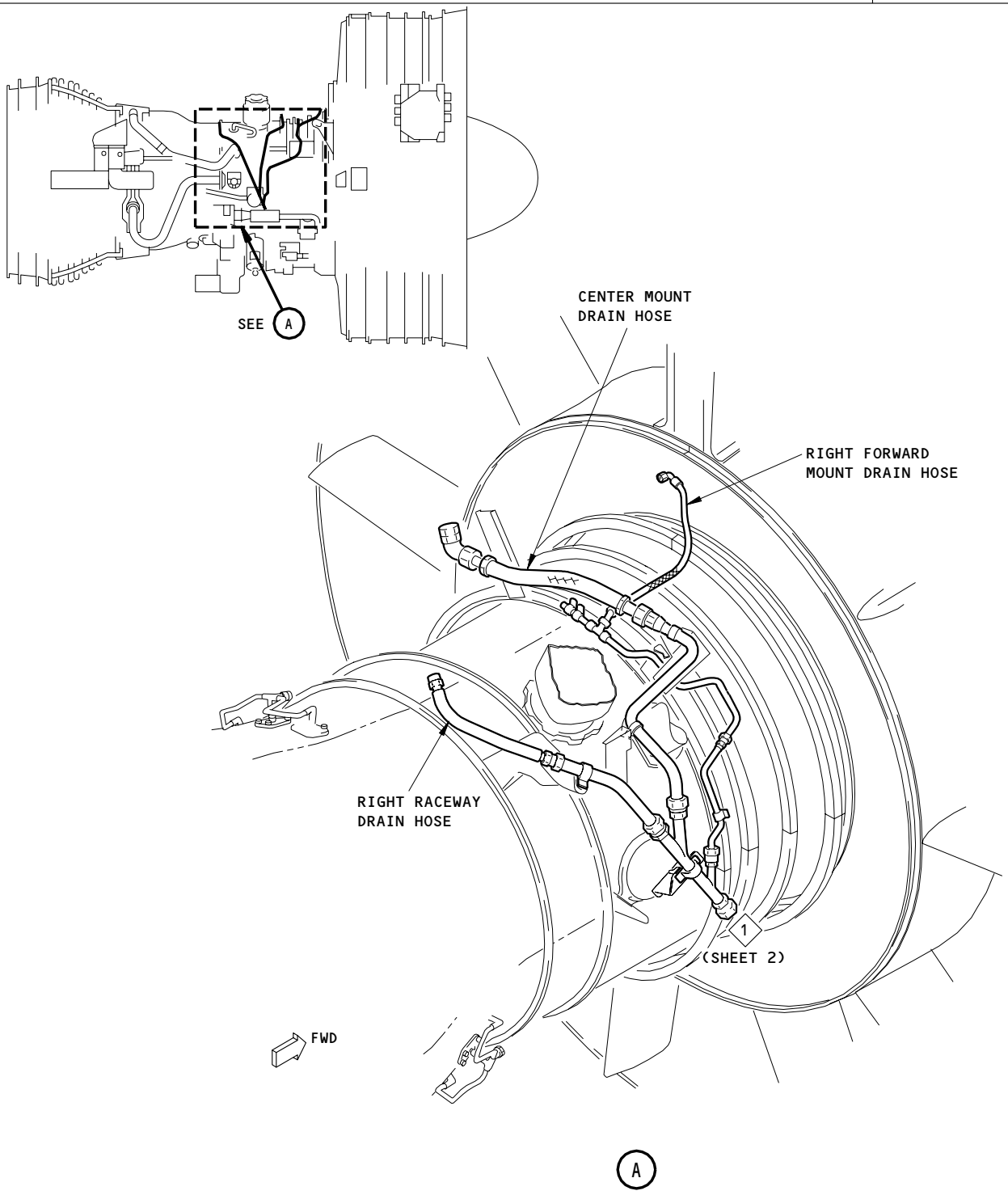
Strut Drains Inspection
Figure 604 (Sheet 2)



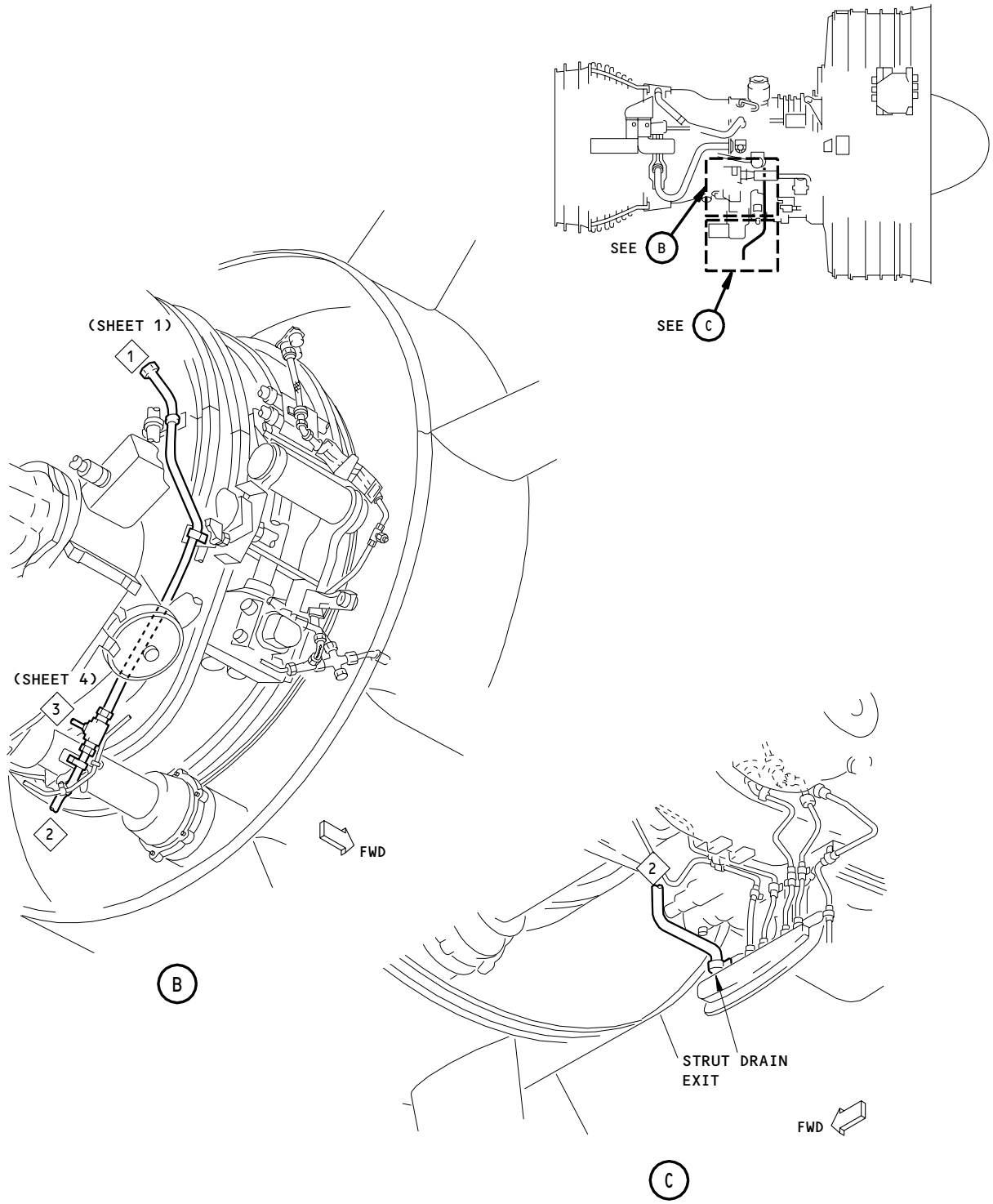
Strut Drains Inspection
Figure 604 (Sheet 3)



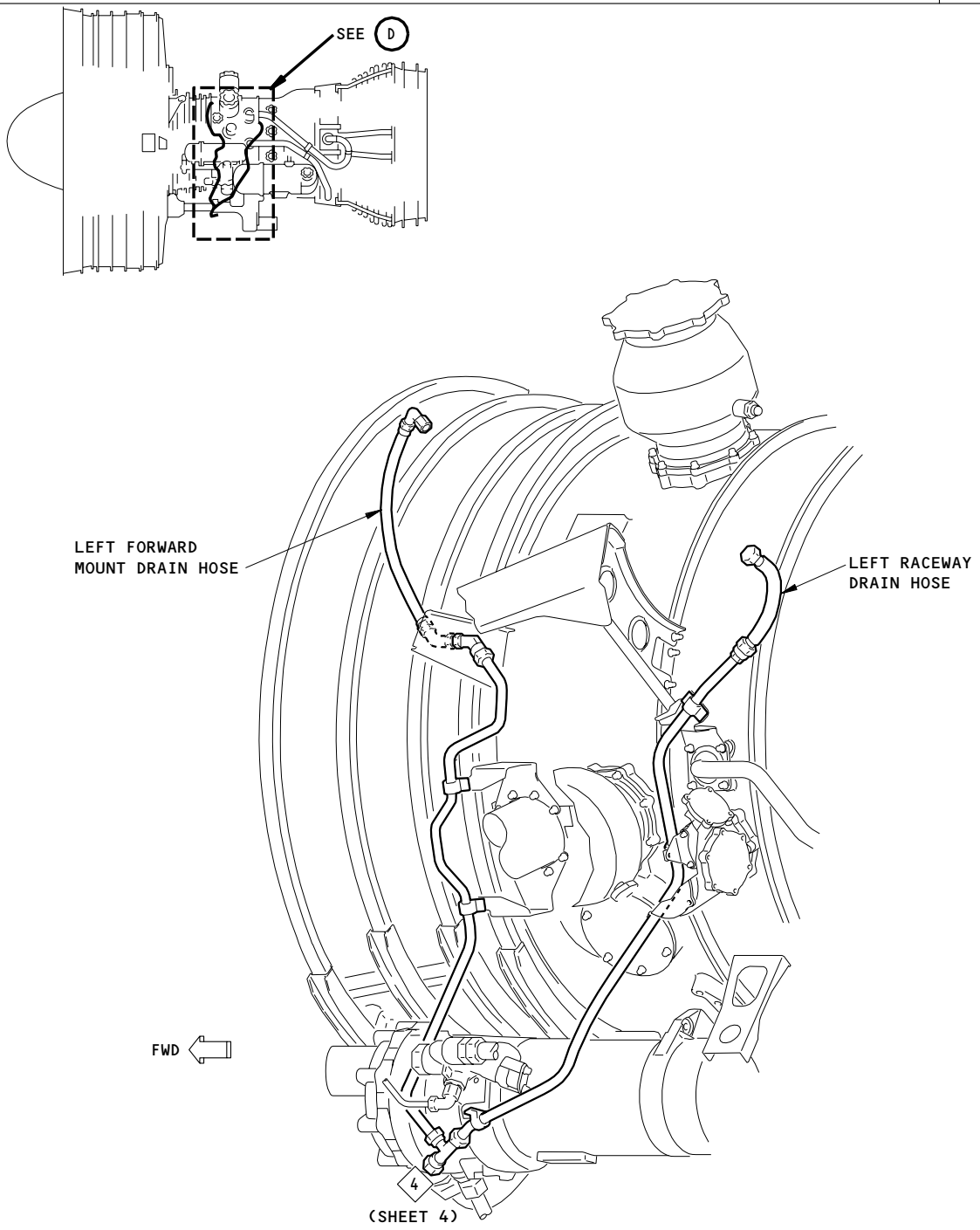
Strut Drains Inspection
Figure 604 (Sheet 4)



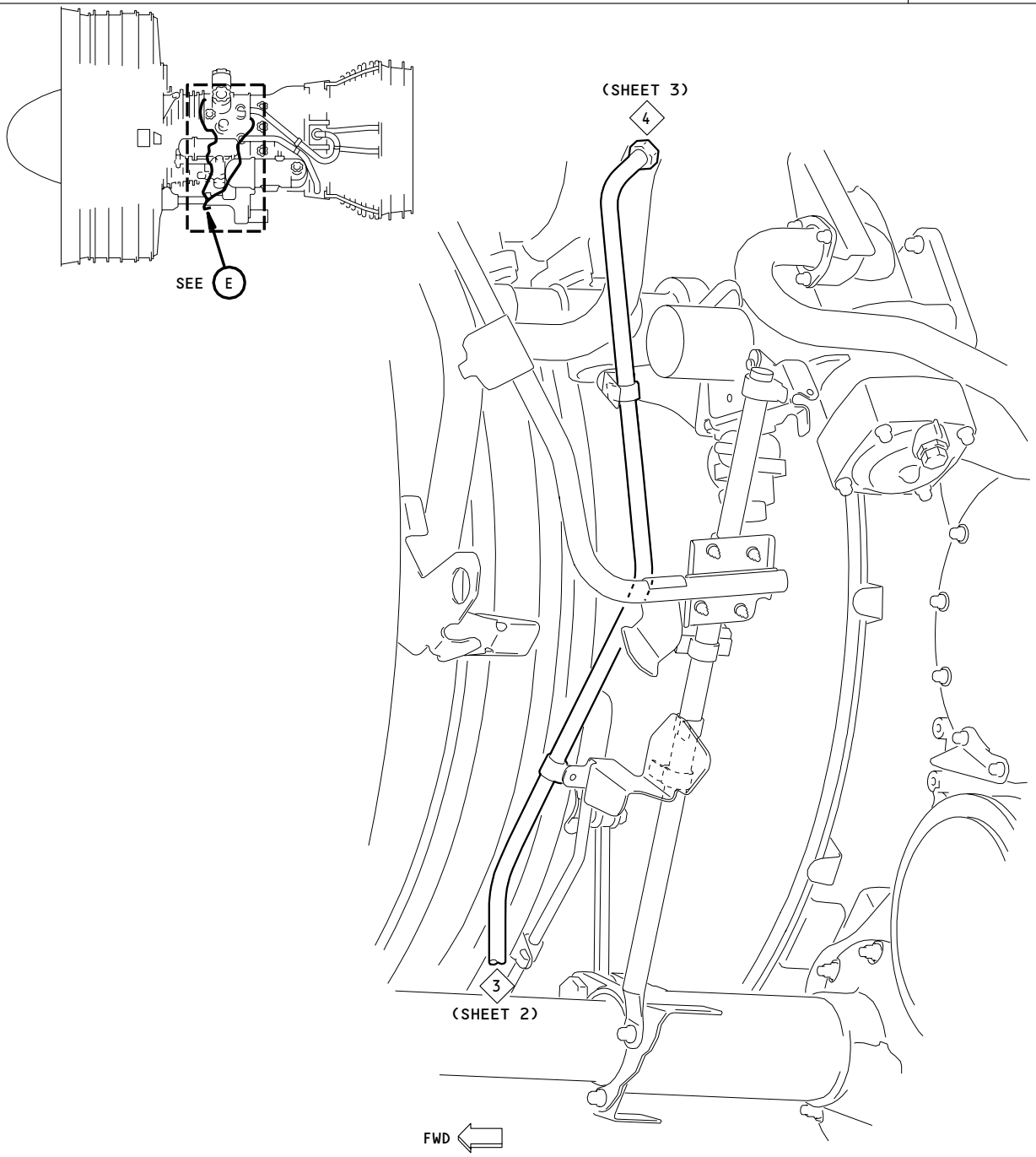
Strut Drains Inspection
Figure 605 (Sheet 1)



Strut Drains Inspection
Figure 605 (Sheet 2)



Strut Drains Inspection
Figure 605 (Sheet 3)



(VIEW IN THE UP DIRECTION)

E

Strut Drains Inspection
Figure 605 (Sheet 4)