CHAPTER

79

OIL

(GE90-100 SERIES ENGINES)

777-200/300
AIRCRAFT MAINTENANCE MANUAL

CHAPTER 79
OIL

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

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OIL - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This engine oil system examination is to be used when the OMS indicates that the debris monitoring system (DMS) magnet has unwanted material and to examine the health of oil system components. The procedure is also used if the OMS shows the DMS system is not working.

C. This procedure has eight tasks:

(1) A regular examination of the external surfaces of the fan cowls and thrust reverser for oil leaks (walk around).

(2) Examine the engine for oil leaks with the fan cowl panels and thrust reverser open.

(3) Examine the engine for internal oil leaks.

(4) Examine the DMS sensor for unwanted material in the engine oil system.

(5) Examine the magnetic plugs and screens of the lube and scavenge pump for unwanted material in the engine oil system.

(6) Examine the engine oil system for wear metal with an oil sample from the oil tank.

(7) Examine the engine oil system for contamination from fluids (fuel or Skydrol) and solids.

NOTE: You can use this task to find fuel in the engine oil.

(8) A debris monitoring system (DMS) inspection.

TASK 79-00-00-200-801-H01

2. Engine Oil System (External Surfaces (Walk Around)) Inspection

A. General

(1) This task is to examine the outer surfaces of the engine fan cowls and thrust reverser that you can see for oil leaks.

B. References

Reference	Title
71-00-00-800-802-H01	Engine Operation Limits (P/B 201)
71-00-02-000-811-H00	Power Plant Removal (P/B 401)
71-00-02-400-811-H00	Power Plant Installation (P/B 401)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Procedure

SUBTASK 79-00-00-210-001-H01

(1) Visually examine the external surfaces of the fan cowls, the thrust reverser, and the fan blades for evidence of oil leakage.

(a) The engine drain mast

(b) The engine sumps and accessory gearbox overboard drain ports

(c) The left and right fan cowl surfaces

(d) The inlet guide vanes of the fan booster at 6:00 o'clock

(e) The left and right cowl surfaces of the thrust reverser

(f) The split lines of the fan and thrust reverser cowls and the surfaces aft of the oil drain ports.

SUBTASK 79-00-00-810-001-H01

(2) If you see signs of oil leakage, find the source and stop the oil leakage.

(a) Do an examination of the oil system with the fan cowls and thrust reverser open (TASK 79-00-00-200-802-H01).

SUBTASK 79-00-00-210-002-H01

(3) Visually examine the inner surfaces of the fan cowl exhaust, the primary nozzle and the center body for evidence of wet oil.

(a) Isolate the source and correct the cause of the oil leakage.

(b) If oil consumption is above the approved limits (TASK 71-00-00-800-802-H01), replace the engine. These are the tasks: Power Plant Removal, TASK 71-00-02-000-811-H00 and Power Plant Installation, TASK 71-00-02-400-811-H00.

SUBTASK 79-00-00-210-003-H01

(4) Visually examine the aft area of the fan blades and first-stage vanes of the booster at the 6:00 o'clock position.

(a) If the fan blades are wet with oil:

1) Do the internal oil leak examine - examine the first-stage booster vanes.

2) If the first-stage booster vanes are wet with oil, do an idle leak check.

3) If the oil leak is confirmed, replace the engine. These are the tasks: Power Plant Removal, TASK 71-00-02-000-811-H00 and Power Plant Installation, TASK 71-00-02-400-811-H00.

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean that there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

SUBTASK 79-00-00-210-009-H00

(5) Visually examine the center vent tube (CVT) for indications of oil dripping.

(a) Any amount of oil dripping from center vent tube is acceptable, if:

1) Oil consumption is not more than the recommended maximum limit, (Engine Operation Limits, TASK 71-00-00-800-802-H01).

——— END OF TASK ———

TASK 79-00-00-200-802-H01

3. Engine Oil System (Fan Cowl Panels and Thrust Reversers Open) Inspection

(Figure 601, Figure 602, Figure 603, Figure 604, Figure 605)

A. General

(1) This task is to examine the inside surfaces of the fan cowl panels, thrust reversers, and the engine oil system for oil leaks.

(2) Refer CESM No. 8 GE90-115B Oil System Guide for actual location of the Oil system hardware such as Oil tubes, B-nut fittings and accessories. This CESM is available on myGEAviation.com.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-700-804-H01	Test No. 5 - Idle Leak Check (P/B 501)
71-00-00-700-805-H01	Test No. 6 - Part-Power Leak Check (P/B 501)
71-00-00-800-836-H00	Dry Motor (P/B 201)
71-00-02-000-811-H00	Power Plant Removal (P/B 401)
71-00-02-400-811-H00	Power Plant Installation (P/B 401)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
71-71-00-700-801-H01	Engine Vents and Drains Examination (P/B 601)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)
79-11-00-200-801-H01	Oil Storage System Inspection (P/B 601)
79-21-00-200-801-H01	Oil Distribution System Inspection (P/B 601)
79-30-00-200-801-H01	Oil Indicating System Inspection (P/B 601)
80-11-01-000-801-H01	Engine Starter Removal (P/B 401)
80-11-01-200-801-H01	Engine Starter Inspection (P/B 601)
80-11-01-200-803-H00	Engine Starter Turbine Wheel Inspection (P/B 601)
80-11-01-400-801-H01	Engine Starter Installation (P/B 401)

C. Consumable Materials

Reference	Description	Specification
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A
D50072 [C02-023]	Oil - Engine Lubricating	MIL-PRF-23699
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A
G50513	Foil - Aluminum	QQ-A-1876

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
20	Seal	79-21-51-33A-120	ARO ALL
		79-21-51-33A-170	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

G. Prepare for the Inspection

SUBTASK 79-00-00-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

H. Procedure

SUBTASK 79-00-00-210-012-H00

(1) Visually examine the oil system for evidence of oil leakage:

(a) Pay particular attention to the fresh oil marks on the engine hardware, fan cowl and thrust reverser cowl. Look for oil tracks, marks or oil drops for signs of the source of the oil leakage.

NOTE: Staining is typical on the Accessory Gear Box (AGB) and Transfer Gearbox (TGB) area. Staining does not mean that there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

(b) Do a visual inspection of the oil system hardware such as tubes, B-nut fittings, accessories and sensors for oil leakage as follows:

CAUTION A LOOSE B-NUT ON THE OIL TANK VENT TUBE CAN CAUSE OIL LEAKAGE EVENTS WHICH MAY RESULT IN FIRE HAZARDS IN THE GE90 FLEET.

CAUTION A MISSING OR DAMAGED O-RING AT THE ACCESSORY-GEAR-BOX CAN CAUSE AN OIL LOSS. OIL LOSS CAN CAUSE A FIRE, OR DAMAGE TO THE ENGINE AND ENGINE FAILURE.

1) Pay particular attention to loose B-nut fittings, oil tube cracks and AGB Line Replaceable Unit (LRU) interface area for signs of oil leakage.
2) Do an inspection of the oil supply tubes from the oil tank to the lube pump, from the lube pump to the A-sump, B-sump, C-sump, AGB and TGB.
3) Do an inspection of the oil scavenge tubes from the A-sump, B-sump, C-sump, AGB and TGB to the lube pump and scavenge return from the lube pump to the oil tank.
4) Do an inspection of the oil vent tubes from the B-sump (Turbine Center Frame (TCF)) to the A-sump, from the oil tank to the A-sump.
5) Do an inspection of the drain lines that follow (Engine Vents and Drains Examination, TASK 71-71-00-700-801-H01).
   a) Oil tank scupper drain.
   b) Backup generator overtemperature case drain.
   c) B-sump and C-sump Drain lines.
   d) Center Vent Tube.
   e) Drain mast.
6) Do an inspection of the sump reference pressure line from the TGB to the oil pressure sensor.
7) Do an inspection of the TGB horizontal support housing for any oil leakage.
8) Do an inspection of the oil system accessories that follow for signs of oil leaks (Oil Distribution System Inspection, TASK 79-21-00-200-801-H01).
   a) The Main Fuel/Oil Heat Exchanger.
   b) The Lube and Scavenge Pump.
   c) The Anti-Leak Valve.
   d) The Debris Monitoring System (DMS) Sensor.
   e) The DMS Air/Oil Separator.
   f) The DMS Conditioner.

9) Do an inspection of the oil system sensors that follow for signs of oil leaks (Oil Indicating System Inspection, TASK 79-30-00-200-801-H01).
   a) Look for signs of oil leaks between the oil level sensor and the oil tank.
   b) Look for signs of oil leaks at the oil temperature sensor and the oil tank.
      NOTE: The oil temperature sensor is mounted in an adapter in the oil supply tube just aft of the fan hub frame at the 5:30 clock position.
   c) Look for signs of an oil leak between the oil pressure sensor and the backup generator (Variable Speed Constant Frequency (VSCF)) oil/oil heat exchanger.
   d) Look for signs of an oil leak between the oil filter differential pressure sensor and the lube and scavenge pump.
10) Do an inspection of the oil tank for signs of oil leaks (Oil Storage System Inspection, TASK 79-11-00-200-801-H01).
11) Look carefully at the lower frame struts for signs of internal oil leakage.

SUBTASK 79-00-00-020-001-H00

(2) Do these steps to find the source of the oil leakage that is found during the visual inspection:
   (a) Use a clean cotton wiper, G00034 to put a wrap around the B-nut or the tube flanges that can have oil leakage during engine operation to absorb the oil.
      1) Put a wrap of aluminum foil, G50513 over the cotton wiper, G00034 to hold it in place. Tightly attach the aluminum foil, G50513 with safety cable or lock wire.
   (b) Disconnect the drain tubes and attach containers to the ends of the tubes.
   (c) Do this task: Test No. 6 - Part-Power Leak Check, TASK 71-00-00-700-805-H01.
   (d) Do a check of the amount of oil in the containers for leakage that is greater than the oil limits (Engine Vents and Drains Examination, TASK 71-71-00-700-801-H01).
   (e) Remove the aluminum foil, G50513 and cotton wiper, G00034 from the B-nuts and tube flanges.
   (f) Look for oil stains on the gauze at the B-nuts and tube flanges and repair as necessary.
      NOTE: Staining is typical on the AGB and TGB area. Staining does not mean that there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

SUBTASK 79-00-00-211-001-H00

(3) Do an inspection of the TCF (B-sump) vent tube flange seal for oil leakage at the TCF area (Figure 602).
   NOTE: Oil leaking from the seal can cause traces on the B-sump vent flange, Environmental Control System (ECS) duct, and the thrust reverser cowling.
   (a) Replace the leaking seal in or less than 100 flight cycles at next convenient maintenance opportunity as follows, if the engine oil consumption is in the AMM limits.
      NOTE: B-sump vent tube is at two locations on TCF. One is at 2 o'clock position and another is at 10 o'clock position on the TCF assembly (Aft Looking Forward).
      1) TCF 2 o'clock position (Aft Looking Forward): Remove the B-sump vent tube [18] at the TCF to help with seal replacement, (Figure 602).
         a) Remove the bolts [21] and nuts [22].

b) Disconnect the B-sump vent tube [18] from the TCF vent tube [28] on the TCF assembly.

<1> Remove and discard the seal [20].

c) Install the new seal [20] as follows:

<1> Attach the B-sump vent tube [18] to the TCF vent tube [28] on the TCF assembly.

<2> Put the new seal [20] between the flanges of the B-sump vent tube [18] and the TCF vent tube [28].

NOTE: Make sure that the flange pilot of the vent tube extends correctly through the hole in the seal.

<3> Put the plate [27] against the outer surface of the TCF vent tube [28] flange with the spacers of the plate [27] on each side of the TCF vent tube [28].

<4> Attach the B-sump vent tube [18] to the TCF vent tube [28] with the bolts [21] and the nuts [22].

<a> Tighten the nuts [22] to 109 in-lb (12 N·m) to 127 in-lb (14 N·m).

2) TCF 10 o'clock position (Aft Looking Forward): Remove the B-sump vent tube [19] at the TCF to help with seal replacement, (Figure 602).

a) Remove the bolts [23] and nuts [24].

b) Disconnect the B-sump vent tube [19] from the TCF vent tube [29] on the TCF assembly.

<1> Remove and discard the seal [20].

c) Install the new seal [20] as follows:

<1> Attach the B-sump vent tube [19] to the TCF vent tube [29] on the TCF assembly.

<2> Put the new seal [20] between the flanges of the B-sump vent tube [19] and the TCF vent tube [29].

NOTE: Make sure that the flange pilot of the vent tube extends correctly through the hole in the seal.

<3> Put the plate [30] against the outer surface of the TCF vent tube [29] flange with the spacers of the plate [30] on each side of the TCF vent tube [29].

<4> Attach the B-sump vent tube [19] to the TCF vent tube [29] with the bolts [23] and the nuts [24].

<a> Tighten the nuts [24] to 109 in-lb (12 N·m) to 127 in-lb (14 N·m).

d) Do an idle leak check after the seal replacement (Test No. 5 - Idle Leak Check, TASK 71-00-00-700-804-H01).

3) Do an inspection of the TCF (No. 4 and No. 5 bearing) oil supply tube [5] at the TCF No. 5 strut and look for oil wetness or traces of oil or oil drops for the signs of oil leakage (Figure 601):

a) If you see an oil leak at the No. 4 and No. 5 bearing oil supply tube [5] on the TCF at No. 5 strut, do the inspection as follows:

<1> Get access to the oil supply tube [5] as follows:

<a> Remove the bolt [12] and loop clamp [13] from the oil supply bracket [9].

NOTE: The old loop clamps [7] are installed with bolts [6] and nuts [17]. It is not necessary to use different bolts [6] and nuts [17] on the new hose clamp [16].

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<b> Remove the nut [17], bolt [6], loop clamp [7], spray shield [8] and spray shield [15].

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<c> Remove the hose clamp [16] that attaches the spray shield to the connections on each end of the oil supply tube [5], spray shield [8] and spray shield [15].

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<d> Remove the nuts [11] and bolts [14].

<e> Remove the oil supply bracket [9].

<f> Slide the outer sleeve [10] over the No. 4 and No. 5 bearing oil supply tube [5] B-nut.

<g> Slide the outer sleeve [10] back as far as possible along the TCF (No. 4 and No. 5 bearing) oil supply tube [5].

<2> Do the dry motor of the engine (Dry Motor, TASK 71-00-00-800-836-H00).

<a> During the dry motor procedure, check for oil leakage from the oil supply tube [5] at the TCF No. 5 strut cavity.

NOTE: The oil supply tube [5] passes through the TCF No. 5 strut cavity. If any internal cracks or damage are caused on the tube, it can have oil leakage.

b) If you see oil leakage from the TCF No. 5 strut cavity, replace the engine. These are the tasks:

<1> Power Plant Removal, TASK 71-00-02-000-811-H00

<2> Power Plant Installation, TASK 71-00-02-400-811-H00

c) If there is no leakage, install the oil supply tube [5] hardware.

<1> Slide the outer sleeve [10] along the No. 4 and No. 5 bearing oil supply tube [5] and back in position.

<2> Apply Acheson GP460 compound, D50043 [C02-058] to the threads and washer faces of the nuts [11].

<3> Install the oil supply bracket [9] with bolts [14] and nuts [11]. Tighten the nuts [11] with your fingers.

<4> Install the loop clamp [13] and bolt [12].

<5> Torque the nuts [11] to 107 in-lb (12.1 N·m) to 123 in-lb (13.9 N·m).

<6> Torque the bolt [12] to 55 in-lb (6.2 N·m) to 70 in-lb (7.9 N·m).

<7> Install the spray shield [8] and spray shield [15] on the No. 4 and No. 5 bearing oil supply tube [5].

NOTE: The old loop clamps [7] are installed with nuts [17] and bolts [6]. It is not necessary to use different nuts [17] and bolts [6] on the new hose clamp [16].

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<8> Apply a thin coat of engine lubricating oil, D50072 [C02-023] to the nut [17].

<9> Install the loop clamp [7], around the spray shield [8] and spray shield [15]. Attach the loop clamp [7] with nut [17] and bolt [6].

<a> Tighten the nut [17] to 55 in-lb (6.2 N·m) to 70 in-lb (7.9 N·m).

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<10> Install the hose clamp [16] around the spray shield [8] and spray shield [15].

<a> Tighten the hose clamp [16] to 32 in-lb (3.6 N·m) to 38 in-lb (4.3 N·m).

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SUBTASK 79-00-00-210-013-H00

(4) Do an inspection of the TRF oil supply tube [31] at the 5 o'clock position (Aft looking forward) on the Turbine Rear Frame (TRF) (Figure 603) as follows.

(a) Do an inspection of the tube elbow area as shown for cracks.

(b) Do an inspection of the spray shield area for leaks. If you see a leak, remove the spray shield and do an inspection of the B-nut for looseness. If B-nut is loose, apply triple torque method to the B-nut.

(c) Refer below procedure for spray shield removal and installation.

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1) Removal of spray shield: Remove the hose clamp [16] that attaches the spray shield [8] and spray shield [15] and to the TRF oil supply tube [31]. Keep the removed serviceable hose clamp [16] for installation.

2) Installation of spray shield: Put the hose clamp [16] that attaches the spray shield [8] and spray shield [15]. Tighten the hose clamp [16] to 55 in-lb (6.2 N·m) to 70 in-lb (7.9 N·m).

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3) Removal of spray shield: Remove the hose clamp [16] that attaches the spray shield [8] and spray shield [15] and to the TRF oil supply tube [31]. Remove the split bushings [34]. Keep the removed serviceable hose clamp [16] and split bushing [34] for installation.

ARO ALL POST SB 777-GE100-79-0041 (Continued)

CAUTION

MAKE SURE THAT YOU INSTALL THE NEW SPLIT-BUSHINGS ON THE TRF OIL-SUPPLY TUBE. MISSING SPLIT-BUSHINGS WILL CAUSE DIRECT CONTACT WITH THE TRF OIL-SUPPLY TUBE AND CAUSE THE TRF OIL-SUPPLY TUBE TO WEAR OR LOOSEN THE FITTING.

4) Installation of spray shield: Install the new split bushings [34] at the spray shield [8] and spray shield [15] and hose clamp [16] attaching point around the TRF oil supply tube [31].

NOTE: For POST-SB 777-GE90-100-79-0041 keep correct orientation of spray shield as show in Figure 603.

NOTE: The new split bushings [34] are not necessary if the new TRF oil supply tube P/N 2716M73G01 is installed.

5) Attach the spray shield [8] and spray shield [15] with the loop clamp [7], machine bolt [35], and self-locking Nut [36]. Tighten the self-locking Nut [36] to 55 in-lb (6.2 N·m) to 70 in-lb (7.9 N·m).

ARO ALL

SUBTASK 79-00-00-210-014-H00

(5) Do an inspection of the TRF oil scavenge tube [32] B-nut for looseness (Figure 604).

NOTE: TRF oil scavenge tube [32] has two B-nuts outboard and inboard as shown in Figure 604.

NOTE: The inboard loose B-nut will cause oil to leak from the C sump cover or C-sump drain line.

(a) If the B-nut is loose, apply triple torque method to the B-nut.

SUBTASK 79-00-00-210-015-H00

(6) Do an inspection of the C-sump drain line for oil dripping.

NOTE: TRF oil scavenge tube [32] coking can cause oil dripping from the C-sump drain line.

(a) Do an inspection of the TRF No 5 bearing oil scavenge tube [32] for coking. Refer to Figure 604.

NOTE: Typically oil scavenge tube [32] coking more than 70 percent is needed for a scavenge interruption to occur. This will result in oil dripping from the C-Sump drain line.

SUBTASK 79-00-00-210-016-H00

(7) Do an Inspection of the oil tank ventilation tube [33] B-nut for looseness. Refer to Figure 605.

NOTE: The subject B-nut gets connected and disconnected during the Fan Stator to Propulsor Installation and Removal.

NOTE: The loose B-nut of the oil tank ventilation tube [33] causes suction and pulls B-sump vent tube oil which causes more oil loss.

(a) If necessary, do Test No. 6 - Part-Power Leak Check, TASK 71-00-00-700-805-H01. An oil leak or oil mist at the 12 o'clock location is visible if the B-nut is loose.

(b) Do an inspection of the B-nut. If you see leakage, then apply the triple torque method to the B-nut.

SUBTASK 79-00-00-210-017-H00

(8) Examine the starter for oil leakage:

(a) Look for signs of oil leaks at the Starter AGB interface, magnetic chip detector or internal through starter.

CAUTION INSTALL THE STARTER MAGNETIC PLUG CORRECTLY. A LOOSE MAGNETIC PLUG CAN CAUSE AN OIL LEAK WHICH CAN CAUSE DAMAGE TO THE ENGINE.

1) Do an inspection of the magnetic chip detector for sign of oil leaks. Replace the preformed packings from the magnetic chip detector if you see an oil leak observed (Engine Starter Inspection, TASK 80-11-01-200-801-H01).

2) Do an inspection of the starter magnetic chip detector for signs of internal starter damage (Engine Starter Inspection, TASK 80-11-01-200-801-H01).

3) If the starter shows signs of oil leaks, do a borescope inspection of starter turbine wheel for evidence of oil leakage on turbine blades. Use Engine Starter Turbine Wheel Inspection, TASK 80-11-01-200-803-H00 for borescope. If you see oil on the turbine blades, replace the starter.

NOTE: A starter internal leak can cause oil to get on the starter turbine blades.

4) If the starter shows signs of oil leaks, replace the preformed packings from the starter drive shaft (Engine Starter Removal, TASK 80-11-01-000-801-H01 and Engine Starter Installation, TASK 80-11-01-400-801-H01).

SUBTASK 79-00-00-210-018-H00

CAUTION MAKE SURE THAT YOU CONNECT THE B-NUT CONNECTION TIGHTLY. THE LOOSE B-NUT CONNECTION AT THE OIL TUBE CAN CAUSE DAMAGE TO THE ENGINE.

(9) Examine the oil tubes and hose B-nut connections at the VSCF OIL/OIL Heat exchanger. Pay special attention to the sump reference pressure hose connection, refer to Figure 606. If you see any loose connection, tighten the B-nut correctly (Instruction for Torque, TASK 70-51-00-910-801-H01).

SUBTASK 79-00-00-160-001-H00

(10) Clean the old oil marks, staining from the engine external parts, tubing, AGB and cowls.

NOTE: This will help to identify the new fresh oil marks.

I. Put the airplane back to its usual condition

SUBTASK 79-00-00-410-001-H01

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

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

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

1) Close these access panels:

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

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

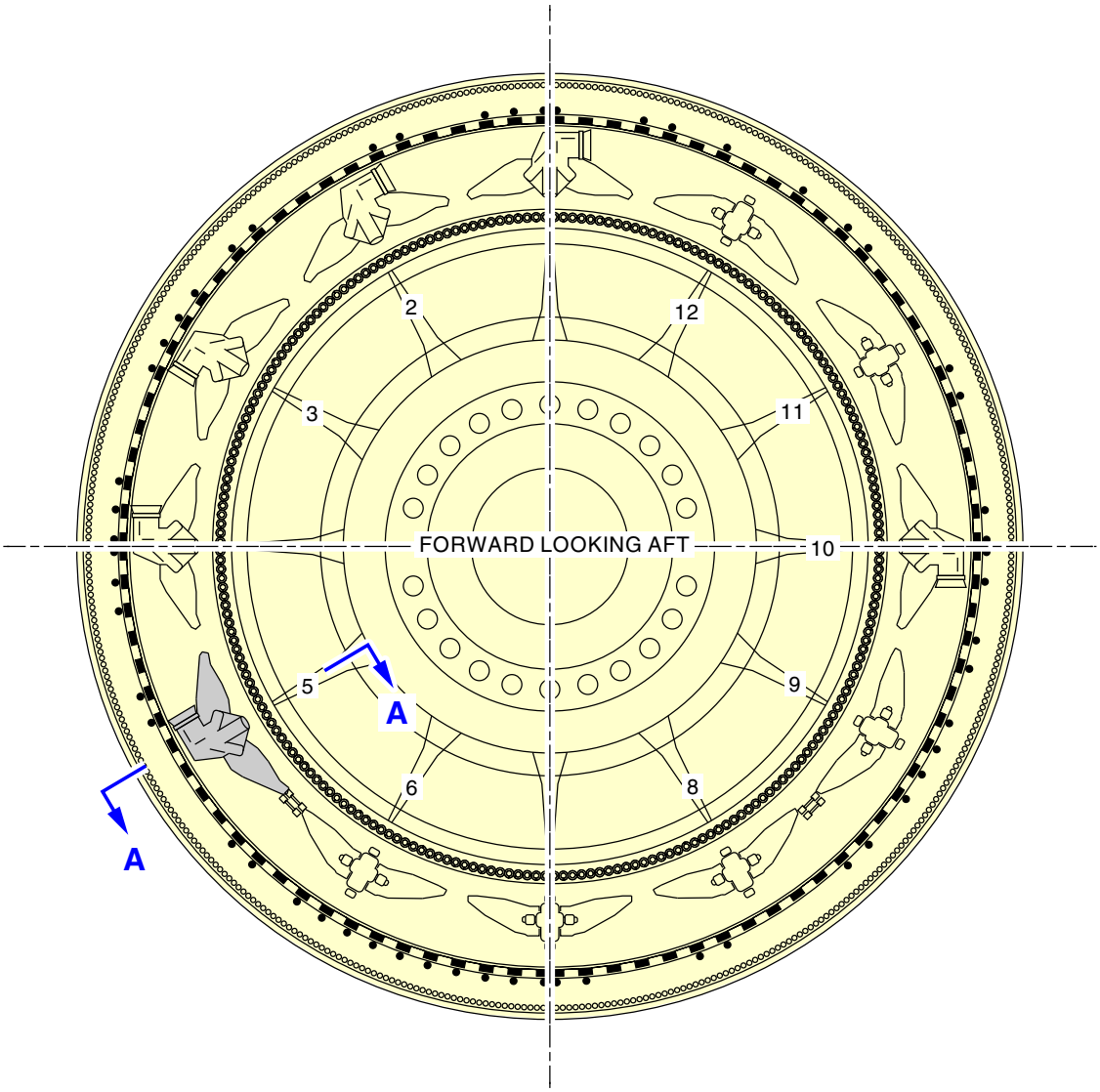
1) Close these access panels:

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

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

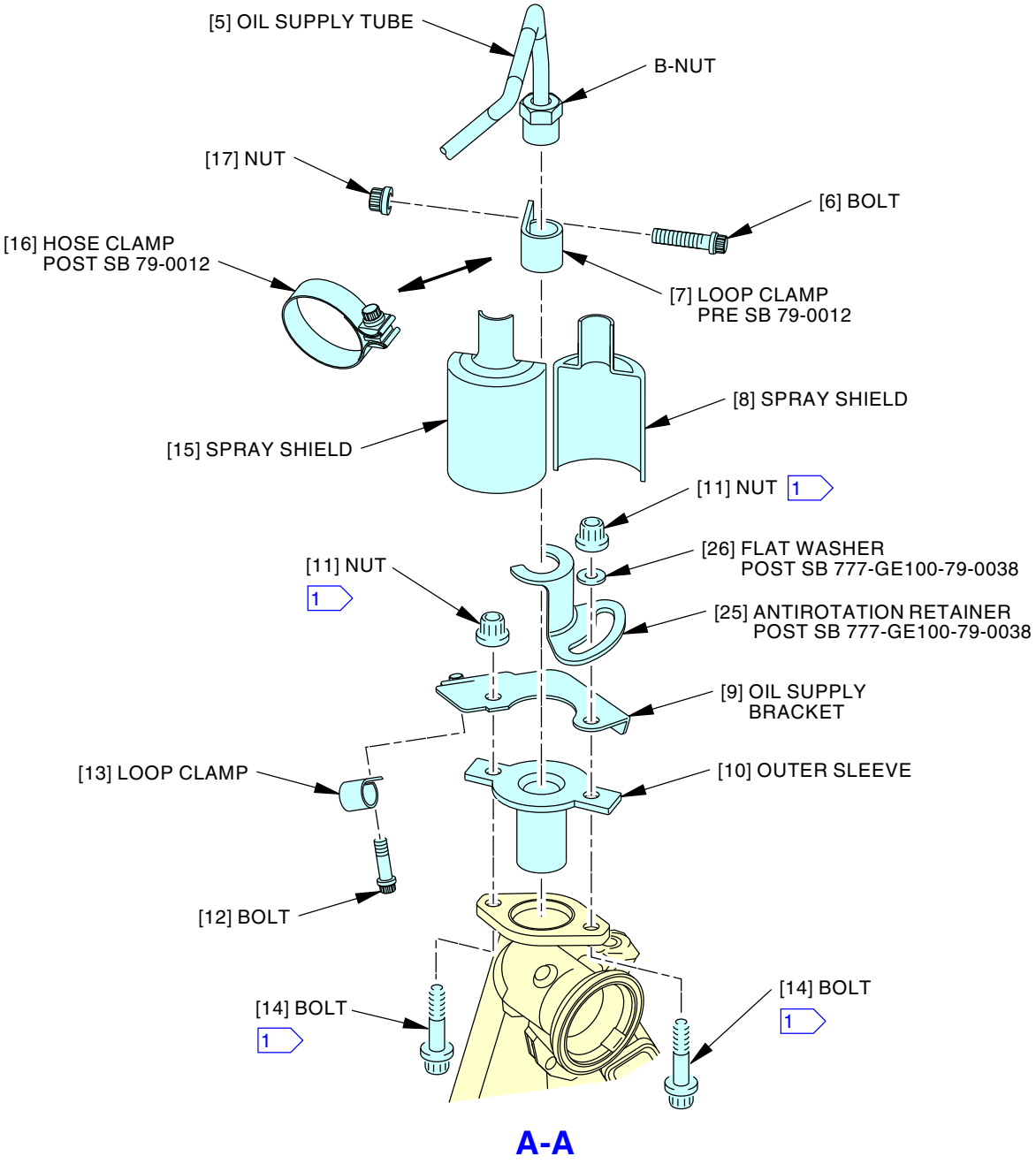
(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———



2459695 S0000572755_V2

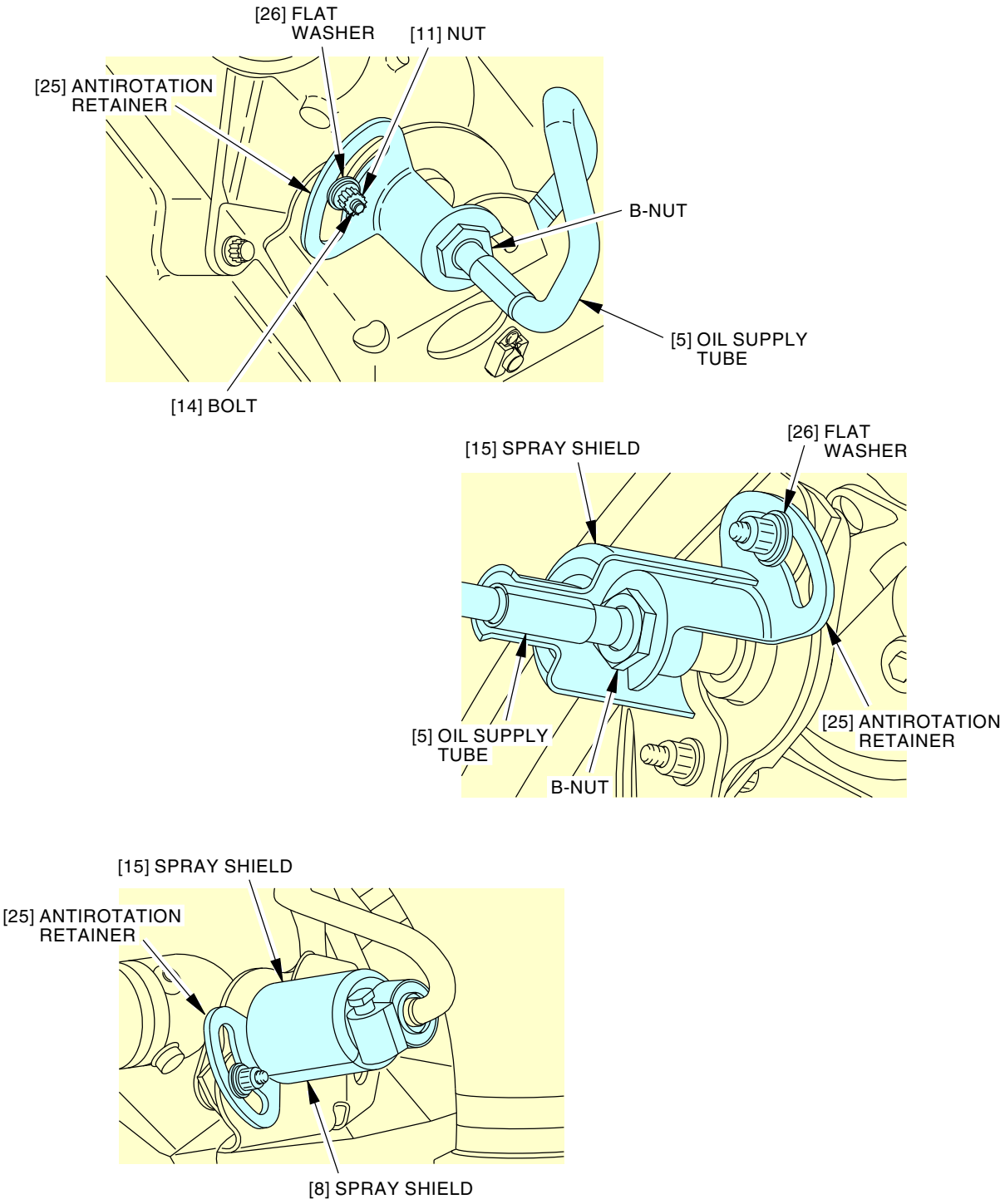
TCF No.4 and No. 5 Bearing Oil Supply Tube Passing Through No.5 Strut
Figure 601/79-00-00-990-805-H00 (Sheet 1 of 3)



1 DIRECTION SHOWN OF LEFT [11] NUT AND [14] BOLT IS FOR POST SB 777-GE100-79-0038 (BOLT IN FROM THE BOTTOM).

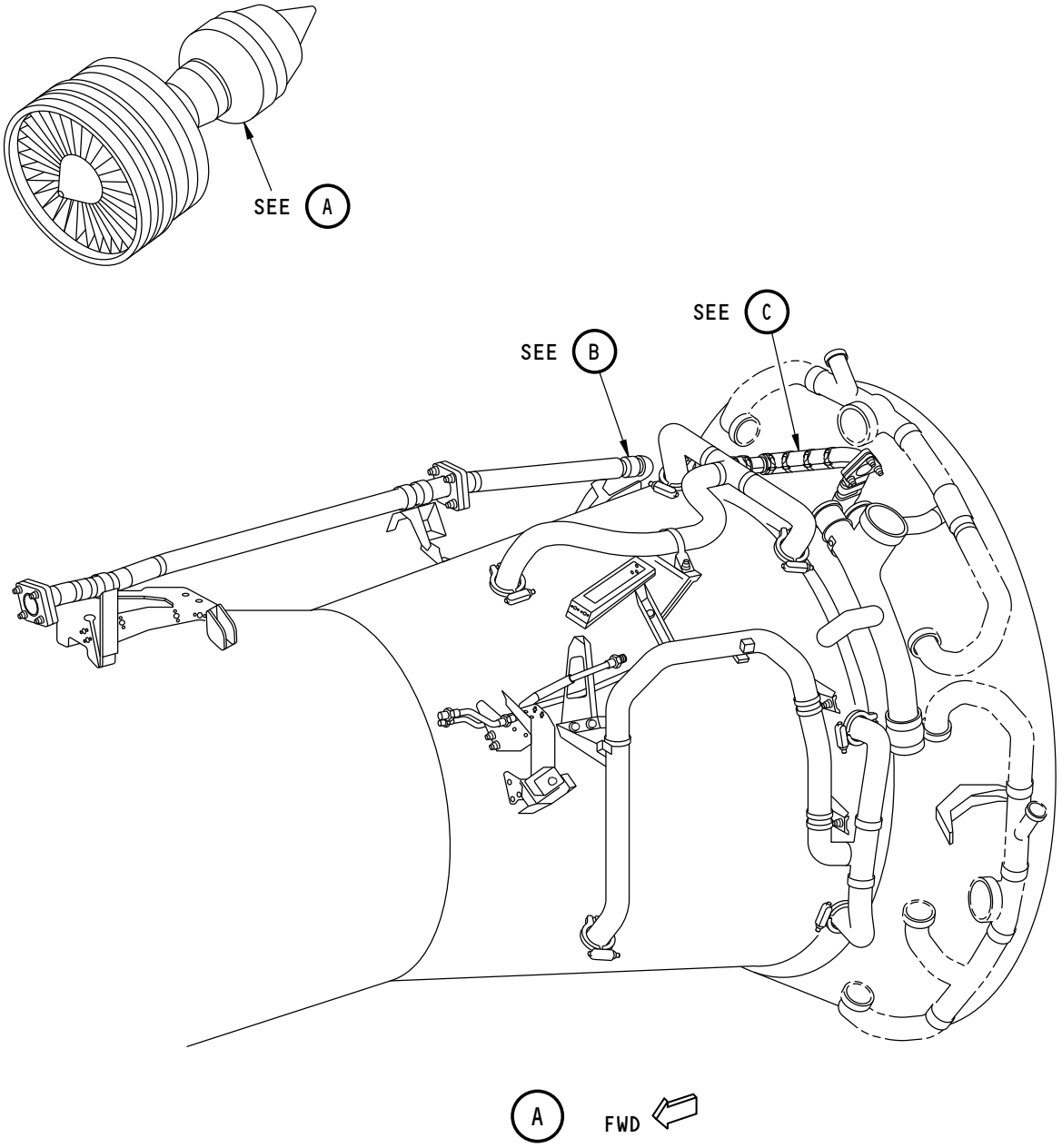
2459696 S0000572756_V3

TCF No.4 and No. 5 Bearing Oil Supply Tube Passing Through No.5 Strut
Figure 601/79-00-00-990-805-H00 (Sheet 2 of 3)



2579463 S0000619563_V1

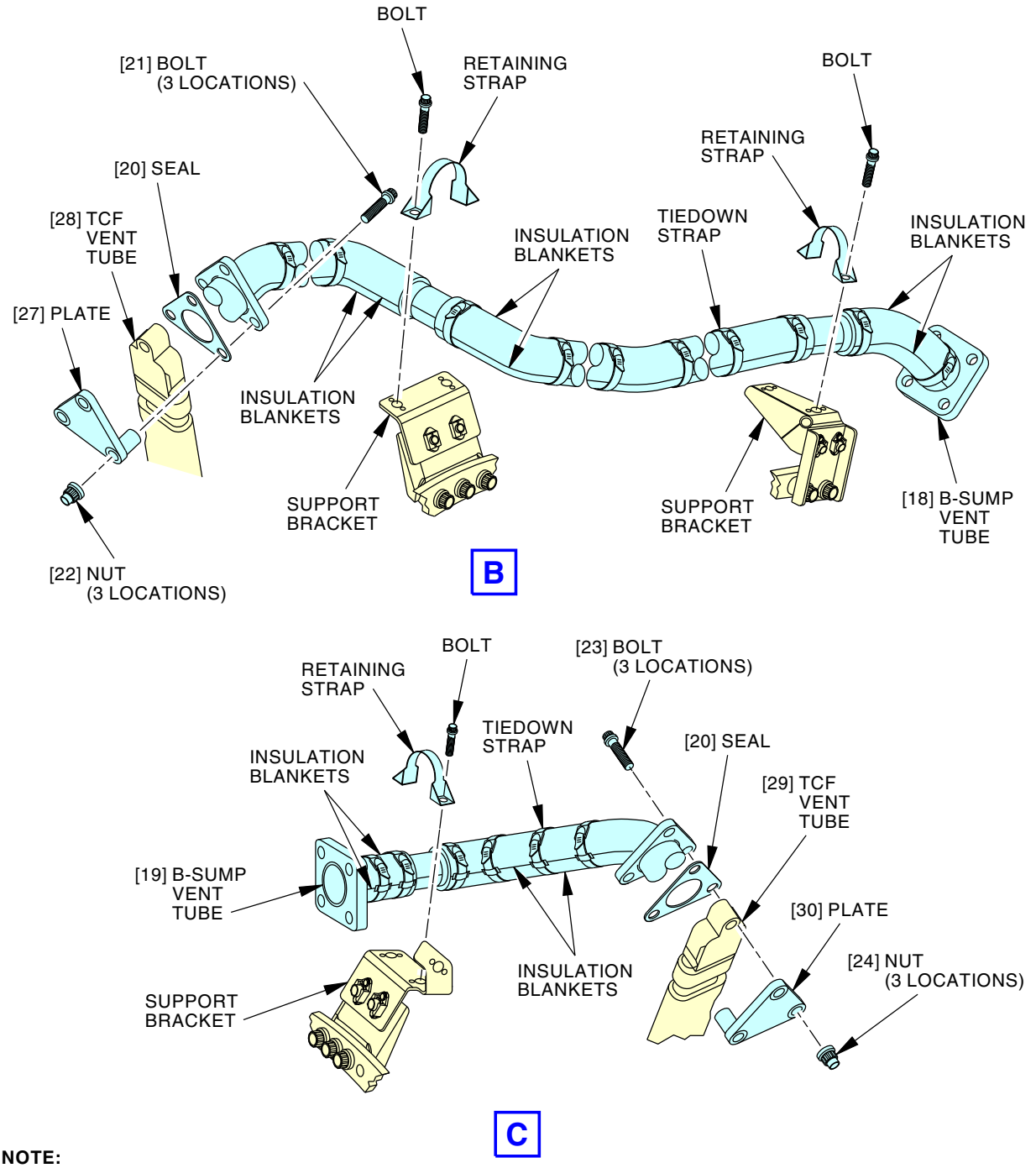
TCF No.4 and No. 5 Bearing Oil Supply Tube Passing Through No.5 Strut
Figure 601/79-00-00-990-805-H00 (Sheet 3 of 3)



NOTE: FAN HUB FRAME ASSEMBLY NOT SHOWN FOR CLARITY.

2483413 S0000584052_V1

Figure 1, B-Sump Vent Tubes
Figure 602/79-00-00-990-806-H00 (Sheet 1 of 2)

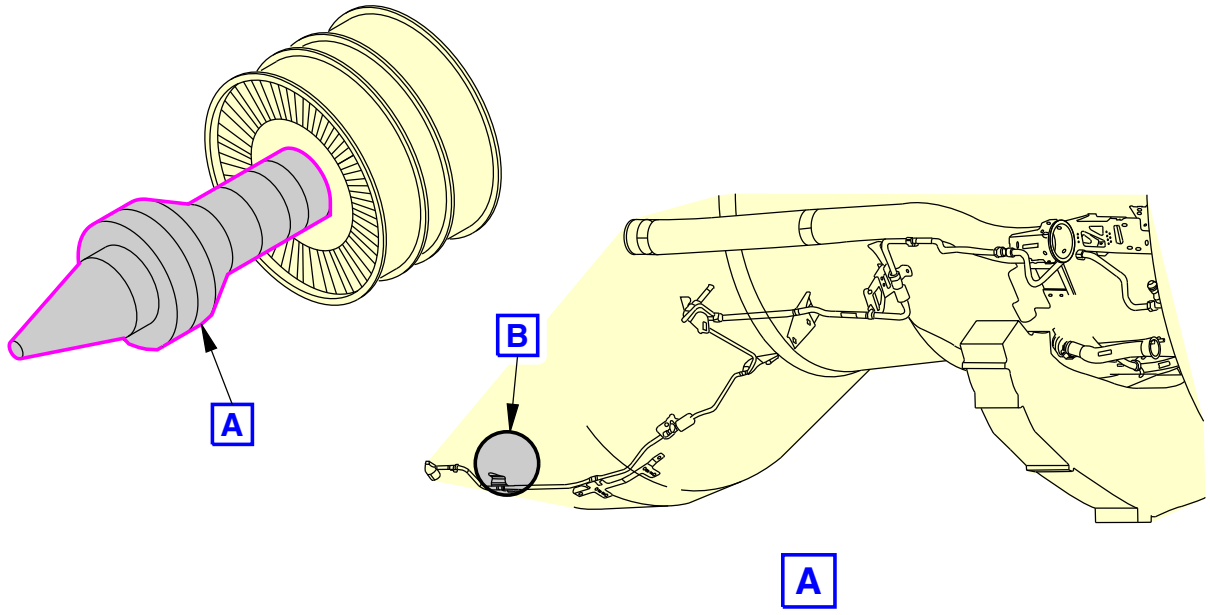


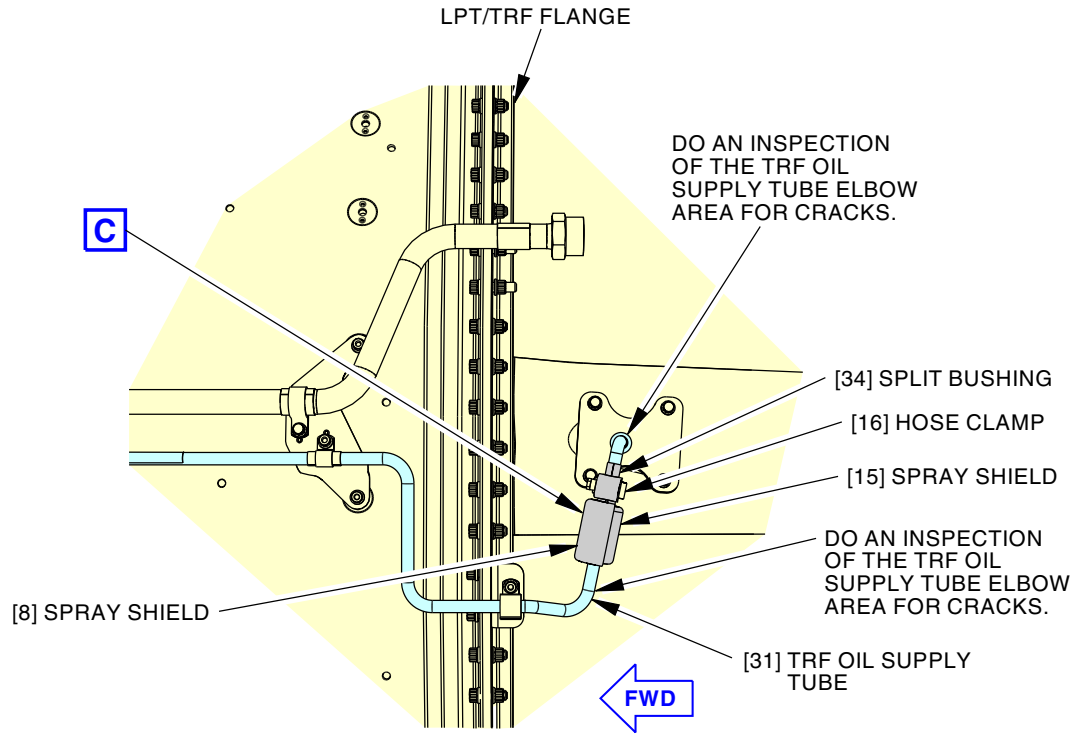
NOTE:

ALL IPC REFERENCES FROM 79-00-00 UNLESS SPECIFIED DIFFERENTLY.

2483419 S0000584053_V2

Figure 1, B-Sump Vent Tubes
Figure 602/79-00-00-990-806-H00 (Sheet 2 of 2)



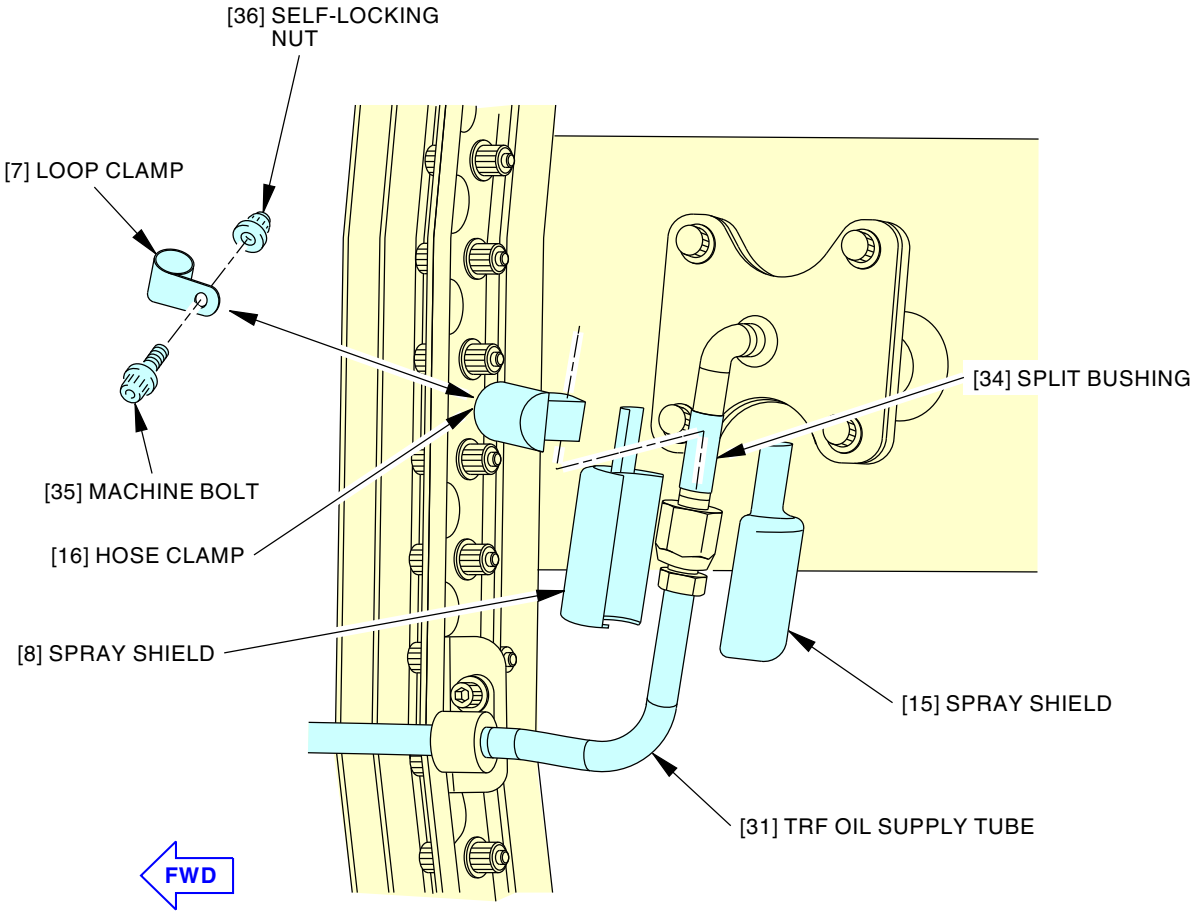


NOTE:

THE SUBJECT FIGURE IS POST SB 79-0041 CONFIGURATION SHOWN FOR REFERENCE ONLY. THE B-NUT IS UNDER THE SPRAY SHIELD.

5042917-00
2795164 S0000636292_V2

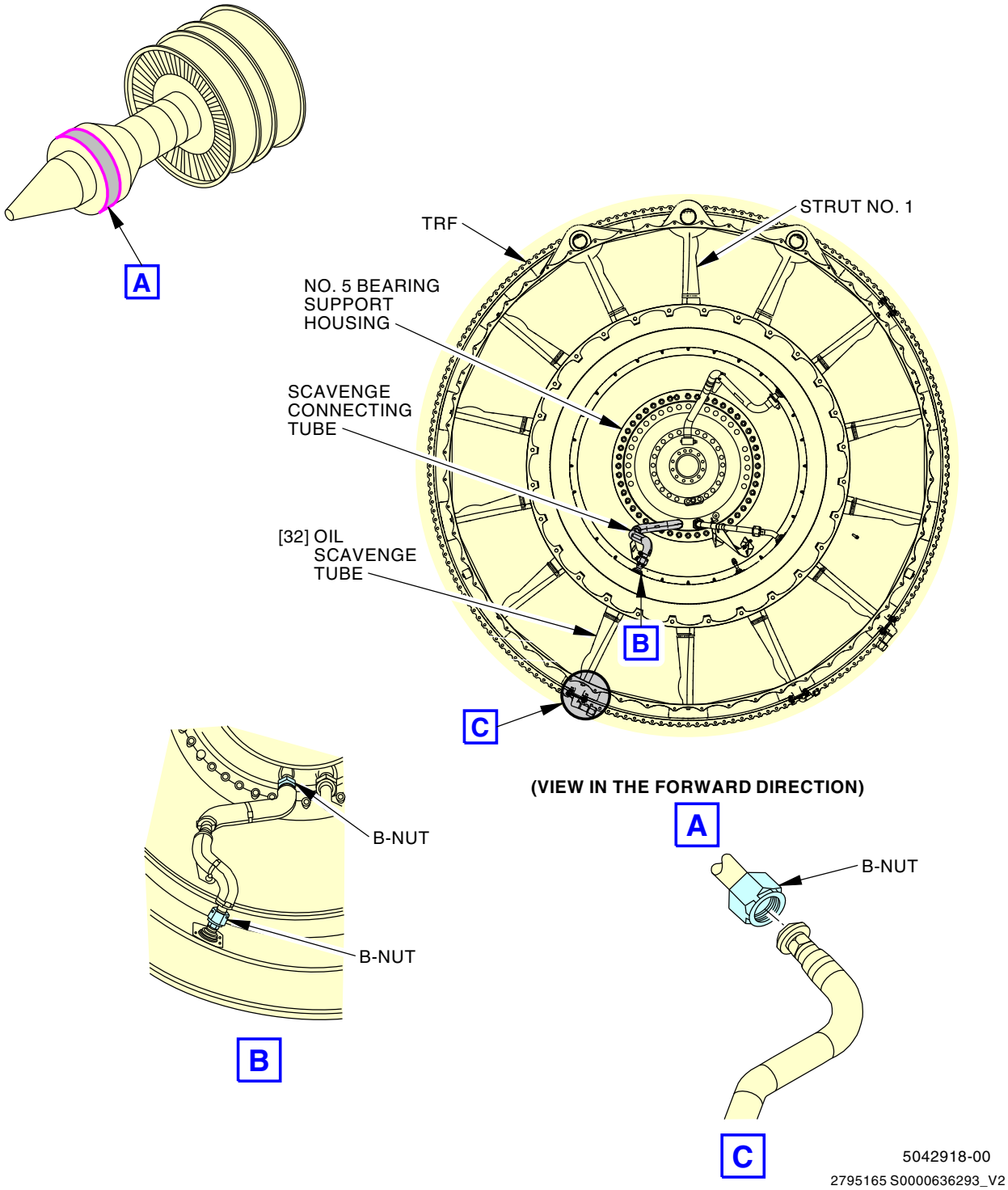
TRF Oil Supply Tube Inspection for Cracks
Figure 603/79-00-00-990-808-H00 (Sheet 1 of 2)



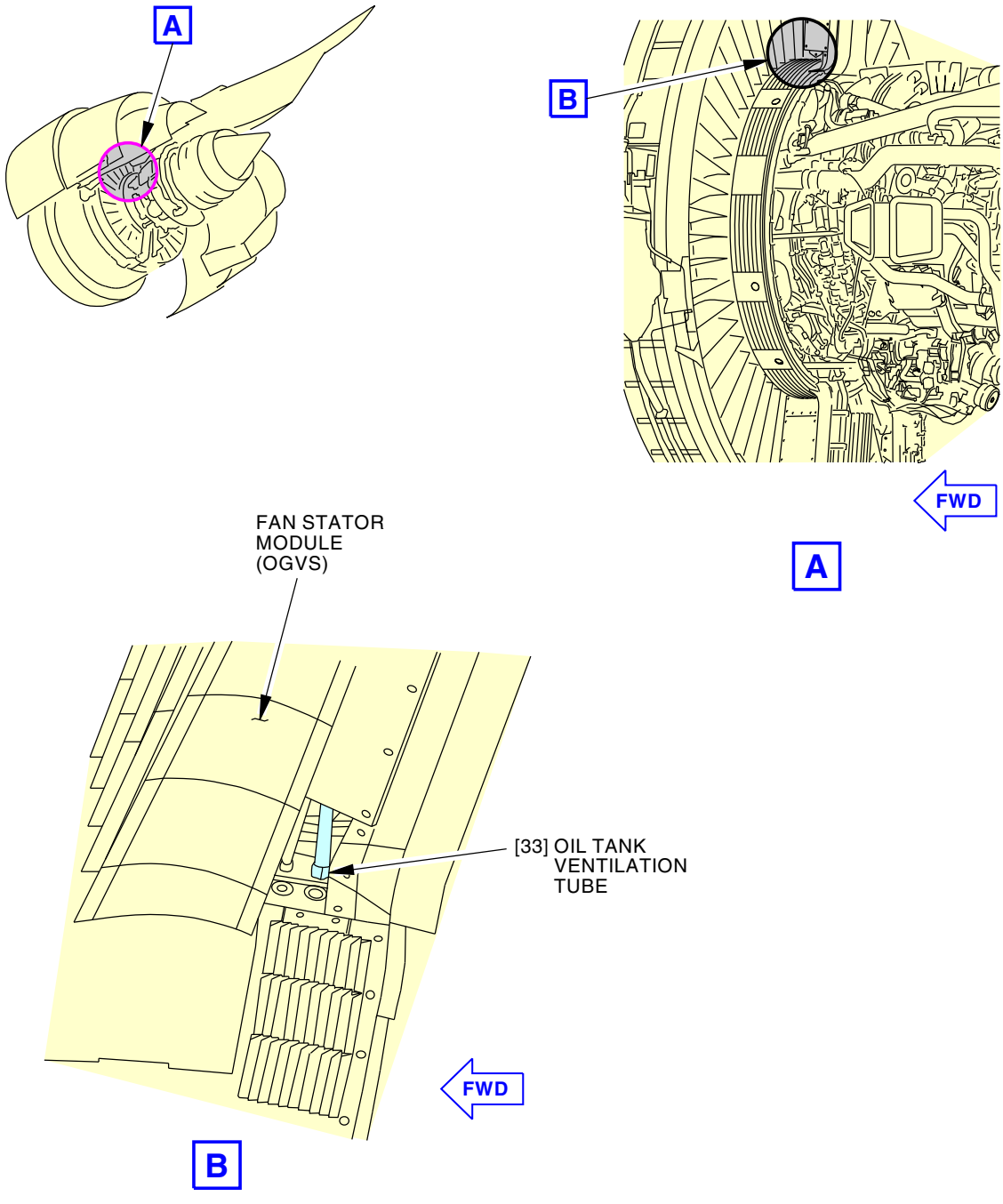
C

2806774 S0000644826_V1

TRF Oil Supply Tube Inspection for Cracks
Figure 603/79-00-00-990-808-H00 (Sheet 2 of 2)

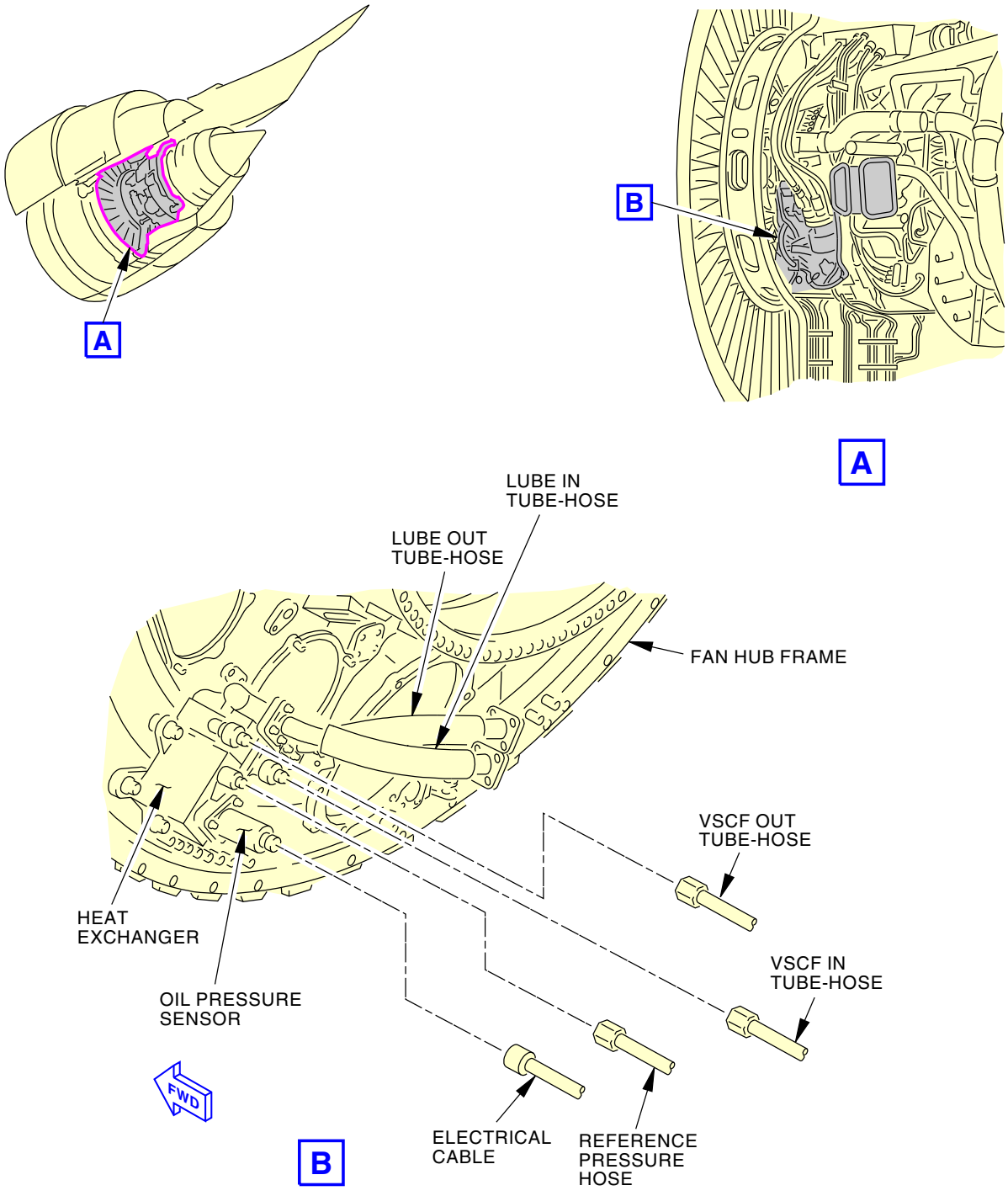


TRF Oil Scavenge Tube B-nut Inspection
Figure 604/79-00-00-990-809-H00



5042919-00
2795166 S0000636294_V2

Oil Tank Vent Tube B-Nut Inspection
Figure 605/79-00-00-990-810-H00



2806811 S0000644827_V1

Oil tube connection at VSCF Oil / Oil Heat Exchanger
Figure 606/79-00-00-990-811-H00

TASK 79-00-00-200-803-H01

4. Engine Oil System (Internal) Inspection

A. General

(1) This task is to examine the internal oil system for leakage.

(2) The task is done to examine the inlet guide vanes and first stage blades of the fan booster for oil.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-00-00-700-805-H01	Test No. 6 - Part-Power Leak Check (P/B 501)
71-00-02-000-811-H00	Power Plant Removal (P/B 401)
71-00-02-400-811-H00	Power Plant Installation (P/B 401)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

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

E. Prepare for the Inspection

SUBTASK 79-00-00-010-002-H01

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

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

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

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

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

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

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

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

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

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

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

F. Engine Oil System (Internal) Inspection

SUBTASK 79-00-00-210-005-H01

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

(1) If the fan blades or the inner side of the fan stator case are wet with oil, do these steps:

(a) Visually examine the inlet guide vanes and first-stage blades of the fan booster to see if they are wet with oil.

(b) If the inlet guide vanes and the first stage blades are wet with oil, do an idle leak check (TASK 71-00-00-700-805-H01).

(c) If the leakage cannot be repaired, replace the engine (TASK 71-00-02-000-811-H00 and TASK 71-00-02-400-811-H00).

G. Put the airplane back to its usual condition

SUBTASK 79-00-00-410-002-H01

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

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

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

1) Close these access panels:

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

(Continued)

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

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

1) Close these access panels:

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

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

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

——— END OF TASK ———

TASK 79-00-00-200-804-H01

5. Engine Oil System (DMS) (Scheduled Maintenance Task) Inspection

(Figure 607 and Figure 608)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task provides the instructions on how to do a visual inspection of the Debris Monitoring System (DMS).

(2) This task is also applicable if the DMS sensor debris message of 79-14551, 79-14552, 79-14561, 79-14562; or, a DMS system failed message of 79-15231 or 79-15232 appear on the MAT system test.

(3) If DMS chip counts occur again and again because of lightning strikes, replace the electrical harness W719 between the DMS sensor and DMS signal conditioner. Refer to EEC (FADEC) Electrical Harnesses (W701-W704, W707-W709, and W717-W719) Removal, TASK 73-22-01-000-802-H01/EEC (FADEC) Electrical Harnesses (W701-W704, W707-W709, and W717-W719) Installation, TASK 73-22-01-400-802-H01.

NOTE: Lightning strikes to the airplane, nacelle and engine can cause 1-3 DMS chip counts.

B. References

Reference	Title
71-00-00-700-817-H01	Test No. 18 - Debris Monitoring System Test (MAT Initiated Test) (P/B 501)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
73-22-01-000-802-H01	EEC (FADEC) Electrical Harnesses (W701-W704, W707-W709, and W717-W719) Removal (P/B 401)
73-22-01-400-802-H01	EEC (FADEC) Electrical Harnesses (W701-W704, W707-W709, and W717-W719) Installation (P/B 401)
79-21-12-000-801-H01	Debris Monitoring System (DMS) Sensor Removal (P/B 401)
79-21-12-400-801-H01	Debris Monitoring System (DMS) Sensor Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-562	Lens - Magnifying, 10x

D. Consumable Materials

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Prepare for the Inspection

SUBTASK 79-00-00-010-003-H01

(1) Do this task: Debris Monitoring System (DMS) Sensor Removal, TASK 79-21-12-000-801-H01.

G. Engine Oil System (DMS) Inspection

SUBTASK 79-00-00-220-003-H00

(1) Visually examine the magnetic tip of the DMS sensor for debris with a 10x magnifying lens, STD-562.

NOTE: USE GE90 NDT Manual (GEK 112158) Part 9. It contains the debris Material Chemical Composition and source (i.e. Engine Sump Areas from where the MCD debris is generated). This can be used to find the source of debris material based on lab analysis results.

NOTE: USE GE90 NDT Manual (GEK 112158) Part 10. It contains MCD debris photos and debris material general characteristics, including appearance. This can be used to visually identify the debris material.

NOTE: Bearing material is classified as M50 or M50 Nil. The Chemical composition of M50 and M50 Nil can be found in GE90 NDT Manual (GEK 112158) Part 9.

NOTE: A small amount of fuzz is usually found on the magnet. Fuzz is very small and very fine debris less than the size of lockwire (0.030 X 0.030 X 0.002 inch).

(a) If you find fuzz on the magnetic tip of the DMS sensor, do these steps:

1) Clean the magnetic tip of the DMS sensor with a clean cotton wiper, G00034.

2) Return the engine to service.

(b) If you see debris other than fuzz or larger than the typical fuzz on the magnetic tip of the DMS sensor, do these steps:

1) Carefully remove the debris from the magnetic tip of the DMS sensor with a clean, cotton wiper, G00034.

2) Keep and do a visual inspection of the debris for identification of the debris material. Refer to TASK 79-00-00-200-805-H01, Subtask 79-00-00-210-011-H00. Refer to GE90 NDT Manual (GEK 112158) part 10 for identification of the debris material.

3) If the debris cannot be visually identified, send all debris to the lab for material identification. Refer to GE90 NDT Manual (GEK 112158) part 9 to find the source of debris material based on lab analysis results.

4) Do this task: Engine Oil System (Lube and Scavenge Pump Screens and Magnetic Plugs) Inspection, TASK 79-00-00-200-805-H01.

SUBTASK 79-00-00-400-001-H00

(2) Install back the DMS sensor as follows.

(a) Clean the magnetic tip of the DMS sensor with a clean cotton wiper, G00034.

(b) Install the DMS sensor (TASK 79-21-12-400-801-H01).

(c) Do this task: Test No. 18 - Debris Monitoring System Test (MAT Initiated Test), TASK 71-00-00-700-817-H01).

1) Select YES to reset the DMS chip counters when asked.

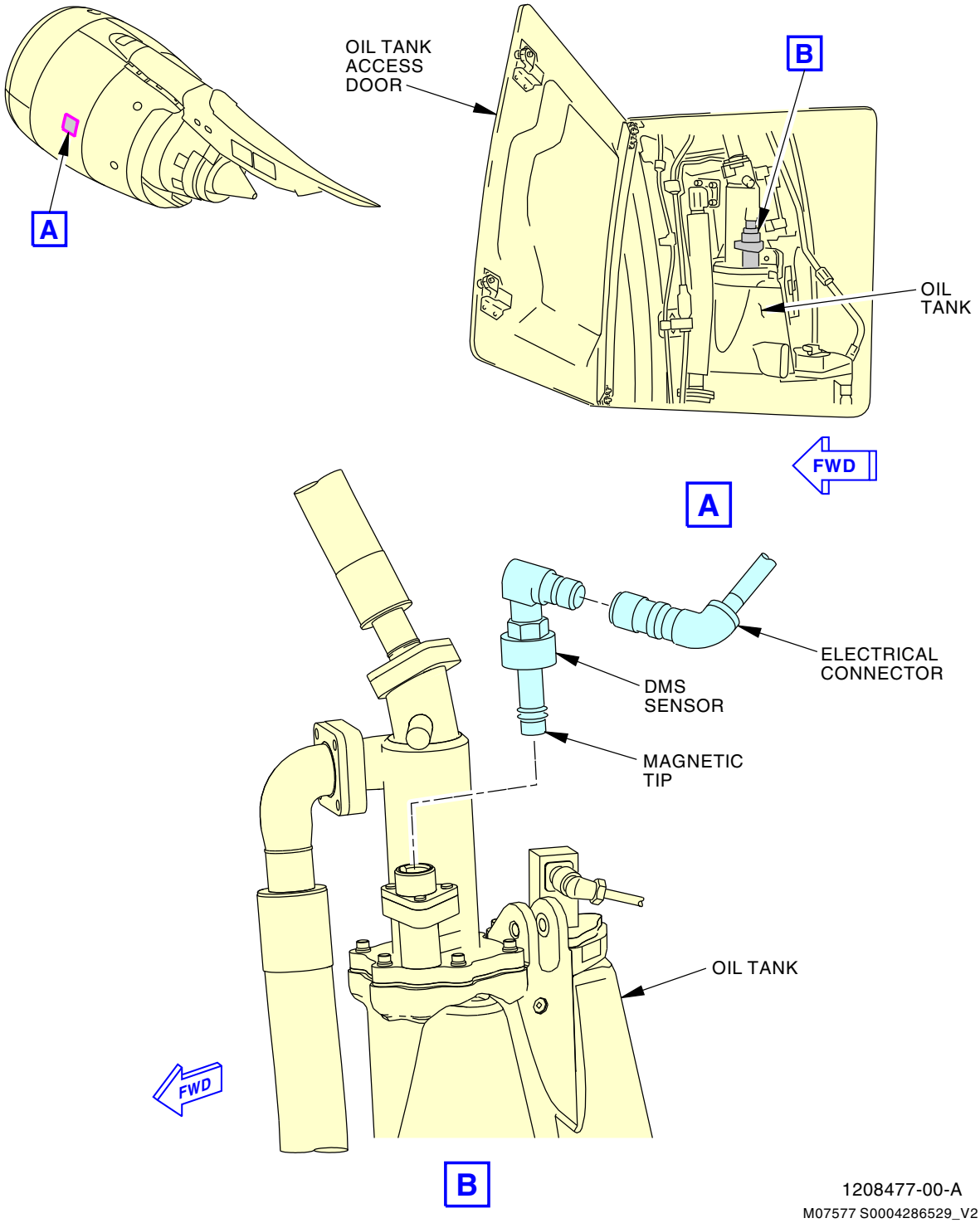
(d) Continue the engine in service.

H. Engine Oil System (DMS) Test

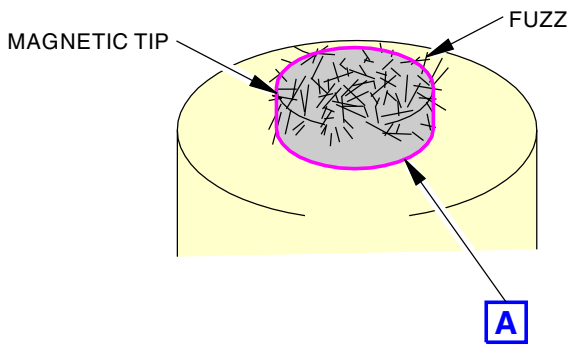
SUBTASK 79-00-00-790-002-H00

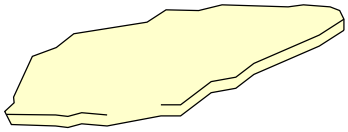
(1) Do the test(s) listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———



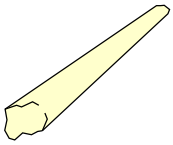
Oil System Inspection
Figure 607/79-00-00-990-801-H01





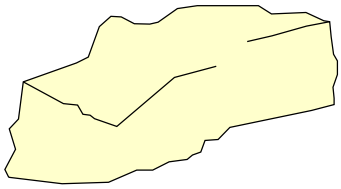
FLAKE

A



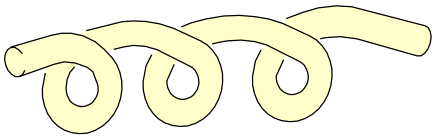
SLIVER

A



CHUNK

A



MACHINE CURL

A

NOTE:
OTHER CONTAMINATION FOUND ON THE MAGNETIC TIP.

1123654-01-A
M07579 S0004286531_V2

Magnetic Tip Inspection
Figure 608/79-00-00-990-804-H01

TASK 79-00-00-200-805-H01

6. Engine Oil System (Lube and Scavenge Pump Screens and Magnetic Plugs) Inspection

A. General

(1) This task provides the instructions on how to examine the magnetic plugs and screens of the lube and scavenge pump.

(2) The task also provides the steps that will let you analyze the material that you find.

B. References

Reference	Title
12-22-01-610-806-002	Flush the Oil Tank (P/B 301)
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-00-00-700-805-H01	Test No. 6 - Part-Power Leak Check (P/B 501)
71-00-02-000-811-H00	Power Plant Removal (P/B 401)
71-00-02-400-811-H00	Power Plant Installation (P/B 401)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)
79-21-04-000-801-H01	Scavenge Oil Inlet Screens Removal (P/B 201)
79-21-04-400-801-H01	Scavenge Oil Inlet Screens Installation (P/B 201)
80-11-01-200-801-H01	Engine Starter Inspection (P/B 601)

C. Tools/Equipment

Reference	Description
STD-562	Lens - Magnifying, 10x

D. Consumable Materials

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

(Continued)

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

G. Prepare for the Inspection

SUBTASK 79-00-00-010-004-H01

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

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

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

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

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

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

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

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

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

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

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

SUBTASK 79-00-00-010-005-H01

(2) Do this task: Scavenge Oil Inlet Screens Removal, TASK 79-21-04-000-801-H01.

H. Engine Oil System Inspection

SUBTASK 79-00-00-210-010-H00

NOTE: Use GE NDT Manual (GEK 112158) Part 9. It contains the debris Material Chemical Composition and source (i.e. Engine Sump Areas from where the MCD debris is generated). This can be used to find the source of debris material based on lab analysis results.

NOTE: USE GE90 NDT Manual (GEK 112158) Part 10. It contains MCD debris photos and debris material general characteristics, including appearance. This can be used to visually identify the debris material.

NOTE: Bearing material is classified as M50 and M50 Nil. The Chemical composition of M50 and M50 Nil can be found in GE90 NDT Manual (GEK 112158) Part 9.

NOTE: A small amount of fuzz is usually found on the magnet. Fuzz is very small and very fine debris less than the size of lockwire (0.030 X 0.030 X 0.002 inch).

(1) Visually examine the magnetic plugs of the lube and scavenge pump for debris with a 10x magnifying lens, STD-562 as follows:

(a) If the debris material is only fuzz on the magnetic plugs, continue the engine in service.

(b) If you see debris other than fuzz or larger than the typical fuzz on the magnetic plug, do these steps:

1) Carefully remove the debris from the magnetic plugs and screens of the lube and scavenge pump with a cotton wiper, G00034.

2) Keep and do a visual inspection of the debris for identification of the debris material. Refer to Subtask 79-00-00-210-011-H00. Refer to the GE90 NDT Manual (GEK 112158 part 10) for identification of the debris material.

3) If the debris cannot be visually identified, send all debris to the lab for material identification. Refer to GE90 NDT Manual (GEK 112158) part 9 to find the source of debris material based on lab analysis results.

4) If you find magnetic debris on the AGB magnetic plug, examine the starter magnetic plug for contamination (TASK 80-11-01-200-801-H01).

(2) Clean the magnetic plugs with a clean cotton wiper, G00034.

(a) Do this task: Scavenge Oil Inlet Screens Installation, TASK 79-21-04-400-801-H01.

CAUTION

MAKE SURE THAT THE OIL IS DRAINED FROM THE TANK AND THE OIL TUBES THAT ARE ATTACHED TO THE FAN STATOR MODULE. THIS WILL AVOID TRANSFER OF OIL CONTAMINATION FROM THE REMOVED ENGINE TO THE SERVICEABLE ENGINE.

(b) If the engine is removed because of DMS debris or MCD particle findings, do this task: Flush the Oil Tank, TASK 12-22-01-610-806-002.

NOTE: Do this procedure if the same fan stator module is used on another serviceable engine.

I. Identification of the Debris Material

SUBTASK 79-00-00-210-011-H00

NOTE: USE GE90 NDT Manual (GEK 112158) Part 9. It contains the debris Material Chemical Composition and source i.e. Engine Sump Areas from where the MCD debris is generated. This can be used to find the source of debris material based on lab analysis results.

NOTE: USE GE90 NDT Manual (GEK 112158) Part 10. It contains MCD debris photos and debris material general characteristics, including appearance. This can be used to visually identify the debris material.

(1) Visually examine the debris with a 10x magnifying lens, STD-562.

(a) If the following debris material is identified as per GE90 NDT Manual (GEK 112158) Part 9 or Part 10 or lab analysis results, return the engine to service. These are general findings.

1) Teflon/ Seal abradable

NOTE: It is abradable seal material from the A-sump.

2) Nickel Graphite (Ni-Gr)

NOTE: The Chemical composition of nickel Graphite is predominantly Nickel over 90 percent Ni.

NOTE: NOTE: It is housing seal abradable material.

3) Oil Scoop Debris - AISI 4340

NOTE: Oil scoop erosion is from the B sump.

4) Gearshaft material - AISI 9310.

NOTE: All gearshafts from IGB, TGB and AGB are AISI 9310.

5) Small circular pieces.

NOTE: The source is shot peen pellets.

6) Shiny curls of metal.

NOTE: A machine curls is permitted.

(b) If the debris material looks like black chunks, do these steps:

1) Monitor oil consumption for next 10 flight cycles. If oil consumption is in limits, continue in service.

(c) If the debris material looks like white plastic pieces and or shavings, do these steps:

NOTE: The source of the material is the No. 1 or 2 bearing stationary seal.

1) Monitor oil consumption for next 10 flight cycles. Do an inspection of the Lube and Scavenge pump magnetic plug between 5 and 10 flight cycles.

a) If oil consumption is in limits and you do not find more debris material during magnetic plugs inspection, return the engine to the normal magnetic plug inspection interval and continue in service.

(d) If the debris material looks like slivers on the magnetic plug, do these steps:

1) Carefully remove the slivers from the magnetic tip of the plug with a cotton wiper, G00034.

2) Keep and do visual inspection of the debris for identification of the debris material. Refer to GE90 NDT Manual (GEK 112158) part 10 for identification of the debris material.

3) If the debris cannot be visually identified, send all debris to the lab for material identification. Refer to GE90 NDT Manual (GEK 112158) part 9 to find the source of debris material based on lab analysis results.

4) Monitor oil consumption for next 10 flight cycles. Do an inspection of the Lube and Scavenge pump magnetic plug between 5 and 10 flight cycles.

a) If oil consumption is in limits and you do not find more debris material during magnetic plugs inspection, return the engine to the normal magnetic plug inspection interval and continue in service.

(e) If the debris material looks like small shiny flakes, do these steps:

NOTE: Bearing material is classified as M50 and M50 Nil and it has appearance of shiny flakes.

1) Carefully remove the small shiny flakes from the magnetic tip of the plug a clean cotton wiper, G00034.

2) Keep and do a visual inspection of the debris for identification of the debris material. Refer to GE90 NDT Manual (GEK 112158) part 10 for identification of the debris material.

NOTE: For 5 pieces or less of B or C sump debris which looks like bearing material, refer to step (e) (6).

a) If the debris looks like bearing material (i.e. M50 or M50 Nil), replace the engine (TASK 71-00-02-000-811-H00 and TASK 71-00-02-400-811-H00).

<1> If the debris is from the A-sump magnetic plug, you can continue in service of the engine for two flight cycles from initial debris findings.

3) If the debris cannot be visually identified send all debris to the lab for material identification.

NOTE: Quick debris material analysis is important to prevent operational events that include Inflight Shutdowns, Diversions and other operational events and AOG situations.

NOTE: The Chemical composition of M50 & M50 Nil can be found in GE90 NDT Manual (GEK 112158) Part 9.

NOTE: For 5 pieces or less of B or C sump debris which looks like bearing material, refer to step (e) (6).

a) If Lab result indicates bearing material M50 or M50Nil, replace the engine (TASK 71-00-02-000-811-H00 and TASK 71-00-02-400-811-H00).

<1> If the debris is from the A-sump magnetic plug, you can continue in service of the engine for two flight cycles from the initial debris findings.

4) Do this task: Part Power leak check (TASK 71-00-00-700-805-H01).

5) After part power leak check, do an inspection of the Lube and Scavenge pump magnetic plug.

a) If you find more debris, examine it with a 10x magnifying lens, STD-562.

NOTE: For 5 pieces or less of B or C sump debris which looks like bearing material, refer to step (e) (6).

<1> If the debris looks like bearing material (i.e. M50 or M50 Nil), replace the engine (TASK 71-00-02-000-811-H00 and TASK 71-00-02-400-811-H00).

<2> If the debris does not looks like bearing material (i.e. M50 or M50 Nil), do an inspection of the Lube and Scavenge pump magnetic plug again in or less than five flights cycles.

<a> If you do not find more debris during magnetic plugs inspection, return the engine to the normal magnetic plug inspection interval and continue in service.

<b> If the debris looks like bearing material (i.e. M50 or M50 Nil), replace the engine (TASK 71-00-02-000-811-H00 and TASK 71-00-02-400-811-H00).

b) If you do not find more debris, do an inspection of the Lube and Scavenge pump magnetic plug again for bearing material in or less than five flights cycles.

NOTE: For 5 pieces or less of B or C sump debris which looks like bearing material, refer to step (e) (6).

<1> If the debris looks like bearing material (i.e. M50 or M50 Nil), replace the engine (TASK 71-00-02-000-811-H00 and TASK 71-00-02-400-811-H00).

<2> If you do not find more debris during magnetic plugs inspection,

<a> Do this task: Engine Oil System (DMS) (Scheduled Maintenance Task) Inspection, TASK 79-00-00-200-805-H01 within 5 flight cycles.

<b> If you do not find more debris on the magnetic plug, return the engine to the normal magnetic plug inspection interval and continue in service.

6) For 5 or less pieces of B or C sump debris, which look like bearing material, do the steps that follow:

a) Send the photographs of the debris and the lab report as soon as it is available to GE fleet support and request specific recommendations.

b) Do the power leak check (TASK 71-00-00-700-805-H01), an inspection of the DMS sensor (TASK 79-00-00-200-804-H01) and an inspection of the lube pump magnetic plugs (TASK 79-00-00-200-805-H01).

<1> If you do not find more debris, do an inspection of the Lube pump magnetic plug again in or less than 5 flights cycles and do the follow up with GE Fleet Support for recommendations.

<2> If you find more debris, do not continue in service of the engine. Complete the debris lab analysis and do the follow up with GE Fleet Support for recommendations.

<a> If the lab report confirms it is M50 or M50 Nil, then replace the engine (TASK 71-00-02-000-811-H00 and TASK 71-00-02-400-811-H00).

7) While the debris is being laboratory analyzed, monitor the engine carefully every flight.

NOTE: Check for increases in DMS in each flight and cumulative chip count on the remote diagnostic. Monitor the engine for increase in delta oil pressure and oil consumption on the remote diagnostic. All increases in chip counts, delta oil pressure and oil consumption must be investigated immediately.

a) After you get the analysis from the laboratory, then do the applicable corrective action for the type of material that you identified. Refer to Subtask 79-00-00-210-011-H00. Refer to GE90 NDT Manual (GEK 112158) part 9 to find the source of debris material based on lab analysis results.

J. Put the Airplane Back to its Usual Condition

SUBTASK 79-00-00-410-003-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

——— END OF TASK ———

TASK 79-00-00-200-818-H00

7. Engine Oil System (Wear Metal Contamination) Inspection

A. General

(1) This task contains the steps necessary to find the quantity and type of unwanted material (wear metal) that is in the engine oil.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Prepare the Engine for Oil Sample Analysis

SUBTASK 79-00-00-210-008-H01

(1) Open the engine oil tank filler cap, look at the dipstick and find the level of the oil on the dipstick (TASK 12-13-01-130-803-002).

(a) Make a note of the level of the oil on the dipstick, but do not add oil until after you take the oil sample.

NOTE: If you add engine oil at this time the oil sample will not show the correct concentration of possible unwanted material(s).

E. Take an oil sample from the oil tank:

SUBTASK 79-00-00-480-001-H01

(1) Get an oil sample kit and do these steps to take an oil sample (preferred method) (Figure 609).

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

WARNING DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU.

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

(a) Push the siphon tube down inside the oil tank until the tube touches the bottom of the oil strainer.

NOTE: Do not let the siphon tube stay against the bottom of the oil strainer. The siphon tube can become full with unwanted material that is on the bottom of the strainer.

(b) Move the siphon tube upward about a 1/2 inch from the bottom of the strainer.

(c) Use a siphon procedure to remove a sample of the oil from the tank.

(d) You can use a plastic bottle with a siphon tube.

NOTE: The oil sample kits come with a plastic bottle attached to the siphon tube or just a siphon tube without a plastic bottle.

WARNING DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU. DO NOT LET OIL STAY ON YOUR SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE OIL THROUGH YOUR SKIN.

1) Slowly move the air from the plastic bottle with your hand.

2) Slowly release the pressure on the plastic bottle with your hand to move the oil up inside the siphon tube.

3) Remove the plastic bottle and the siphon tube from the oil tank.

4) Put the end of the siphon tube in the oil sample bottle.

5) Slowly move the plastic bottle until all the oil in the tube is inside the oil sample bottle.

6) Put a cap on the oil sample bottle and tighten the cap to seal the bottle.

7) Discard the plastic bottle and the siphon tube after each sample that you take.

NOTE: It is important that you use a new plastic bottle and siphon tube with each oil sample. This will make sure that the oil sample shows the correct condition of the oil.

WARNING

DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU.

WARNING

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

(e) If you use a siphon tube without an attached plastic bottle (alternate method), do these steps:

1) Put your thumb over the end of the siphon tube.

2) Remove the siphon tube from the oil tank.

3) Put the end of the siphon tube in the oil sample bottle.

4) Slowly remove your thumb from the end of the siphon tube until all the oil in the tube is inside the sample bottle.

5) Put a cap on the bottle and tighten the cap to seal the bottle.

6) Discard the siphon tube after each sample that you take.

NOTE: It is important that you use a new siphon tube with each oil sample. This makes sure that the oil sample shows the correct condition of the oil.

SUBTASK 79-00-00-610-001-H01

(2) Write the quantity of oil that you add for an oil consumption check on a oil consumption sheet.

(a) If it is necessary, replenish the engine oil (TASK 12-13-01-130-803-002).

SUBTASK 79-00-00-970-001-H01

(3) Make sure you write this data on the label of the oil sample bottle:

NOTE: Make sure you keep a copy of the label information before you send the sample to the laboratory.

(a) The airplane registration number

(b) The engine S/N

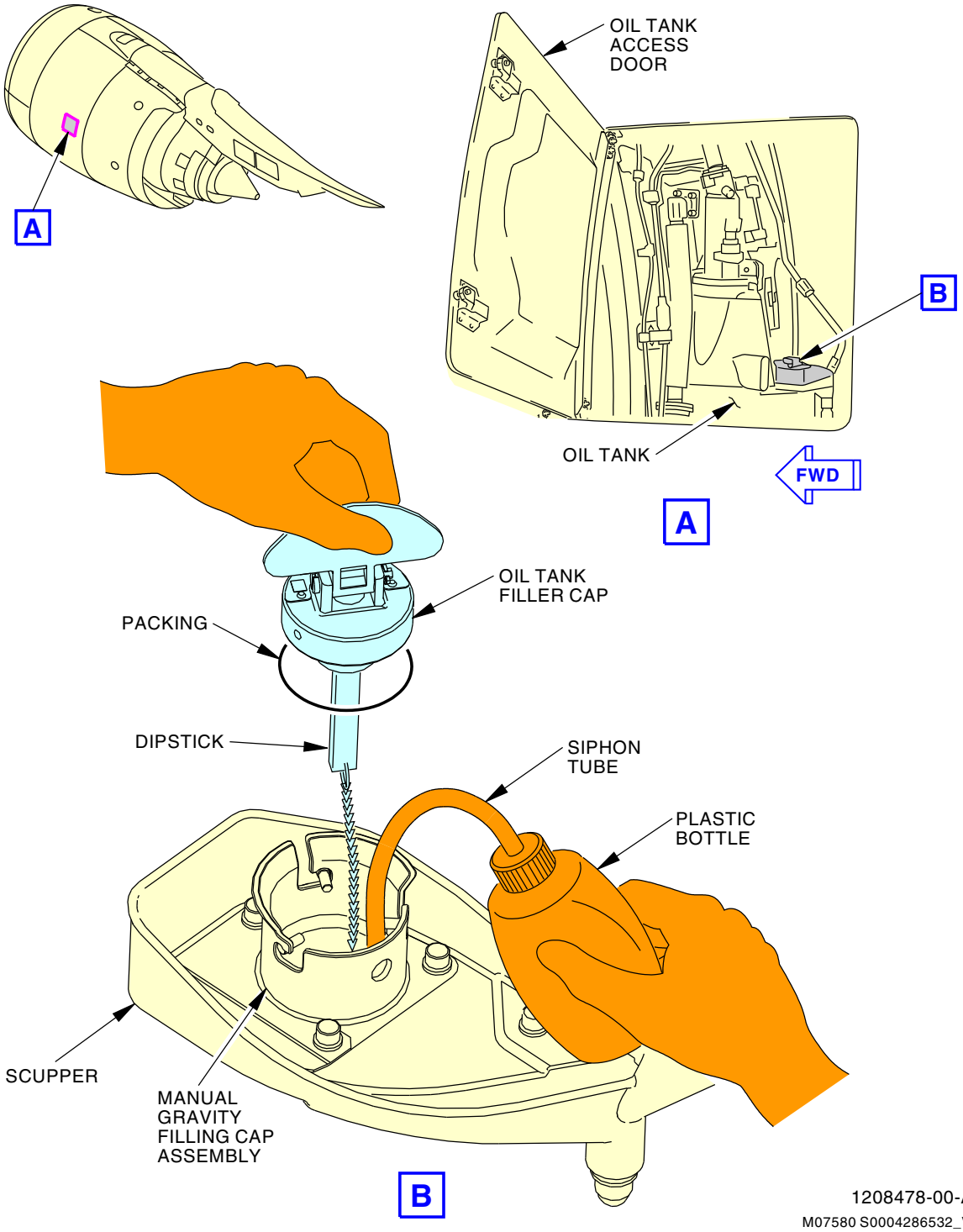
(c) The engine position

(d) The date of the sample

(e) The (type and quantity) of oil that you added.

NOTE: Send the sample to the laboratory as soon as possible to make sure you get good results.

——— END OF TASK ———



Oil Sample
Figure 609/79-00-00-990-802-H01

TASK 79-00-00-200-807-H01

8. Engine Oil System (Fluids and Solids Contamination) Inspection

A. General

(1) This task contains the steps necessary to find fluid (fuel or Skydrol) and solids contamination in the engine oil system.

B. References

Reference	Title
12-22-01-170-803-002	Flush the Engine Oil System (P/B 301)
12-22-01-610-806-002	Flush the Oil Tank (P/B 301)
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-00-00-700-802-H01	Test No. 2 - Dry Motor leak Check (P/B 501)
71-00-00-700-805-H01	Test No. 6 - Part-Power Leak Check (P/B 501)
71-00-00-800-836-H00	Dry Motor (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
73-00-00-170-801-H00	Fuel Supply System (with Hydraulic Fluid) Contamination Cleaning (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)
79-21-01-000-803-H00	Main Fuel/Oil Heat Exchanger Removal (P/B 401)
79-21-01-400-801-H01	Main Fuel/Oil Heat Exchanger Installation (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-211	Coupling - Valve Part #: OMP2505-3 Supplier: 33068
STD-203	Container - Oil Resistant, 1 U.S.-Gal (3.8 l)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

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

(Continued)

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

F. Prepare for the Oil Contamination Inspection

SUBTASK 79-00-00-010-006-H01

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

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

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

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

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

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

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

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

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

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

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

G. Procedure

SUBTASK 79-00-00-200-001-H01

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

(WARNING PRECEDES)

WARNING

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

(1) Open the engine oil tank filler cap (Figure 610).

NOTE: Do not let oil get on the engine or other components. Immediately clean the oil when it falls on the engine or other components.

(a) Put the oil tank filler cap locking lever in the unlocked position.

(b) Turn the locking lever on the filler cap to the OPEN position.

(c) Pull the filler cap straight up until the dipstick is above the edge of the manual gravity filler cap assembly.

NOTE: The dipstick is attached to the bottom of the oil tank filler cap and has a lanyard that is attached to the inside of the manual gravity filler cap assembly.

(d) Put a clean 1 U.S.-gal (3.81 l) oil resistant container, STD-203 below the fan case.

(e) Remove the cap [4] from the drain valve (self closing) [3] at the oil tank supply tube [2].

(f) Install the valve coupling, COM-211 to the drain valve (self closing) [3] at the oil tank supply tube [2].

(g) Drain a small quantity of engine oil into a clean 1 U.S.-gal (3.81 l) oil resistant container, STD-203 for analysis.

(h) Remove the valve coupling, COM-211 from the drain valve (self closing) [3] at the oil tank supply tube [2].

(i) Install the cap [4] to the drain valve (self closing) [3] at the oil tank supply tube [2].

(j) Do an analysis of the engine oil for fuel contamination, hydraulic fluid (Skydrol) contamination and solids contamination.

Table 601/79-00-00-993-802-H01 LEGACY TABLE-T-G-79-00-00-6-TABLE1

Property	Test Method	Limits
Viscosity at 100 degrees F (38 degrees C)	ASTM D445	35 percent increase from actual measured new oil viscosity Note: Lower viscosity shows fuel in oil contamination. A 5 percent fuel contamination in oil will decrease oil viscosity by approximately 20 percent. The higher the fuel contamination, the lower the viscosity.
Acid Number	ASTM D644 or D974	2.0 mg max of KOH in a gram of oil
Foam	ASTM D892	300 ml

Table 601/79-00-00-993-802-H01 LEGACY TABLE-T-G-79-00-00-6-TABLE1 (Continued)

Property	Test Method	Limits
Flash Point (Test for fuel)	ASTM D92-57 or SETA Flash	340 degrees F (171 degrees C) and higher Note: A 5 percent fuel contamination in oil will decrease flash point by approximately 30 degrees F (17 degrees C). The higher the fuel contamination, the lower the flash point.
Solids	FED-STD-791 Method 3010	75 mg in a liter

(k) Alternative Procedure. If you think there is fuel contamination, do a check for fuel in the oil. Refer to AMM subtask 12-13-01-200-003-002.

1) If you think there is fuel in the oil, do the steps that follow:

a) Compare the engine oil sample to a 100 percent oil reference sample, a 75 percent fuel/25 percent oil reference sample, a 50 percent fuel/50 percent oil sample and a 100 percent fuel sample.

b) Visually compare the oil sample and reference samples to find the approximate amount of fuel contamination that is in the oil sample.

c) Keep the oil sample and make sure the samples you visually compared are correct by laboratory analysis in or less than 10 flight cycles.

d) If you are not able to do lab testing for fuel in oil contamination, remove the engine within 10 flight cycles if the ACMF ENG EXCEEDANCE Report OILSYS T reason code occurred.

SUBTASK 79-00-00-200-002-H01

(2) If you think there is or you find hydraulic fluid (Skydrol) contamination, do the steps that follow:

(a) Do this task: Fuel Supply System (with Hydraulic Fluid) Contamination Cleaning, TASK 73-00-00-170-801-H00.

(b) Do this task: Flush the Oil Tank, TASK 12-22-01-610-806-002.

(c) After you do the engine idle power leak check in the task above, get a sample of engine oil again and make an analysis of the sample.

(d) If the sample does not show contamination that is more than the limits, this task is complete.

(e) If the sample shows contamination that is more than the limits, do steps (b) thru (d) again until the sample does not show contamination that is more than the limits.

SUBTASK 79-00-00-200-003-H01

(3) If you think there is or you find contamination with solids, do the steps that follow:

(a) Do this task: Flush the Engine Oil System, TASK 12-22-01-170-803-002.

(b) Get a sample of engine oil again and make an analysis of the sample.

(c) If you find a quantity of solids in the engine oil after the oil flush that is more than 40 mg/liter, then do these steps.

1) Do this task: Flush the Engine Oil System, TASK 12-22-01-170-803-002.

2) Get a sample of engine oil again and make an analysis of the sample.

3) If the sample shows contamination that is more than the limits, do the engine oil flushing task again until the engine oil is in limits.

SUBTASK 79-00-00-900-001-H01

(4) If you think there is fuel in the engine oil, do the steps that follow:.

(a) Replace the Main Fuel/Oil Heat Exchanger. These are the tasks: Main Fuel/Oil Heat Exchanger Removal, TASK 79-21-01-000-803-H00 and Main Fuel/Oil Heat Exchanger Installation, TASK 79-21-01-400-801-H01.

(b) Do this task: Flush the Engine Oil System, TASK 12-22-01-170-803-002.

(c) Visually examine the aft area of the fan blades and first-stage vanes of the booster at the 6:00 o'clock position. If wetting is seen, remove all wetting with wipes.

(d) If wetting was found, do a dry motor of the engine for 3 minutes (TASK 71-00-00-800-836-H00).

(e) If wetting was found, wait 15 minutes.

(f) If wetting was found, do steps (c) through (e) again until you do not see wetting.

(g) Do a dry motor leak check (TASK 71-00-00-700-802-H01).

(h) Do a part power leak check (TASK 71-00-00-700-805-H01).

(i) Do a physical inspection of the DMS and the lube unit scavenge screens (TASK 79-00-00-200-804-H01) and (TASK 79-00-00-200-805-H01).

(j) Do a physical inspection of the engine DMS sensor every day for 10 days (TASK 79-00-00-200-804-H01).

(k) Do an inspection of the lube unit scavenge screens after 10 days (TASK 79-00-00-200-805-H01).

(l) For fuel in oil contamination levels above 75 percent, remove the engine in or less than 10 flight cycles.

(m) If you are not able to do lab testing for fuel in oil contamination, remove the engine in or less than 10 flight cycles if the ACMF ENG EXCEEDANCE Report OILSYS T reason code occurred.

H. Put the airplane back to its usual condition

SUBTASK 79-00-00-410-004-H01

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

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

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

1) Close these access panels:

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

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

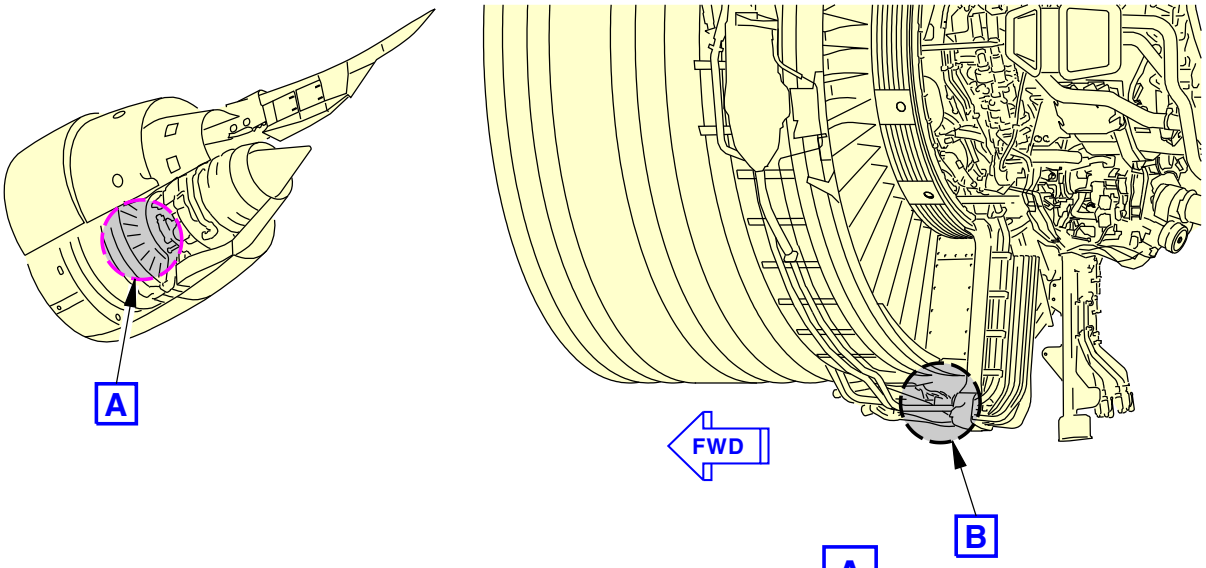
1) Close these access panels:

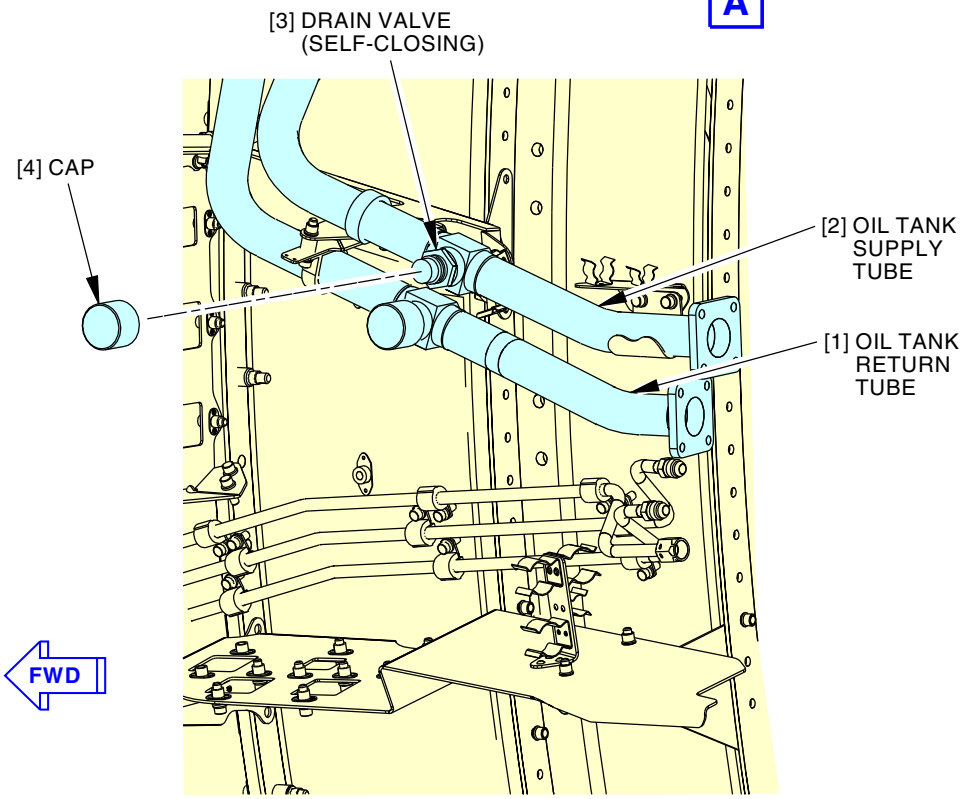
Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

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

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

——— END OF TASK ———





NOTE:

DO NOT REMOVE DRAIN VALVE.

B

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M07581 S0004286533_V2

Engine Oil Inspection for Contamination
Figure 610/79-00-00-990-803-H01

TASK 79-00-00-700-801-H01

9. Debris Monitoring System (DMS) (Scheduled Maintenance Task) Inspection

A. General

(1) This procedure gives instructions to find and correct the debris monitoring system (DMS) maintenance messages, related to debris.

(2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808..

B. References

Reference	Title
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Debris Monitoring System Inspection

SUBTASK 79-00-00-740-001-H01

(1) Set the EEC MAINT L or R ENG POWER switch on the aft overhead maintenance panel, P61, to the TEST position.

(a) Wait 30 seconds before you start the test.

SUBTASK 79-00-00-740-002-H01

(2) Use a maintenance access terminal (MAT) to find the DMS debris maintenance messages.

(a) Make these selections on the MAT:

1) ONBOARD MAINTENANCE

2) EXTENDED MAINTENANCE

3) FAULT HISTORY

4) 71-80 Left or Right Engine

(b) Look for one or more of these maintenance messages in the last 3 flight legs (leg 0, leg -1, or leg -2).

Table 602/79-00-00-993-801-H01 LEGACY TABLE-T-G-79-00-00-6-TABLE2

Maintenance Messages	
79-14561	Debris Monitoring System (L Eng) has detected debris.
79-14562	Debris Monitoring System (R eng) has detected debris.
79-15231	Debris Monitoring System (L Eng) has detected debris.
79-15232	Debris Monitoring System (R Eng) has detected debris.

1) If one or more of the above fault messages is present, do the corrective action in the FIM.

(c) Select EXIT MAINTENANCE from the extended maintenance menu.

SUBTASK 79-00-00-740-003-H01

(3) Set the EEC MAINT L or R ENG POWER switch on the aft overhead maintenance panel, P61, to the NORM position.

——— END OF TASK ———

OIL - DDG MAINTENANCE PROCEDURES

1. General

A. This procedure has the maintenance tasks for the Master Minimum Equipment List (MMEL) maintenance requirements as shown in the Dispatch Deviations Guide (DDG). These tasks prepare the airplane for flight with certain systems/components inoperative.

B. This procedure also has the tasks that put the airplane back to its usual condition.

C. These are the tasks for the components in the oil system:

(1) MMEL 79-31-1 (DDG) Preparation - Engine Oil Quantity Indicating Systems Inoperative

(2) MMEL 79-31-1 (DDG) Restoration - Engine Oil Quantity Indicating Systems Inoperative

TASK 79-00-00-040-801-H01

2. MMEL 79-31-1 (DDG) Preparation - Engine Oil Quantity Indicating Systems Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Engine Oil Quantity Indicating Systems Inoperative.

(2) EICAS Status Messages

(a) OIL QTY SENSOR L

(b) OIL QTY SENSOR R

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
71-00-00-800-802-H01	Engine Operation Limits (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Procedure

SUBTASK 79-00-00-220-002-H01

(1) Do a check of the engine oil quantity (TASK 12-13-01-130-803-002).

(a) Make sure that the oil consumption is in the limits (TASK 71-00-00-800-802-H01).

——— END OF TASK ———

TASK 79-00-00-440-801-H01

3. MMEL 79-31-1 (DDG) Restoration - Engine Oil Quantity Indicating Systems Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Engine Oil Quantity Indicating Systems Inoperative.

B. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

C. Procedure

SUBTASK 79-00-00-740-004-H01

(1) Go to the MAT and find the EICAS status message, OIL QTY SENSOR L or R (FIM EICAS MESSAGE LIST).

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

SUBTASK 79-00-00-810-003-H01

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

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

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

SUBTASK 79-00-00-810-004-H01

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

——— END OF TASK ———

OIL STORAGE SYSTEM - INSPECTION/CHECK

1. General

A. This procedure has one task:

(1) An examination of the oil storage system.

TASK 79-11-00-200-801-H01

2. Oil Storage System Inspection

(Figure 601)

A. General

(1) This task provides the instructions on how to examine the oil storage system.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
79-11-01-000-801-H01	Oil Tank Removal (P/B 401)
79-11-01-400-801-H01	Oil Tank Installation (P/B 401)
79-11-03-000-801-H01	Manual Gravity Filling Cap Assembly Removal (P/B 401)
79-11-03-400-801-H01	Manual Gravity Filling Cap Assembly Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-10670	Pliers

D. Consumable Materials

Reference	Description	Specification
B00074	Solvent - Degreasing	MIL-PRF-680 (Supersedes P-D-680)
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

G. Prepare for the Inspection

SUBTASK 79-11-00-010-001-H01

CAUTION

RETRACT THE LEADING EDGE SLATS AND DO THE DEACTIVATION PROCEDURE BEFORE YOU OPEN THE FAN COWL PANELS. IF THE LEADING EDGE SLATS ARE NOT RETRACTED, THE FAN COWL PANELS WILL HIT THEM AND CAUSE DAMAGE.

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

SUBTASK 79-11-00-040-001-H01

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

SUBTASK 79-11-00-010-002-H01

(3) For the left fan cowl panel on the applicable engine, do this task:

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

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

H. Oil Storage System Inspection

SUBTASK 79-11-00-210-001-H01

(1) Examine the oil tank as follows:

(a) Make sure that the mount bolts for the oil tank are not loose.

1) If the mount bolts are loose, tighten the bolts. This is the task: Oil Tank Installation, TASK 79-11-01-400-801-H01.

(b) Look for signs of oil leaks that are not from a tube connection or cap.

1) If you see signs of oil leaks, replace the oil tank. These are the tasks: Oil Tank Removal, TASK 79-11-01-000-801-H01 and Oil Tank Installation, TASK 79-11-01-400-801-H01.

(c) Look for signs of oil leakage at the oil tank.

NOTE: The stains that you may see do not mean that there is leakage. The stain is a discoloration caused by baking of oil or grease residue during engine operation. Stains are acceptable.

1) If you see oil leakage at the tank, clean the oil leakage area with a clean, cotton wiper, G00034 made moist with solvent, B00074.

2) Examine again after 30 minutes for oil leakage at the oil tank.

a) If oil leakage is present after 30 minutes, replace the oil tank. These are the tasks: Oil Tank Removal, TASK 79-11-01-000-801-H01 and Oil Tank Installation, TASK 79-11-01-400-801-H01.

SUBTASK 79-11-00-210-002-H01

(2) Examine the manual gravity filling cap assembly:

(a) Look for cracks in the mounting flanges.

1) If you see cracks, replace the manual gravity filling cap assembly (TASK 79-11-03-000-801-H01 and TASK 79-11-03-400-801-H01).

(b) Look for signs of oil leaks from around the cap.

1) If you see signs of oil leaks, replace the packing (TASK 79-11-03-400-801-H01).

(c) Make sure that the manual gravity filling cap assembly is not loose.

1) If the manual gravity filling cap assembly is loose, remove and install the assembly correctly (TASK 79-11-03-000-801-H01 and TASK 79-11-03-400-801-H01).

(d) Examine the chain for the oil tank cap assembly as follows:

1) Open the oil tank filler cap (TASK 12-13-01-130-803-002).

2) Examine the chain.

3) If the chain is broken or missing, replace it with a new chain in or less than 50 cycles as follows:

a) Get access to the oil cap assembly (TASK 12-13-01-130-803-002).

b) Remove all remaining parts of the unserviceable chain from the oil cap assembly.

NOTE: Make sure that no loose parts fall into the oil tank or into the space between the Fan Cowl Panel.

c) Install the new chain on the oil cap assembly as follows:

<1> Open the hook attachment.

<2> Engage the hook to the strainer.

<3> Use the pliers, STD-10670 to close the hook attachment on the strainer.

<4> Open the ring attachment.

<5> Attach the ring to the dipstick.

<6> Engage the chain in the ring up and turn it to secure the attachment.

4) Close the oil tank filler cap (TASK 12-13-01-130-803-002).

I. Put the Airplane Back to Its Usual Condition

SUBTASK 79-11-00-410-001-H01

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

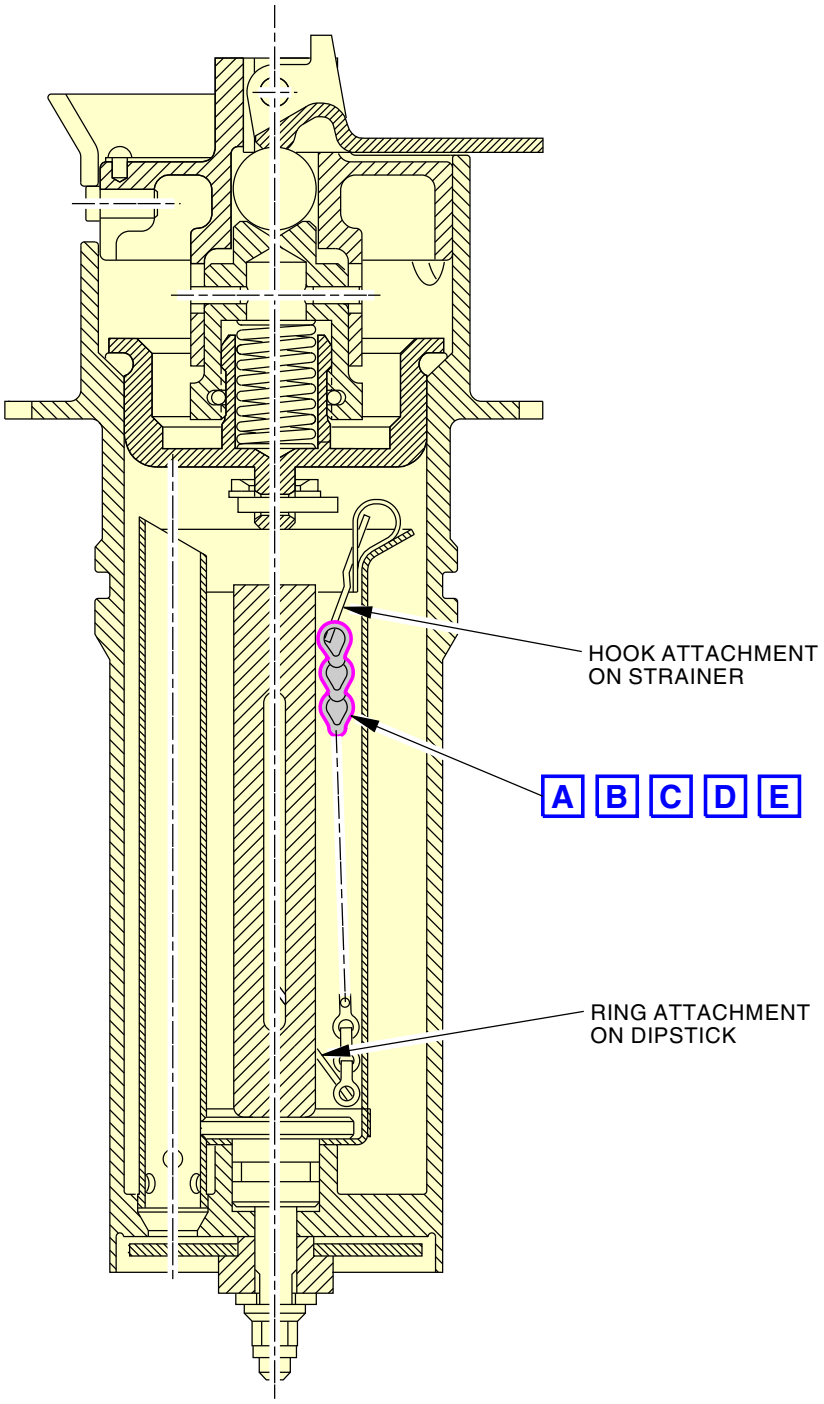
(a) Close these access panels:

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

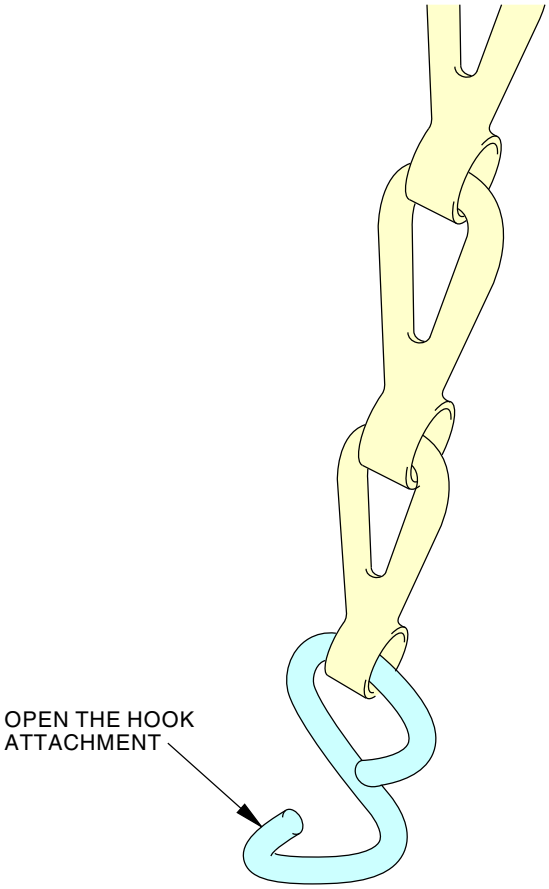
SUBTASK 79-11-00-440-001-H01

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

——— END OF TASK ———



Oil Tank Filler Cap Chain Inspection
Figure 601/79-11-00-990-801-H00 (Sheet 1 of 6)



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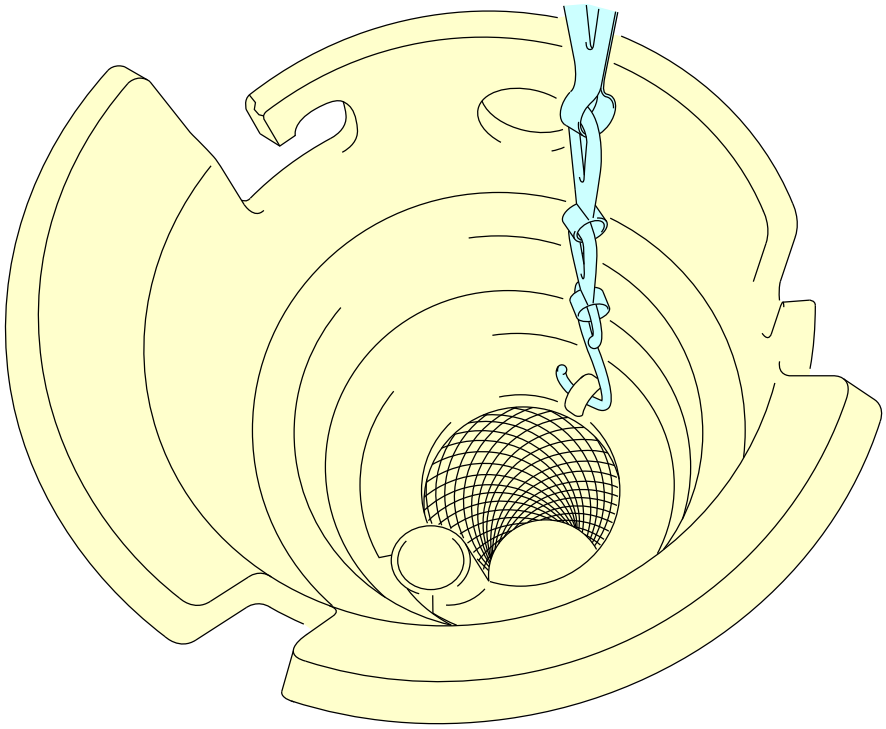
Oil Tank Filler Cap Chain Inspection
Figure 601/79-11-00-990-801-H00 (Sheet 2 of 6)



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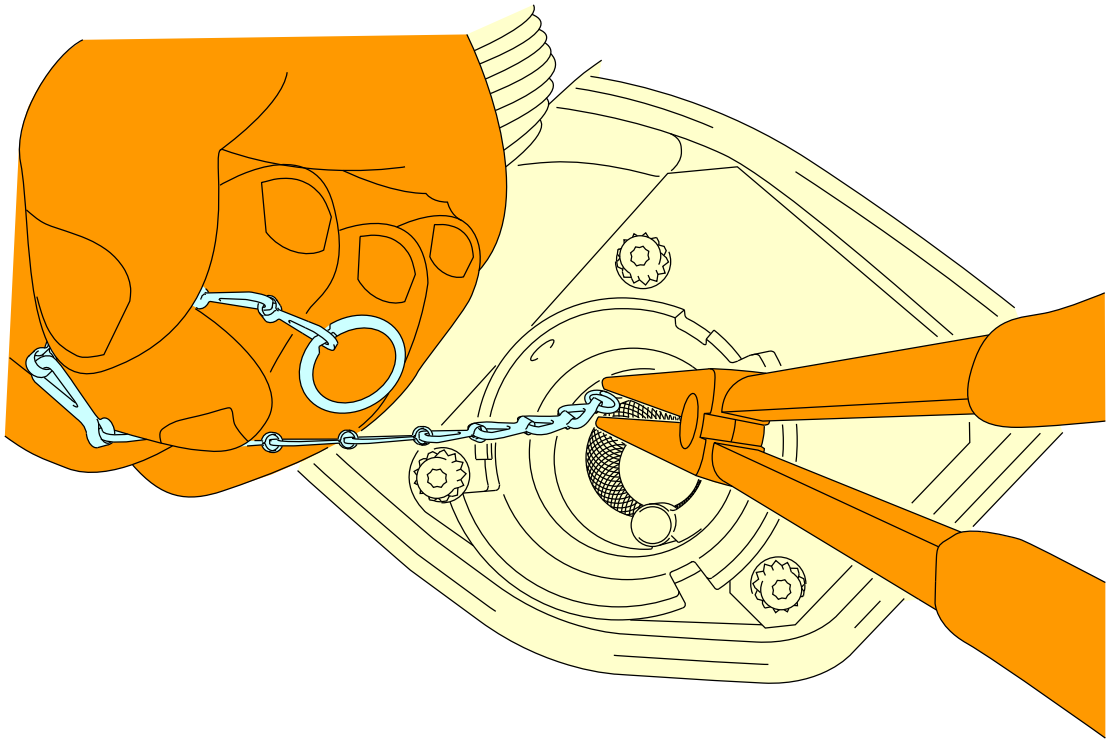
Oil Tank Filler Cap Chain Inspection
Figure 601/79-11-00-990-801-H00 (Sheet 3 of 6)



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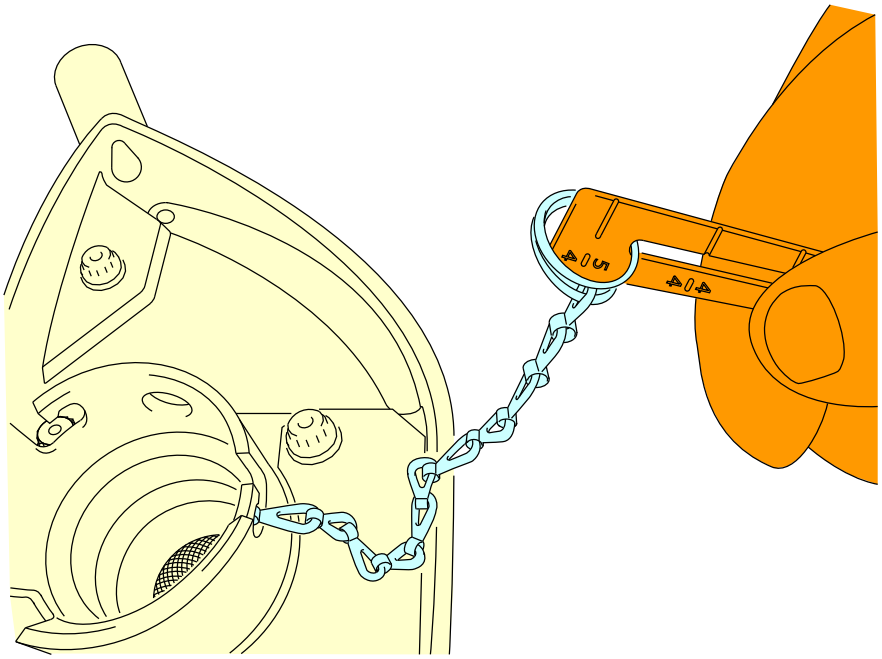
Oil Tank Filler Cap Chain Inspection
Figure 601/79-11-00-990-801-H00 (Sheet 4 of 6)



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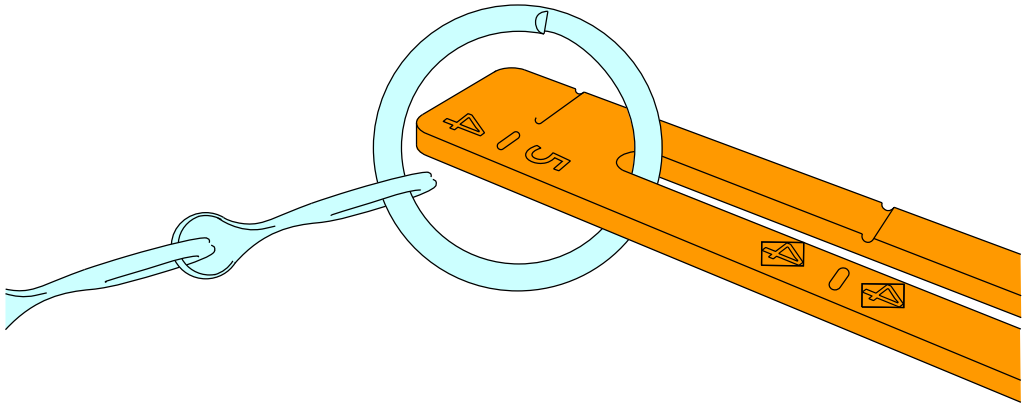
Oil Tank Filler Cap Chain Inspection
Figure 601/79-11-00-990-801-H00 (Sheet 5 of 6)



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Oil Tank Filler Cap Chain Inspection
Figure 601/79-11-00-990-801-H00 (Sheet 6 of 6)

OIL TANK - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the oil tank

(2) An installation of the oil tank.

TASK 79-11-01-000-801-H01

2. Oil Tank Removal

A. General

(1) This task is the removal procedure for the engine oil tank.

(2) You must open the left fan cowl panel to get access to the engine oil tank.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
79-11-03-000-801-H01	Manual Gravity Filling Cap Assembly Removal (P/B 401)
79-21-13-000-801-H01	Debris Monitoring System (DMS) Air/Oil Separator Removal (P/B 401)
79-31-01-000-801-H01	Oil Level Sensor Removal (P/B 401)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-211	Coupling - Valve Part #: OMP2505-3 Supplier: 33068
STD-205	Container - Oil Resistant, 5 U.S.-Gal (19 l)
STD-1194	Crane - Lift, 250 Lb (113 kg) Capacity, Lift Range 20 to 60 Inches (508-1524 Millimeters)

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

G. Prepare for the Oil Tank Removal

SUBTASK 79-11-01-010-001-H01

CAUTION

RETRACT THE LEADING EDGE SLATS AND DO THE DEACTIVATION PROCEDURE BEFORE YOU OPEN THE FAN COWL PANELS. IF THE LEADING EDGE SLATS ARE NOT RETRACTED, THE FAN COWL PANELS WILL HIT THEM AND CAUSE DAMAGE.

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

SUBTASK 79-11-01-040-001-H01

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

SUBTASK 79-11-01-010-002-H01

(3) For the left and right fan cowl panels on the applicable engine, do this task:

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

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

H. Oil Tank Removal

SUBTASK 79-11-01-680-001-H01

WARNING

DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING

DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

WARNING

DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU.

WARNING

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

CAUTION

DO NOT LET OIL GET ON THE ENGINE, OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE AREAS THAT OIL FALLS ON. OIL CAN CAUSE DAMAGE TO PAINT AND RUBBER.

(1) Drain the oil, D00552 [C02-019] from the oil tank supply tube [1] and the oil tank return tube [2] at the bottom of the fan case [12] (Figure 401).

(a) Put the 5 U.S.-gal (19 l) oil resistant container, STD-205 below the fan case [12].

(b) Open the engine oil tank filler cap [20].

1) Put the locking lever on the oil tank filler cap [20] in the not locked position.

NOTE: The locking lever will be vertical to the top of the oil tank filler cap when it is in the not locked position.

2) Turn the locking lever on the oil tank filler cap [20] to the OPEN position.

3) Pull the oil tank filler cap [20] straight up until the dipstick is above the edge of the manual gravity filling cap assembly.

NOTE: The dipstick is attached to the bottom of the oil tank filler cap and has a lanyard that is attached to the inside of the manual gravity filling cap assembly.

4) Remove the oil cap [5] from the drain valve [3] in the oil tank return tube [2].

5) Install the valve coupling, COM-211 on the drain valve [3].

6) Drain the oil, D00552 [C02-019] from the oil tank return tube [2] into the 5 U.S.-gal (19 l) oil resistant container, STD-205.

7) Remove the valve coupling, COM-211 from the drain valve [3].

8) Install the oil cap [5] to the drain valve [3] in the oil tank return tube [2].

9) Remove the oil cap [4] from the drain valve [6] in the oil tank supply tube [1].

NOTE: As you drain the oil from the oil tank supply tube, you also drain all the oil from the oil tank.

10) Install the valve coupling, COM-211 on the drain valve [6].

11) Drain the oil, D00552 [C02-019] from the oil tank supply tube [1] into the 5 U.S.-gal (19 l) oil resistant container, STD-205.

12) Remove the valve coupling, COM-211 on the drain valve [6].

13) Install the oil cap [4] to the drain valve [6] in the oil tank supply tube [1].

SUBTASK 79-11-01-020-001-H01

(2) Do this task: Debris Monitoring System (DMS) Air/Oil Separator Removal, TASK 79-21-13-000-801-H01.

SUBTASK 79-11-01-020-002-H01

(3) Do this task: Oil Level Sensor Removal, TASK 79-31-01-000-801-H01.

SUBTASK 79-11-01-020-003-H01

(4) Do this task: Manual Gravity Filling Cap Assembly Removal, TASK 79-11-03-000-801-H01.

SUBTASK 79-11-01-020-004-H01

(5) Disconnect the oil tank supply tube [1] from the oil tank [21].

(a) Remove the four bolts [32] that attach the oil tank supply tube [1] to the oil tank [21].

(b) Remove and discard the preformed packing [31].

(c) Install protective covers in the port of oil tank [21] for the oil tank supply tube [1] and on the open end of the oil tank supply tube [1].

SUBTASK 79-11-01-020-005-H01

(6) Remove the ground strap [25] from the bracket [29].

NOTE: Do not remove the bolt from the grounding strap attachment point at the oil tank.

(a) Remove the bolt [26] and nut [28] from the bracket [29].

(b) Move the ground strap [25] away from the bracket [29].

SUBTASK 79-11-01-020-006-H01

WARNING

THE OIL TANK WEIGHS APPROXIMATELY 40 POUNDS (18.14 KG) EMPTY. YOU NEED AN OVERHEAD LIFT CRANE OR TWO PEOPLE TO REMOVE THE OIL TANK. IF YOU DO NOT FOLLOW THESE INSTRUCTIONS INJURY TO PERSONS AND DAMAGE TO THE ENGINE CAN OCCUR..

(7) Remove the oil tank [21].

(a) Use 250 lb (113 kg) capacity crane, STD-1194 or two persons to support on the oil tank before you remove the attached bolt [23] and bolts [27].

(b) Remove the bolt [23] and nut [22] from the oil tank [21] at the link [24].

(c) Remove the two bolts [27] from the oil tank damper [30].

(d) Remove the oil tank [21].

SUBTASK 79-11-01-020-008-H01

(8) Do the steps that follow to remove the oil tank fire blanket [35]:

(a) Remove the safety wire which attach the metallic straps [36] to the oilets at holes 3 and 4.

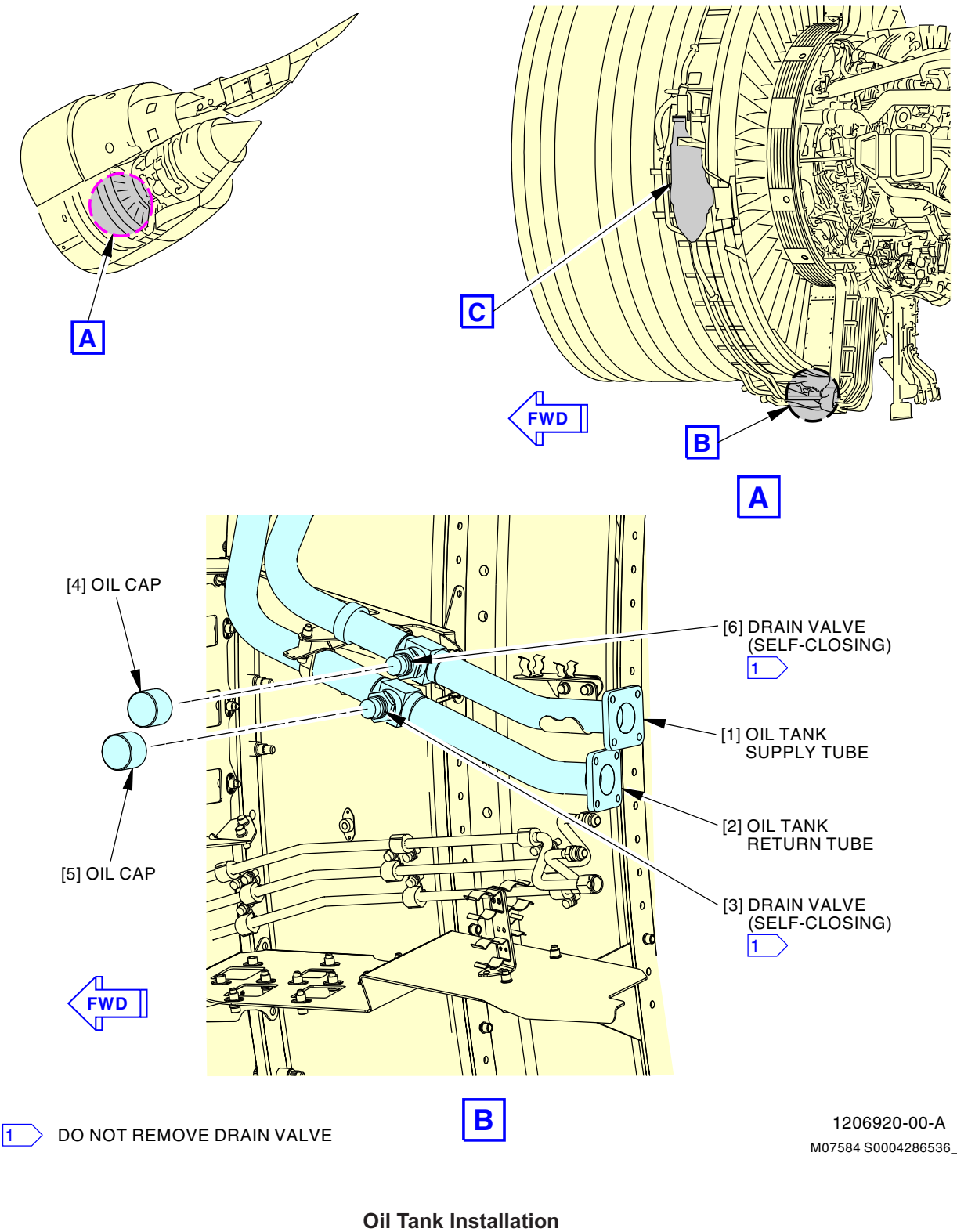
(b) Remove the safety needle from pin at holes 1 and 2.

(c) Remove the oil tank fire blanket [35].

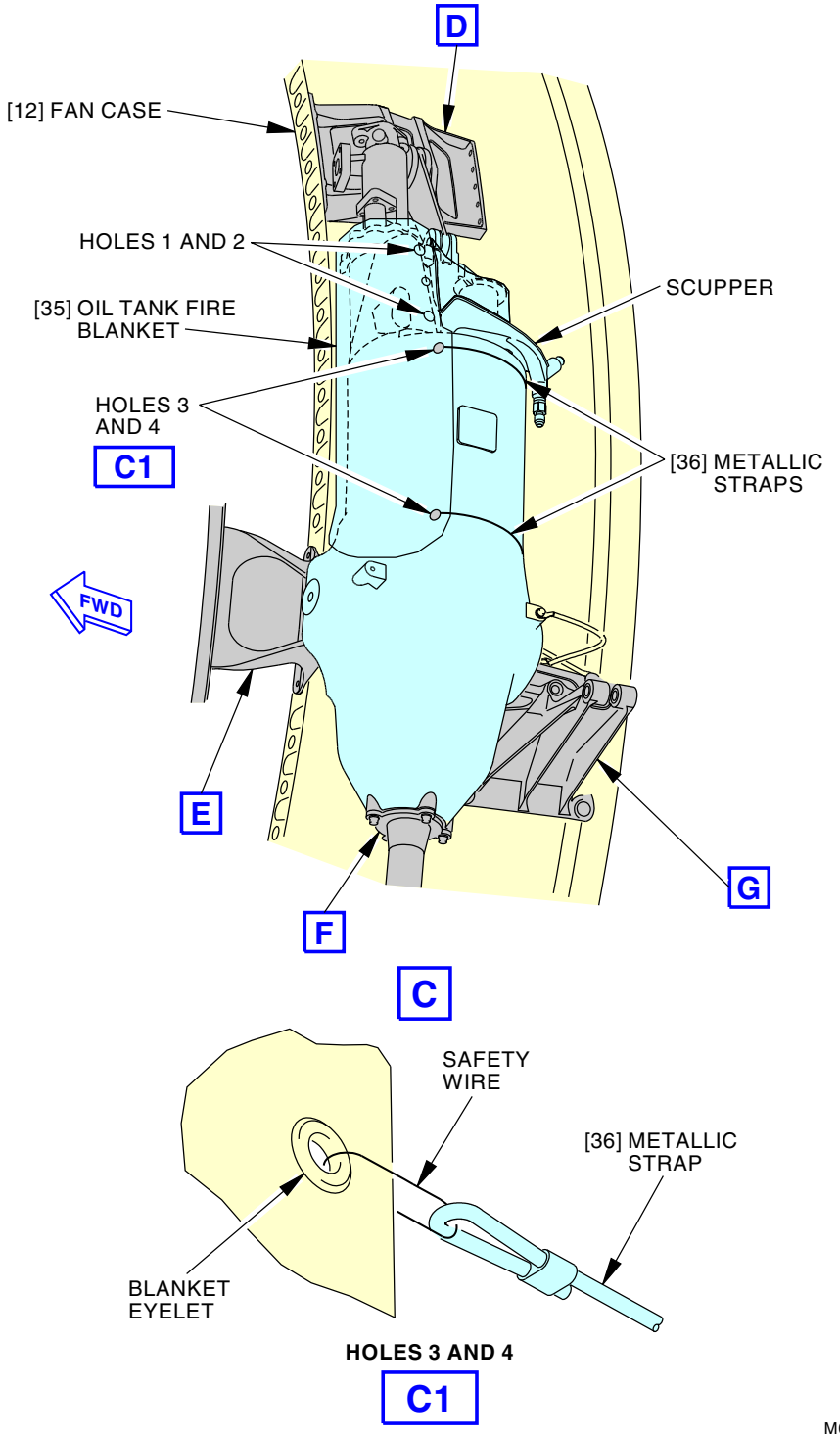
SUBTASK 79-11-01-020-007-H01

(9) Install protective covers on all tubes and openings.

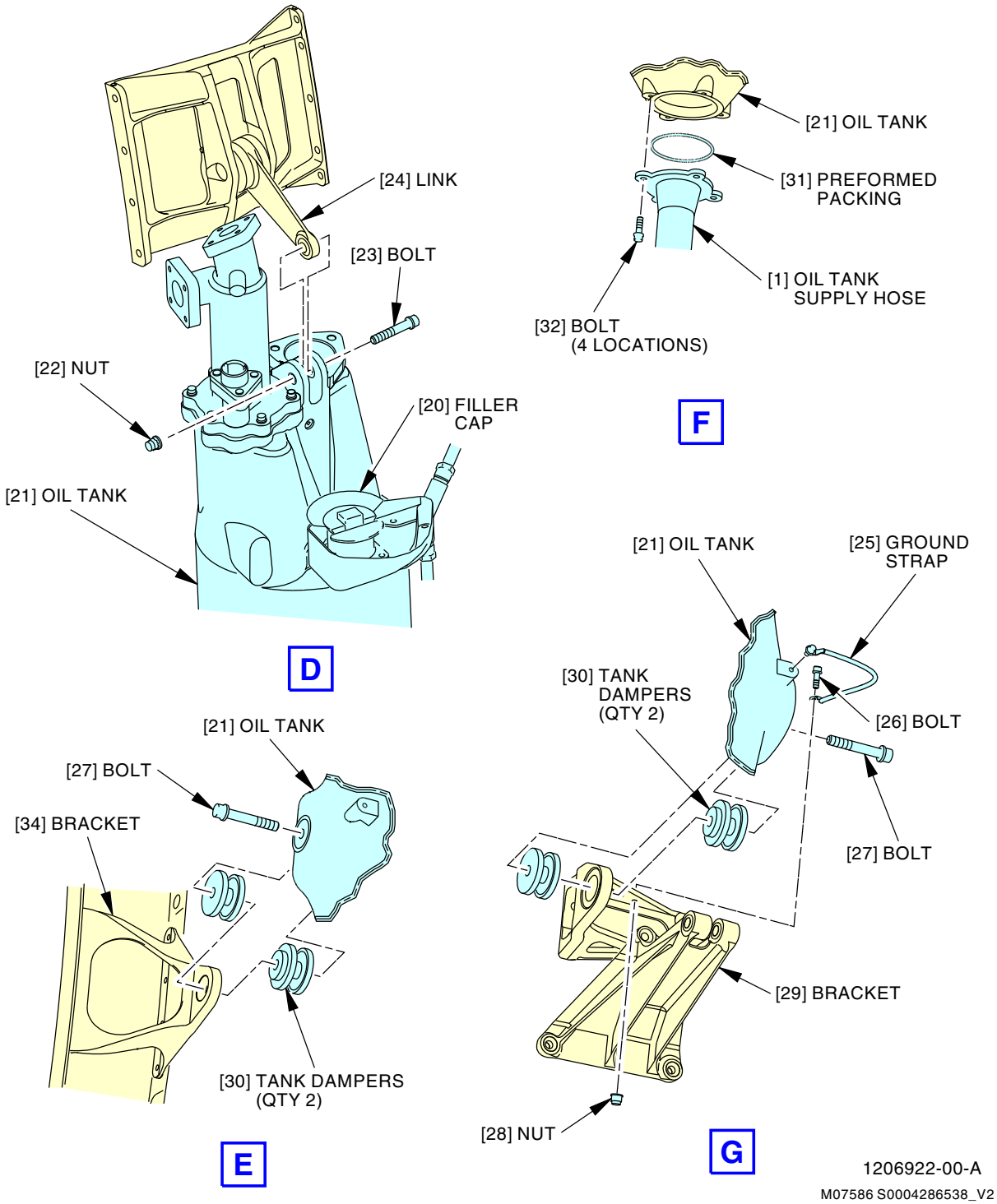
END OF TASK



Oil Tank Installation
Figure 401/79-11-01-990-801-H01 (Sheet 1 of 3)



Oil Tank Installation
Figure 401/79-11-01-990-801-H01 (Sheet 2 of 3)



Oil Tank Installation
Figure 401/79-11-01-990-801-H01 (Sheet 3 of 3)

TASK 79-11-01-400-801-H01

3. Oil Tank Installation

A. General

(1) This task is the installation procedure for the engine oil tank.

(2) You must do the tests that are listed in the power plant test reference table after you replace the engine oil tank.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
79-11-03-400-801-H01	Manual Gravity Filling Cap Assembly Installation (P/B 401)
79-21-13-400-801-H01	Debris Monitoring System (DMS) Air/Oil Separator Installation (P/B 401)
79-31-01-400-801-H01	Oil Level Sensor Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1194	Crane - Lift, 250 Lb (113 kg) Capacity, Lift Range 20 to 60 Inches (508-1524 Millimeters)

D. Consumable Materials

Reference	Description	Specification
D00504	Grease - Petrolatum	VV-P-236
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
21	Oil tank	79-11-01-03-070	ARO ALL
31	Preformed packing	79-21-51-32D-040	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

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

H. Oil Tank Installation

SUBTASK 79-11-01-420-001-H01

(1) Remove the protective covers from all tubes and openings.

SUBTASK 79-11-01-420-008-H01

(2) Do the steps that follow to install the oil tank fire blanket [35] (Figure 401):

(a) Wrap the oil tank fire blanket [35] around the oil tank and slide the oil tank fire blanket [35] behind the part of the oil tank above the scupper.

(b) Put the pins at holes 1 and 2 and attach the oil tank fire blanket [35] in the related oilets and secure with safety needles.

(c) Attach the lower part of the oil tank fire blanket [35] around the oil tank lower part with the metallic strap [36] and safety wire.

SUBTASK 79-11-01-420-002-H01

WARNING THE OIL TANK WEIGHS APPROXIMATELY 40 POUNDS (18.14 KG) EMPTY. YOU NEED AN OVERHEAD LIFT CRANE OR TWO PEOPLE TO REMOVE THE OIL TANK. IF YOU DO NOT FOLLOW THESE INSTRUCTIONS INJURY TO PERSONS AND DAMAGE TO THE ENGINE CAN OCCUR..

(3) Install the oil tank [21] to the fan case [12].

(a) Use 250 lb (113 kg) capacity crane, STD-1194 or two persons to lift the oil tank into the position.

(b) Move the link [24] upward so it does not catch on the oil tank [21].

(c) Put Acheson GP460 compound, D50043 [C02-058] on the threads and friction surfaces of the bolts [27], bolt [23] and nut [22].

(d) Compress the four oil tank dampers [30] at the bracket [29] and bracket [34].

(e) Put grease, D00504 on the faces of the four oil tank dampers [30].

(f) Put the oil tank [21] in its position over the four oil tank dampers [30] at the bracket [29] and bracket [34].

(g) Put the link [24] inside the upper attachment point on the oil tank [21].

(h) Install the bolt [23] and nut [22] with the bolt head forward to the oil tank [21] and link [24].

(i) Push the oil tank [21] down over the four oil tank dampers [30] at the bracket [29] and bracket [34].

NOTE: Make sure that the four oil tank dampers stay in place and align with the bolt holes in the oil tank.

(j) Install the two bolts [27] into the four oil tank dampers [30] at the oil tank [21].

NOTE: Do not tighten the bolts at this time.

(k) Tighten the nut [22] to 380.0-420.0 pound-inches (43.0-47.5 Newton-meters).

(l) Tighten the bolts [27] to 700.0-780.0 pound-inches (79.1-88.1 Newton-meters).

SUBTASK 79-11-01-420-003-H01

(4) Install the ground strap [25] to the bracket [29].

(a) Put the ground strap [25] between the bolt [26] and the bracket [29].

(b) Attach the ground strap [25] to the bracket [29] with the bolt [26] and the nut [28].

(c) Tighten the nut [28] to 110.0-120.0 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-11-01-420-004-H01

(5) Connect the oil tank supply tube [1] to the oil tank [21].

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

(a) Lubricate a preformed packing [31] with clean oil, D00552 [C02-019].

(b) Install the preformed packing [31] on the oil tank supply tube [1].

(c) Put the oil tank supply tube [1] in its position on the oil tank [21].

(d) Put grease, D00504 on the threads and friction surfaces of the bolts [32].

(e) Install the bolts [32] that attach the oil tank supply tube [1] to the oil tank [21].

1) Tighten the bolts [32] to 110.0-120.0 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-11-01-420-005-H01

(6) Do this task: Debris Monitoring System (DMS) Air/Oil Separator Installation, TASK 79-21-13-400-801-H01.

SUBTASK 79-11-01-420-006-H01

(7) Do this task: Oil Level Sensor Installation, TASK 79-31-01-400-801-H01.

SUBTASK 79-11-01-420-007-H01

(8) Do this task: Manual Gravity Filling Cap Assembly Installation, TASK 79-11-03-400-801-H01.

SUBTASK 79-11-01-612-001-H01

(9) Do this task: Engine Oil Replenishing, TASK 12-13-01-130-803-002.

I. Put the Airplane Back to its Usual Condition

SUBTASK 79-11-01-410-001-H01

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

(a) Close these access panels:

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

SUBTASK 79-11-01-440-001-H01

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

J. Oil Tank Installation Test

SUBTASK 79-11-01-710-001-H01

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

END OF TASK

MANUAL GRAVITY FILLING CAP ASSEMBLY - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the manual gravity filling cap assembly

(2) An installation of the manual gravity filling cap assembly.

TASK 79-11-03-000-801-H01

2. Manual Gravity Filling Cap Assembly Removal

A. General

(1) This procedure is the removal task for the manual gravity filling cap assembly (referred to as the assembly).

(2) You must open the oil tank access door to get access to the assembly.

B. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

C. Access Panels

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine

D. Prepare for Manual Gravity Filling Cap Assembly Removal

SUBTASK 79-11-03-010-001-H01

(1) Open the oil tank access door on the applicable left fan cowl panel:

(a) Open this access panel:

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine

E. Remove the Manual Gravity Filling Cap Assembly

SUBTASK 79-11-03-020-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

WARNING DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU.

(WARNING PRECEDES)

WARNING

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

CAUTION

DO NOT LET OIL GET ON THE ENGINE, OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE AREAS THAT OIL FALLS ON. OIL CAN CAUSE DAMAGE TO PAINT AND RUBBER.

(1) Remove the assembly [1] from the engine (Figure 401):

(a) Disconnect the scupper drain hose [6] and the PDOS drain tube [5] from the scupper [4].

(b) Remove the bolts [2] and the marking plate [9] that attach the assembly [1] to the scupper [4] and the oil tank [7].

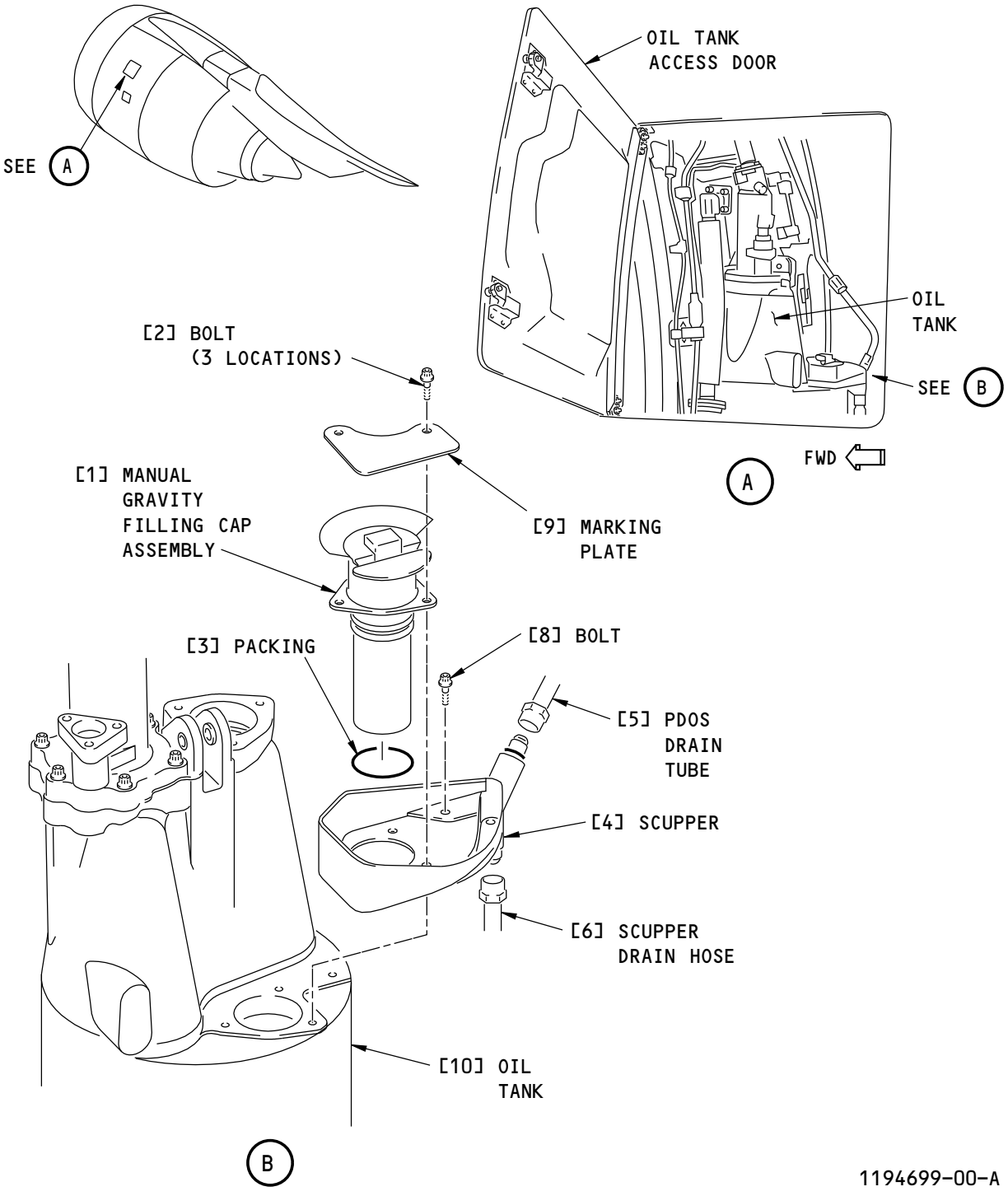
(c) Remove the bolt [8] that attaches the scupper [4] to the oil tank [7].

(d) Remove the assembly [1] with the scupper [4].

(e) Install a protective cover on the opening port of the assembly [1].

(f) Remove and discard the preformed packing [3] from the assembly [1].

——— END OF TASK ———



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Manual Gravity Filling Cap Assembly Installation
Figure 401/79-11-03-990-801-H01

TASK 79-11-03-400-801-H01

3. Manual Gravity Filling Cap Assembly Installation

A. General

(1) This procedure is the installation task for the manual gravity filling cap assembly (referred to as the assembly).

(2) You must do the tests that are listed in the power plant test reference table after the replacement of the assembly.

B. References

Reference	Title
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)

C. Consumable Materials

Reference	Description	Specification
D00504	Grease - Petrolatum	VV-P-236
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Assembly	79-11-01-03-155	ARO ALL
3	Preformed packing	79-11-01-03-115	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine

G. Install the Manual Gravity Filling Cap Assembly

SUBTASK 79-11-03-420-001-H01

(1) Install the assembly [1] (Figure 401):

(a) Remove the protective cover from the port in the oil tank [7] for the assembly [1].

(b) Lubricate a new preformed packing [3] with clean oil, D00552 [C02-019].

(c) Install the preformed packing [3] to the assembly [1].

(d) Put the scupper [4] in its position on the oil tank [7].

1) Put grease, D00504 on the threads and friction surfaces of the bolt [8].

2) Install the bolt [8] and tighten with your hand.

(e) Install the assembly [1] to the scupper [4] and the oil tank [7] and attach with the marking plate [9] and the three bolts [2].

1) Put grease, D00504 on the threads and friction surfaces of the bolts [2].

2) Put the assembly [1] and the marking plate [9] in their position on the scupper [4] and install the bolts [2].

3) Tighten the bolts [2] and bolt [8] to 35-42 pound-inches (3.8-4.7 Newton-meters).

(f) Connect the scupper drain hose [6] and the PDOS drain tube [5] to the scupper [4].

1) Tighten the B-nut on the scupper drain hose and the PDOS drain tube (TASK 70-51-00-910-801-H01) .

H. Put the Airplane Back to its Usual Condition.

SUBTASK 79-11-03-410-001-H01

(1) Close the oil tank access door:

(a) Close this access panel:

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine

I. Manual Gravity Filling Cap Assembly Installation Test

SUBTASK 79-11-03-710-001-H01

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

——— END OF TASK ———

OIL DISTRIBUTION SYSTEM - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has two tasks:

(1) An examination of the oil distribution system

(2) An oil filter contamination inspection.

TASK 79-21-00-200-801-H01

2. Oil Distribution System Inspection

(Figure 601)

A. General

(1) To examine the oil system, you must open the thrust reversers.

(2) This procedure will examine these parts:

(a) The Main Fuel/Oil Heat Exchanger

(b) The Oil Tubes

(c) The Lube and Scavenge Pump

(d) The Anti-Leak Valve

(e) The Debris Monitoring System (referred to as DMS) Sensor

(f) The DMS Air/Oil Separator

(g) The DMS Conditioner.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-11-06-230-801-H01	Fluorescent Penetrant Inspection (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)
79-21-01-000-803-H00	Main Fuel/Oil Heat Exchanger Removal (P/B 401)
79-21-01-400-801-H01	Main Fuel/Oil Heat Exchanger Installation (P/B 401)
79-21-03-000-801-H01	Lube and Scavenge Pump Removal (P/B 401)
79-21-03-400-801-H01	Lube and Scavenge Pump Installation (P/B 401)
79-21-08-000-801-H01	Anti-Leak Valve Removal (P/B 401)
79-21-08-400-801-H01	Anti-Leak Valve Installation (P/B 401)
79-21-12-400-801-H01	Debris Monitoring System (DMS) Sensor Installation (P/B 401)

(Continued)

Reference	Title
79-21-13-000-801-H01	Debris Monitoring System (DMS) Air/Oil Separator Removal (P/B 401)
79-21-13-400-801-H01	Debris Monitoring System (DMS) Air/Oil Separator Installation (P/B 401)
79-21-14-000-801-H01	Debris Monitoring System (DMS) Conditioner Removal (P/B 401)
79-21-14-400-801-H01	Debris Monitoring System (DMS) Conditioner Installation (P/B 401)
80-11-01-200-802-H01	Engine Starter Oil Leaks Inspection (P/B 601)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

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

E. Prepare for the Oil Distribution System Inspection

SUBTASK 79-21-00-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

F. Procedure

SUBTASK 79-21-00-210-001-H01

(1) Examine the main fuel/oil heat exchanger:

(a) Make sure the main fuel/oil heat exchanger is not loose:

1) If the main fuel/oil heat exchanger is loose, tighten the nuts that attach the main fuel/oil heat exchanger to the fuel adapter (TASK 79-21-01-400-801-H01).

(b) Look for signs of oil leaks.

1) If you see signs of oil leaks between the main fuel/oil heat exchanger and the fuel adapter, replace the gaskets (TASK 79-21-01-400-801-H01).

(c) Look for signs of fuel leaks.

1) If you see signs of fuel leaks between the main fuel/oil heat exchanger and the fuel adapter, replace the seals (TASK 79-21-01-400-801-H01).

(d) Look for cracks in the mounting flanges of the main fuel/oil heat exchanger.

1) If you see cracks, replace the main fuel/oil heat exchanger. There are the tasks: Main Fuel/Oil Heat Exchanger Removal, TASK 79-21-01-000-803-H00 and Main Fuel/Oil Heat Exchanger Installation, TASK 79-21-01-400-801-H01.

(e) Look for cracks in the main fuel/oil heat exchanger body.

1) If you see cracks, replace the main fuel/oil heat exchanger. There are the tasks: Main Fuel/Oil Heat Exchanger Removal, TASK 79-21-01-000-803-H00 and Main Fuel/Oil Heat Exchanger Installation, TASK 79-21-01-400-801-H01.

(f) Look for dents on the main fuel/oil heat exchanger body.

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

1) If you see dents, replace the main fuel/oil heat exchanger. There are the tasks: Main Fuel/Oil Heat Exchanger Removal, TASK 79-21-01-000-803-H00 and Main Fuel/Oil Heat Exchanger Installation, TASK 79-21-01-400-801-H01.

SUBTASK 79-21-00-210-002-H01

(2) Examine the oil tubes:

(a) Look for clamps that are broken or missing.

1) If you see clamps that are broken or are missing, replace the clamps.

(b) Look for oil tubes with splits, cracks, or kinks.

1) If you see an oil tube with damage, replace the oil tube.

NOTE: Wrinkles in the oil tube inner radii occur when the tube was made are permitted.

(c) Look for dents in the straight sections of the tubes.

1) If you see more than two dents for each 3.0 inches (76.0 mm) of oil tube, replace the oil tube.

2) If a dent is less than 0.500 in. (12.70 mm) from the edge of another dent, replace the oil tube.

3) If the depth of the dent is more than 20 percent of the outside diameter of the oil tube, replace the oil tube.

4) If the dent is on a large tube reduces diameter of the tube to less than the diameter of the small tube connected to it, replace the tube.

NOTE: The small tube is connected to the large tube by a reducer.

(d) Look for dents in the radii of the tubes

1) If you see more than two dents for each 3.0 inch (76.0 mm) of oil tube, replace the oil tube.

2) If a dent is less than 0.250 inch (6.40 mm) from the edge of another dent, replace the oil tube

3) If the depth of the dent is more than 10 percent of the outside diameter of the oil tube, replace the oil tube

4) Do a fluorescent penetrant inspection for cracks on the dent that is located on a 90 degree radii (TASK 70-11-06-230-801-H01).

(e) Look for nicks, scratches, chafes, or scores:

1) If the nick, scratch, chafe, or score is more than 25 percent of nominal tube wall thickness, replace the oil tube.

SUBTASK 79-21-00-210-003-H01

(3) Examine the lube and scavenge pump:

(a) Make sure the lube and scavenge pump is not loose.

1) If the lube and scavenge pump is loose, tighten the V-band clamp (TASK 70-51-00-910-801-H01).

(b) Look for signs of oil leaks.

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

1) If you see oil leaks, tighten the B-nuts on the oil tubes, or replace gaskets or seals as it is necessary (TASK 79-21-03-400-801-H01).

(c) Look for cracks on the lube and scavenge pump.

1) If you see cracks, replace the lube and scavenge pump. These are the tasks: Lube and Scavenge Pump Removal, TASK 79-21-03-000-801-H01 and Lube and Scavenge Pump Installation, TASK 79-21-03-400-801-H01.

(d) Look for dents on the lube and scavenge pump.

1) If you see dents, replace the lube and scavenge pump. These are the tasks: Lube and Scavenge Pump Removal, TASK 79-21-03-000-801-H01 and Lube and Scavenge Pump Installation, TASK 79-21-03-400-801-H01.

(e) Do a visual check of the four oil filter cover bolts.

1) If you see a broken bolt, replace the bolt.

SUBTASK 79-21-00-210-004-H01

(4) Examine the anti-leak valve:

(a) Look for signs of oil leaks.

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

1) If you see leaks from either end of the anti-leak valve, remove and replace the gasket or gasket seal, as it is necessary (TASK 79-21-08-400-801-H01).

(b) Look for cracks in the mounting flanges of the anti-leak valve.

1) If you see cracks, replace the anti-leak valve. There are the tasks:Anti-Leak Valve Removal, TASK 79-21-08-000-801-H01 and Anti-Leak Valve Installation, TASK 79-21-08-400-801-H01.

(c) Look for dents in the anti-leak valve.

1) If you see dents, replace the anti-leak valve. There are the tasks:Anti-Leak Valve Removal, TASK 79-21-08-000-801-H01 and Anti-Leak Valve Installation, TASK 79-21-08-400-801-H01.

SUBTASK 79-21-00-210-005-H01

(5) Examine the DMS sensor:

(a) Look for signs of oil leaks.

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

1) If you see signs of oil leaks, replace the packing (TASK 79-21-12-400-801-H01).

(b) Make sure the DMS sensor is not loose.

1) If the DMS sensor is loose, tighten the bolts that attach the DMS sensor to the air/oil separator (TASK 79-21-12-400-801-H01).

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

1) If the electrical connector is loose, tighten the electrical connector (TASK 70-00-01-400-807-H01).

SUBTASK 79-21-00-210-006-H01

(6) Examine the DMS air/oil separator:

(a) Make sure the DMS air/oil separator is not loose.

1) If the DMS air/oil separator is loose, tighten the bolts that attach the DMS air/oil separator to the oil tank (TASK 79-21-13-400-801-H01).

(b) Look for signs of oil leaks.

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

1) If you see an oil leak between the DMS air/oil separator and the oil tank, remove and replace the gasket (TASK 79-21-13-400-801-H01).

(c) Look for cracks in the mounting flange.

1) If you see cracks, replace the DMS air/oil separator. These are the tasks: Debris Monitoring System (DMS) Air/Oil Separator Removal, TASK 79-21-13-000-801-H01 and Debris Monitoring System (DMS) Air/Oil Separator Installation, TASK 79-21-13-400-801-H01.

(d) Look for dents.

1) If you see dents, replace the DMS air/oil separator. These are the tasks: Debris Monitoring System (DMS) Air/Oil Separator Removal, TASK 79-21-13-000-801-H01 and Debris Monitoring System (DMS) Air/Oil Separator Installation, TASK 79-21-13-400-801-H01.

SUBTASK 79-21-00-210-007-H01

(7) Examine the DMS conditioner:

(a) Look for cracks in the mounting flange.

1) If you see cracks, replace the DMS conditioner. These are the tasks: Debris Monitoring System (DMS) Conditioner Removal, TASK 79-21-14-000-801-H01 and Debris Monitoring System (DMS) Conditioner Installation, TASK 79-21-14-400-801-H01.

(b) Make sure the DMS conditioner is not loose.

1) If the DMS conditioner is loose, tighten the bolts (TASK 79-21-14-400-801-H01).

(c) Make sure the electrical connectors are not loose (TASK 70-00-01-400-807-H01).

SUBTASK 79-21-00-210-008-H01

(8) Examine the starter magnetic chip detector and the starter mount for signs of oil leakage (TASK 80-11-01-200-802-H01).

G. Put the Airplane Back to Its Usual Condition

SUBTASK 79-21-00-410-001-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

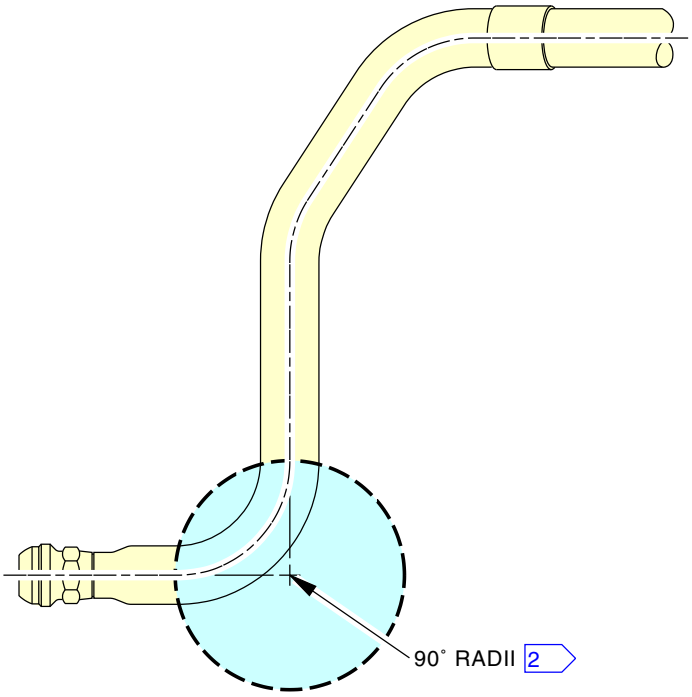
(Continued)

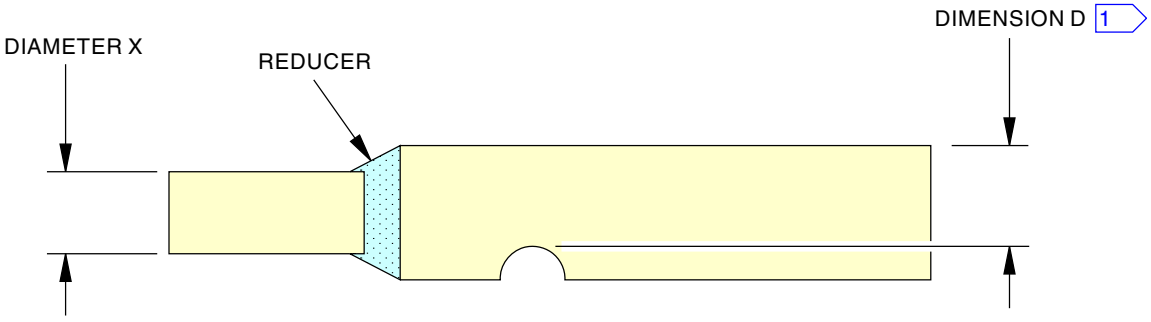
Number	Name/Location
424AR	Right Fan Cowl Panel, Right Engine

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

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

——— END OF TASK ———





1 THE TUBE DIAMETER IN D (LOCATION OF THE DENT) MUST BE GREATER THAN X DIAMETER OF THE SMALLER TUBE.

2 DENT LOCATION MUST BE SPOT FPI INSPECTED TO ENSURE THAT CRACKS OR LEAKS ARE NOT PRESENT.

1551350 S0000285274_V2

Tube Inspection
Figure 601/79-21-00-990-801-H00

TASK 79-21-00-700-801-H01

3. Oil Filter Contamination (Scheduled Maintenance Requirement) Inspection

A. General

(1) There are four procedures to do a check for oil filter contamination.

(a) One procedure uses the MAT (preferred) to look for oil filter fault messages.

(b) One procedure (alternate) uses the CMC present leg fault report.

(c) One procedure (alternate) uses oil filter delta pressure trend data collected by the ACMF.

(d) The other procedure (alternate) is for use when the MAT/CMC/ACMF Functions are not available.

(2) For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)
79-21-07-000-801-H01	Oil Filter Element Removal (P/B 401)
79-21-07-400-801-H01	Oil Filter Element Installation (P/B 401)

C. Location Zones

Zone	Area
212	Flight Compartment, Right

D. Oil Filter Contamination Inspection (Preferred)

SUBTASK 79-21-00-860-001-H01

(1) Set the EEC MAINT L or R ENG POWER switch on the aft overhead maintenance panel, P61, to the TEST position.

(a) Wait 30 seconds before you start the test.

SUBTASK 79-21-00-740-001-H01

(2) Use a maintenance access terminal (MAT) to find the oil filter maintenance messages.

(a) Make these selections on the MAT:

1) ONBOARD MAINTENANCE

2) EXTENDED MAINTENANCE

3) FAULT HISTORY

4) 71-80 Left or Right Engine

(b) Look for one or more of these maintenance messages in the last 3 flight legs (leg 0, leg -1, or leg -2).

Table 601/79-21-00-993-802-H00 Maintenance Messages - Oil Filter

Maintenance Messages	
79-34471	Oil Filter (L Eng) maintenance is required
79-34472	Oil Filter (R Eng) maintenance is required

1) If one or more of the above maintenance messages is present, do the corrective action in the FIM.

(c) Select EXIT MAINTENANCE from the extended maintenance menu.

SUBTASK 79-21-00-860-002-H01

(3) Set the EEC MAINT L or R ENG POWER switch on the aft overhead maintenance panel, P61, to the NORM position.

E. Oil Filter Contamination Inspection (Alternate)

SUBTASK 79-21-00-210-009-H00

(1) If you use the procedure (alternate) that uses the CMC present leg fault report, do these steps:

(a) Examine the present leg fault reports transmitted by the airplane.

(b) Look for one or more of these maintenance messages in the last three flight legs. If one or more of these messages is present, do the corrective action in the FIM.

1) 79-34471 Oil filter (L Eng) maintenance is required

2) 79-34472 Oil filter (R Eng) maintenance is required

SUBTASK 79-21-00-210-010-H00

(2) If you use the procedure (alternate) that uses the oil filter delta pressure trend data collected by the ACMF, do these steps:

(a) Examine the ACMF trend data for oil delta pressure.

(b) 2. If there is an oil delta pressure value greater than or equal to 25 PSID, with an oil temperature greater than or equal to 50 degrees C in the last three flight legs, do the corrective actions in the FIM for these maintenance messages:

1) 79-34471 Oil filter (L Eng) maintenance is required

2) 79-34472 Oil filter (R Eng) maintenance is required

SUBTASK 79-21-00-020-001-H01

(3) If the MAT/CMC/ACMF functions are not available, replace the oil filter element. These are the tasks: Oil Filter Element Removal, TASK 79-21-07-000-801-H01 and Oil Filter Element Installation, TASK 79-21-07-400-801-H01

——— END OF TASK ———

MAIN FUEL/OIL HEAT EXCHANGER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the main fuel/oil heat exchanger

(2) An installation of the main fuel/oil heat exchanger.

TASK 79-21-01-000-803-H00

2. Main Fuel/Oil Heat Exchanger Removal

(Figure 401)

A. General

(1) This procedure is the removal task for the main fuel/oil heat exchanger (referred to as the heat exchanger).

(2) The heat exchanger is on the aft side of the accessory gearbox at approximately the 3:00 o'clock position.

(3) You must open the right thrust reverser to get access to the heat exchanger.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-04-200-801-H01	Gasket Seal (with Imbedded Flexible Seal Material) Removal (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-201	Container - Fuel Resistant, 5 U.S.-Gal (19 l)
STD-205	Container - Oil Resistant, 5 U.S.-Gal (19 l)

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Preformed packing	73-11-01-03-065	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

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

(Continued)

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

H. Prepare for the Main Fuel/Oil Heat Exchanger Removal

SUBTASK 79-21-01-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

I. Main Fuel/Oil Heat Exchanger Removal

SUBTASK 79-21-01-680-001-H01

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Drain the fuel from the main fuel pump fuel filter assembly [1] (Figure 401):

(a) Put a 5 U.S.-gal (19 l) fuel resistant container, STD-201) below the main fuel pump fuel filter assembly [1].

(b) Remove the bleeder (drain) plug [2] from the main fuel pump fuel filter assembly [1] and permit the fuel to drain into the 5 U.S.-gal (19 l) fuel resistant container, STD-201.

(c) Remove the preformed packing [3] from the bleeder (drain) plug [2] and discard.

(d) Put clean oil, D00552 [C02-019] on a new preformed packing [3].

1) Make sure that you put the correct preformed packing [3] on the bleeder (drain) plug [2].

NOTE: Do not twist the preformed packing, fuel leakage can occur.

(e) Put a short piece of string through the new new preformed packing [3].

CAUTION MAKE SURE THAT THE BLEEDER DRAIN PLUG THREADS DO NOT TOUCH THE PERFORMED PACKINGS. IF IT TOUCHES, IT CAN CAUSE DAMAGE TO THE PERFORMED PACKINGS AND CAN CAUSE FUEL LEAKAGE.

(f) Put the new preformed packing [3] on the bleeder (drain) plug [2].

(g) Use the string to pull the new preformed packing [3] away from the threads of the drain plug.

1) Pull the string around the new preformed packing [3] twice to remove any twisting of the preformed packing [3].

(h) Install the bleeder (drain) plug [2] in the fuel filter assembly [1].

1) Make sure that you feel the plug makes a click sound during the installation.

NOTE: If you do not feel the plug makes a click sound, the bleeder drain plug can be damaged.

(i) Use the torque wrench when you install the bleeder (drain) plug [2].

1) Tighten the bleeder (drain) plug [2] to 105-120 pound-inches (11.9-13.6 Newton-meters).

SUBTASK 79-21-01-020-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

WARNING DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU.

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

CAUTION DO NOT LET OIL GET ON THE ENGINE, OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE AREAS THAT OIL FALLS ON. OIL CAN CAUSE DAMAGE TO PAINT AND RUBBER.

(2) Disconnect the OIL IN tube-hose [9] and OIL OUT tube-hose [10] tube-hoses from the heat exchanger [5]:

(a) Put a 5 U.S.-gal (19 l) oil resistant container, STD-205 below the heat exchanger [5].

(b) Remove the four bolts [8] that attach the OIL IN tube-hose [9] and OIL OUT tube-hose [10] to the heat exchanger [5].

(c) Pull the OIL IN tube-hose [9] and OIL OUT tube-hose [10] away from the heat exchanger [5].

(d) Remove the gasket seal [7] and gasket seal [11] from the OIL IN tube-hose [9] and OIL OUT tube-hose [10] (TASK 70-00-04-200-801-H01).

(e) Do a check on the gasket seal [7] and gasket seal [11] for damage.

1) Use the gasket seal [7] and gasket seal [11] for installation if they are not damaged.

(f) Install protective covers on all oil tube-hoses and ports.

SUBTASK 79-21-01-020-002-H01

(3) Remove the heat exchanger [5].

(a) Remove the six nuts [6] that attach the fuel and servo flange of the heat exchanger [5] to the fuel adapter.

WARNING MAKE SURE THAT YOU SUPPORT THE MAIN FUEL/OIL HEAT EXCHANGER CORRECTLY. THE HEAT EXCHANGER WITH FUEL AND OIL INSIDE CAN EXCEED A WEIGHT OF 29 POUNDS (13 KG), AND IS NOT EASY TO HANDLE. INJURES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

CAUTION MAKE SURE THE OIL IN AND OIL OUT FLANGES POINT UP AS YOU REMOVE THE HEAT EXCHANGER. IF YOU DO NOT, OIL SPILLAGE WILL OCCUR.

(b) Remove the two nuts [14] that attach the heat exchanger [5] to the fuel adapter and remove the heat exchanger [5].

NOTE: Make sure the OIL IN and OIL OUT flanges point up.

(c) Put the heat exchanger [5] in a position above the 5 U.S.-gal (19 l) oil resistant container, STD-205.

WARNING DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. KEEP THE FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE, WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

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

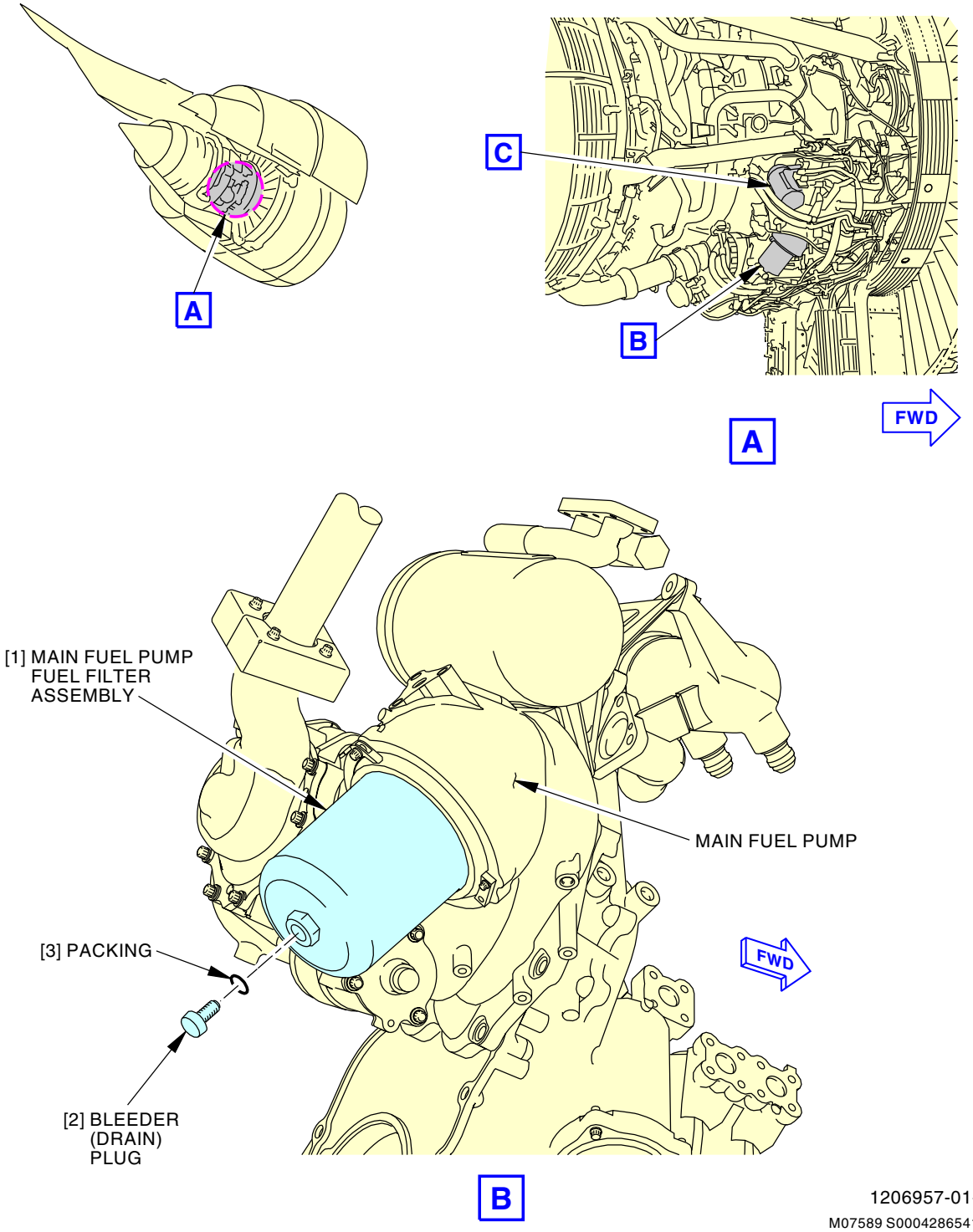
(d) Turn the heat exchanger [5] so the OIL IN and OIL OUT flanges face in the downward direction over the 5 U.S.-gal (19 l) oil resistant container, STD-205.

(e) Permit the oil to drain into the 5 U.S.-gal (19 l) oil resistant container, STD-205 from the OIL IN and OIL OUT ports.

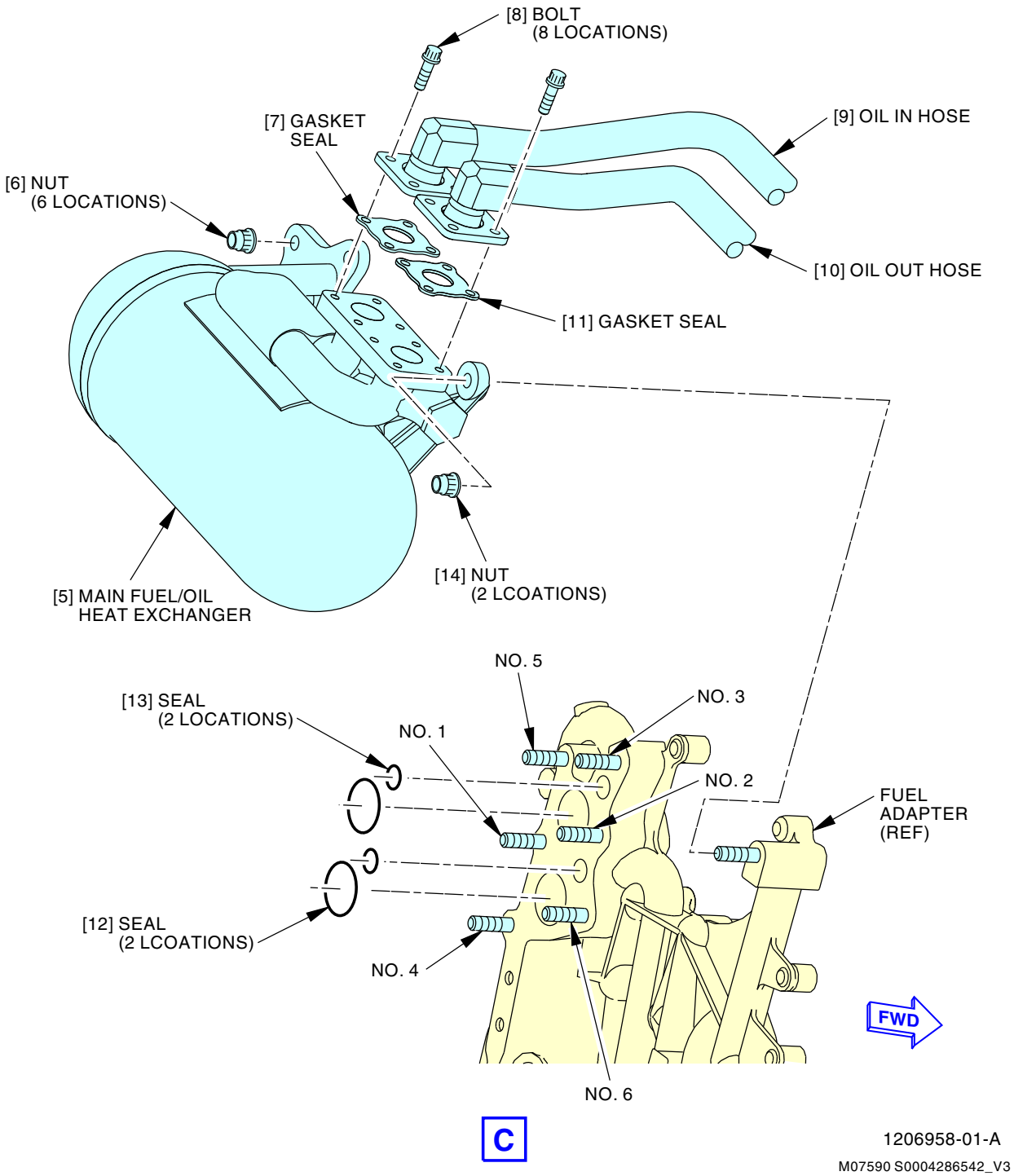
(f) Remove and discard the seals [12] and seals [13] from the heat exchanger [5].

(g) Install protective covers on all of the surfaces and ports of the heat exchanger [5] and fuel adapter.

——— END OF TASK ———



Main Fuel/Oil Heat Exchanger Installation
Figure 401/79-21-01-990-801-H01 (Sheet 1 of 2)



Main Fuel/Oil Heat Exchanger Installation
Figure 401/79-21-01-990-801-H01 (Sheet 2 of 2)

TASK 79-21-01-400-801-H01

3. Main Fuel/Oil Heat Exchanger Installation

(Figure 401)

A. General

(1) This procedure is the installation task for the main fuel/oil heat exchanger (referred to as the heat exchanger).

(2) You must do the tests that are listed in the power plant test reference table after you install the heat exchanger.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-04-400-803-H01	Gasket Seal (with Imbedded Flexible Seal Material) Installation (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Heat exchanger	79-21-02-02-020	ARO ALL
7	Gasket seal	79-21-51-31-110	ARO ALL
		79-21-51-31-255	ARO ALL
11	Gasket seal	79-21-51-31-110	ARO ALL
		79-21-51-31-255	ARO ALL
12	Seal	79-21-02-02-010	ARO ALL
13	Seal	79-21-02-02-015	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

(Continued)

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

G. Main Fuel/Oil Heat Exchanger Installation

SUBTASK 79-21-01-020-003-H01

(1) Remove the protective covers from the heat exchanger [5] (Figure 401).

SUBTASK 79-21-01-100-001-H01

(2) Wipe the heat exchanger [5] port counterbores with a cotton wiper, G00034.

(a) Make sure you clean the AGB or LRU counterbores.

NOTE: Contamination in the AGB or LRU counterbores can cause leakage.

SUBTASK 79-21-01-420-001-H01

(3) Install the seals [12] and seals [13] into the two fuel port counterbores.

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

(a) Apply clean oil, D00552 [C02-019] to the seals [12] and seals [13].

(b) Install the seals [12] and seals [13] into the two fuel port counterbores.

(c) Look at the ID of the seals [12] and seals [13] to make sure the spring did not push out of the groove when you installed them in the counterbores.

1) Replace the seal if the spring is pushed out of the groove.

SUBTASK 79-21-01-420-002-H01

WARNING MAKE SURE THAT YOU SUPPORT THE MAIN FUEL/OIL HEAT EXCHANGER CORRECTLY. THE HEAT EXCHANGER WITH FUEL AND OIL INSIDE CAN EXCEED A WEIGHT OF 29 POUNDS (13 KG), AND IS NOT EASY TO HANDLE. INJURES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Install the heat exchanger [5] (Figure 401).

(a) Carefully put the heat exchanger [5] in its position on the fuel adapter.

(b) Make sure the FUEL IN, FUEL OUT, SERVO IN, and SERVO OUT seals installed in the correct positions.

(c) Apply the Acheson GP460 compound, D50043 [C02-058] to the threads and friction surfaces of the nuts [6] and nuts [14].

(d) Install the nuts [6] that attach the heat exchanger [5] to the fuel adapter.

1) Tighten the nuts [6] with your hand.

2) Tighten the nuts [6] to 170-200 pound-inches (19.2-22.5 Newton-meters) .

NOTE: Tighten the nuts in the criss cross bolt pattern sequence that follows: No. 1, No. 2, No. 3, No. 4, No. 5, and the No. 6 positions.

(e) Install the nuts [14] that attach the heat exchanger [5] mounting feet to the fuel adapter.

1) Tighten the nuts [14] with your hand.

2) Tighten the nuts [14] to 170-200 pound-inches (19.2-22.5 Newton-meters).

NOTE: Tighten the nuts in the criss cross bolt pattern sequence that follows: No. 1, No. 2, No. 3, No. 4, No. 5, and the No. 6 positions.

(f) Tighten the nuts [6] again to 226-266 pound-inches (25.5-30.0 Newton-meters).

(g) Tighten the nuts [14] again to 226-266 pound-inches (25.5-30.0 Newton-meters).

SUBTASK 79-21-01-010-002-H01

(5) Remove the protective covers from the oil tube-hoses and ports.

SUBTASK 79-21-01-410-001-H01

(6) Install the OIL IN tube-hose [9].

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

(a) Lubricate the gasket seal [7] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [7] in position on the heat exchanger [5](TASK 70-00-04-400-803-H01).

(c) Put the OIL IN tube-hose [9] in position on the heat exchanger [5].

(d) Apply the Acheson GP460 compound, D50043 [C02-058] to the threads and friction surfaces of the bolts [8].

(e) Loosely install the bolts [8] that attach the OIL IN tube-hose [9] to the heat exchanger [5].

(f) Tighten the bolts [8] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-01-420-003-H01

(7) Install the OIL OUT tube-hose [10].

(a) Lubricate the gasket seal [11] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [11] in its position on the heat exchanger [5].

(c) Put the OIL OUT tube-hose [10] in its position on the heat exchanger [5].

(d) Loosely install the bolts [8] that attach the OIL OUT tube-hose [10] to the heat exchanger [5].

(e) Tighten the bolts [8] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-01-612-001-H01

(8) Do this task: Engine Oil Replenishing, TASK 12-13-01-130-803-002.

H. Put the Airplane Back to its Usual Condition

SUBTASK 79-21-01-410-002-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

I. Main Fuel/Oil Heat Exchanger Installation Test

SUBTASK 79-21-01-710-001-H01

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

——— END OF TASK ———

LUBE AND SCAVENGE PUMP - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) Lube and Scavenge Pump Removal

(2) Lube and Scavenge Pump Installation.

TASK 79-21-03-000-801-H01

2. Lube and Scavenge Pump Removal

(Figure 401)

A. General

(1) The lube and scavenge pump (referred to as lube pump) is on the forward face of the gearbox at approximately the 6:00 o'clock position.

(2) You must open the thrust reversers to get access to the lube pump.

(3) To remove the lube pump, you must do these steps:

(a) Drain the oil from the lube filter bowl.

(b) Disconnect the oil hoses and oil tube-hoses from the lube pump.

(c) Remove the lube pump from the accessory gearbox.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-205	Container - Oil Resistant, 5 U.S.-Gal (19 l)
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

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

(Continued)

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

F. Prepare for the Lube and Scavenge Pump Removal

SUBTASK 79-21-03-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

G. Lube and Scavenge Pump Removal

SUBTASK 79-21-03-680-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

(WARNING PRECEDES)

WARNING DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU.

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

CAUTION DO NOT LET OIL GET ON THE ENGINE, OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE AREAS THAT OIL FALLS ON. OIL CAN CAUSE DAMAGE TO PAINT AND RUBBER.

(1) Drain the oil from the filter cover [9]:

CAUTION A LARGE VOLUME OF OIL WILL DRAIN FROM THE LUBE PUMP. TO PREVENT AN OIL SPILL, YOU MUST USE A MINIMUM OF 2 CONTAINERS TO DRAIN THE LUBE PUMP.

(a) Put a clean 5 U.S.-gal (19 l) oil resistant container, STD-205 below the drain plug [11] in the filter cover [9].

(b) Remove the drain plug [11] and preformed packing [10] from the filter cover [9] and permit the oil to drain into the container.

(c) Remove and discard the preformed packing [10].

SUBTASK 79-21-03-020-001-H01

(2) Remove the oil filter differential pressure sensor (referred to as the DP sensor [4]):

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

CAUTION MAKE SURE THAT THE ELECTRICAL CONNECTORS ARE CLEAN BEFORE YOU DISCONNECT, OR CONNECT THEM. CONTAMINATION OF THE ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

(a) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [2] from the DP sensor [4] (TASK 70-00-01-400-807-H01).

(b) Install protective covers on the electrical receptacle on the DP sensor [4] and the electrical connector [2].

(c) Remove the three bolts [3] that attach the DP sensor [4] and the insulation [12] to the lube pump [1].

1) Remove the DP sensor [4] and insulation [12].

(d) Remove the gasket seal [5] from the DP sensor [4].

(e) Examine the gasket seal [5] for damage.

1) If you see damage, discard the gasket seal [5].

SUBTASK 79-21-03-020-002-H01

(3) Remove the A-sump oil tube-hose [47] from the lube pump [1]:

(a) Remove the four bolts [46] that attach the A-sump oil tube-hose [47] to the lube pump [1].

(b) Move the A-sump oil tube-hose [47] away from the lube pump [1].

(c) Remove the gasket seal [39] from the lube pump [1].

(d) Examine the gasket seal [39] for damage.

1) If you see damage, discard the gasket seal [39].

SUBTASK 79-21-03-020-003-H01

(4) Remove the TGB oil tube-hose [45] from the lube pump [1]:

(a) Remove the four bolts [44] that attach the TGB oil tube-hose [45] to the lube pump [1].

(b) Move the TGB oil tube-hose [45] away from the lube pump [1].

(c) Remove the gasket seal [41] from the lube pump [1].

(d) Examine the gasket seal [41] for damage.

1) If you see damage, discard the gasket seal [41].

SUBTASK 79-21-03-020-004-H01

(5) Remove the AGB oil tube-hose [42] from the accessory gearbox [25] and lube pump [1]:

(a) Remove the bolt [55] and clamp [56] from the AGB oil tube-hose [42].

(b) Remove the four bolts [53] that attach the AGB oil tube-hose [42] to the accessory gearbox [25].

(c) Remove the four bolts [43] that attach the AGB oil tube-hose [42] to the lube pump [1].

(d) Remove the AGB oil tube-hose [42] from the accessory gearbox [25] and the lube pump [1].

(e) Remove the gasket seal [54] from the accessory gearbox [25].

(f) Remove the gasket seal [40] from the lube pump [1].

(g) Examine the gasket seal [54] and gasket seal [40] for damage.

1) If you see damage, discard the gasket seal [40].

SUBTASK 79-21-03-020-005-H01

(6) Remove the SCAVENGE OUT oil tube-hose [31] from the lube pump [1]:

(a) Remove the four bolts [30] that attach the SCAVENGE OUT oil tube-hose [31] from the lube pump [1].

(b) Move the SCAVENGE OUT oil tube-hose [31] away from the lube pump [1].

(c) Remove the gasket seal [36] from the lube pump [1].

(d) Examine the gasket seal [36] for damage.

1) If you see damage, discard the gasket seal [36].

SUBTASK 79-21-03-020-008-H01

(7) Remove the anti-leak valve [34] and the SUPPLY IN oil tube-hose [32] (as an assembly) from the lube pump [1]:

CAUTION

MAKE SURE THE LONG MOUNT BOLTS FOR THE ANTI-LEAK VALVE ARE KEPT SEPARATE FROM THE TUBE-HOSE MOUNT BOLTS. IF YOU INSTALL THE BOLTS INCORRECTLY, OIL LEAKAGE OR DAMAGE TO EQUIPMENT CAN OCCUR AT LUBE PUMP INSTALLATION.

(CAUTION PRECEDES)

CAUTION

DO NOT REMOVE THE ANTI-LEAK VALVE FROM THE SUPPLY IN OIL TUBE-HOSE. ENGINE OIL WILL DRAIN OUT OF THE OIL TANK.

(a) Remove the four bolts [33] and washers [37] that attach the anti-leak valve [34] to the lube pump [1].

(b) Move the anti-leak valve [34] and the SUPPLY IN oil tube-hose [32] (as an assembly) away from the lube pump [1].

(c) Remove the gasket seal [35] from the anti-leak valve [34].

(d) Examine the gasket seal [35] for damage.

1) If you see damage, discard the gasket seal [35].

SUBTASK 79-21-03-020-009-H01

(8) Remove the SUPPLY OUT oil tube-hose [28] from the lube pump [1]:

(a) Remove the four bolts [20] that attach the SUPPLY OUT oil tube-hose [28] to the lube pump [1].

(b) Move the SUPPLY OUT oil tube-hose [28] away from the lube pump [1].

(c) Remove the gasket seal [29] from the SUPPLY OUT oil tube-hose [28].

(d) Examine the gasket seal [29] for damage.

1) If you see damage, discard the gasket seal [29].

SUBTASK 79-21-03-020-010-H01

(9) Remove the C-sump oil tube-hose [21] from the lube pump [1].

(a) Remove the four bolts [20] that attach the C-sump oil tube-hose [21] to the lube pump [1].

(b) Move the C-sump oil tube-hose [21] away from the lube pump [1].

(c) Remove the gasket seal [27] from the lube pump [1].

(d) Examine the gasket seal [27] for damage.

1) If you see damage, discard the gasket seal [27].

SUBTASK 79-21-03-020-011-H01

(10) Remove the B-sump oil tube-hose [22] from the lube pump [1]:

(a) Remove the six bolts [20] that attach the B-sump oil tube-hose [22] to the lube pump [1].

(b) Move the B-sump oil tube-hose [22] away from the lube pump [1].

(c) Remove the gasket seal [23] from the lube pump [1].

(d) Examine the gasket seal [23] for damage.

1) If you see damage, discard the gasket seal [23].

SUBTASK 79-21-03-020-012-H01

(11) Remove the lube pump [1] from the accessory gearbox [25]:

WARNING

BE CAREFUL WHEN YOU MOVE THE LUBE PUMP. THE LUBE PUMP WEIGHS 33 POUNDS (15 KG), INJURIES TO PERSONS CAN OCCUR.

(WARNING PRECEDES)

CAUTION MAKE SURE YOU FULLY SUPPORT THE LUBE PUMP UNTIL THE DRIVE SHAFT IS CLEAR OF THE AGB. IF YOU LET THE WEIGHT OF THE LUBE PUMP REST ON THE DRIVE SHAFT, YOU CAN CAUSE DAMAGE TO THE AGB AND LUBE PUMP.

(a) While you support the lube pump [1], do these steps:

1) Remove the V-band clamp [52] that attaches the lube pump [1] to the accessory gearbox [25].

2) Carefully move the lube pump [1] away from the accessory gearbox [25] until the drive shaft is not in the accessory gearbox [25].

NOTE: In the event that the lube pump drive shaft disengagement occurred during the lube pump removal, do not try to re-engage it after the lube pump removal. Re-engagement of the shaft must be preformed in an approved repair shop only.

(b) Move the lube pump [1] away from the engine.

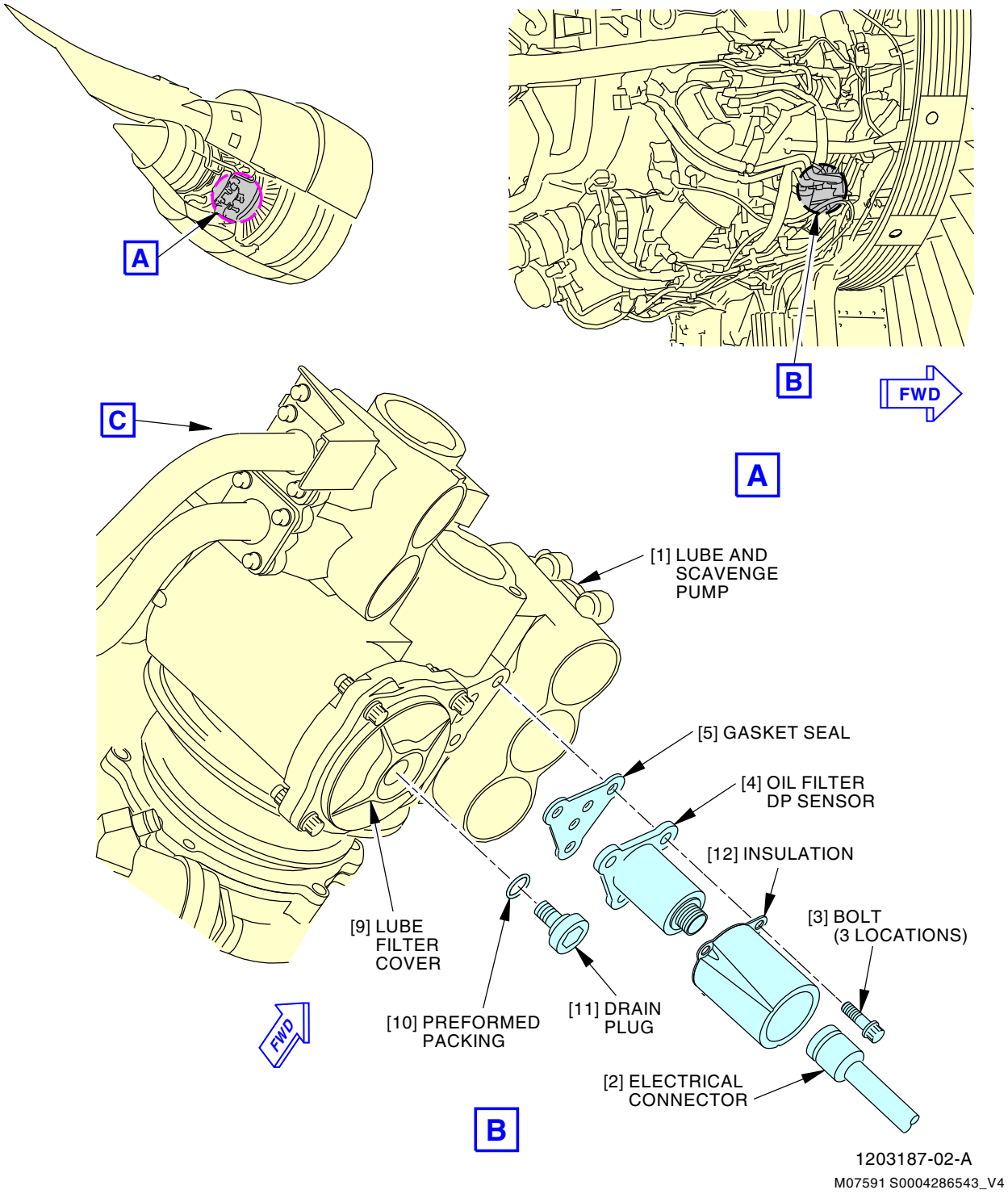
(c) Remove and discard the preformed packing [51] from the groove on the flange of the lube pump [1].

(d) Install a protective cover over the drive shaft of the lube pump [1].

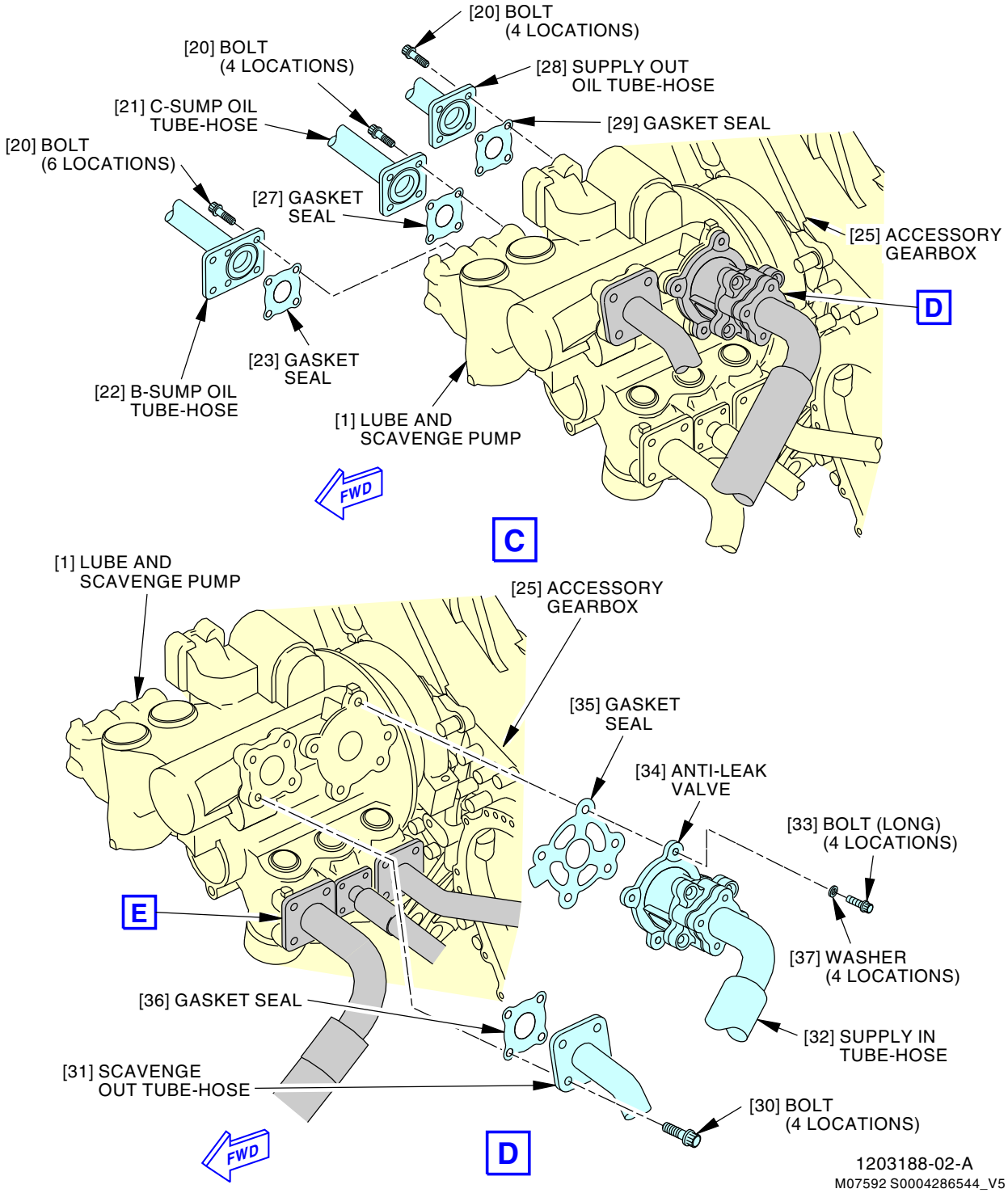
(e) Install a protective cover over the port in the accessory gearbox [25] for the lube pump [1].

(f) Install protective covers on all oil tube-hoses, oil hoses, fittings, and openings.

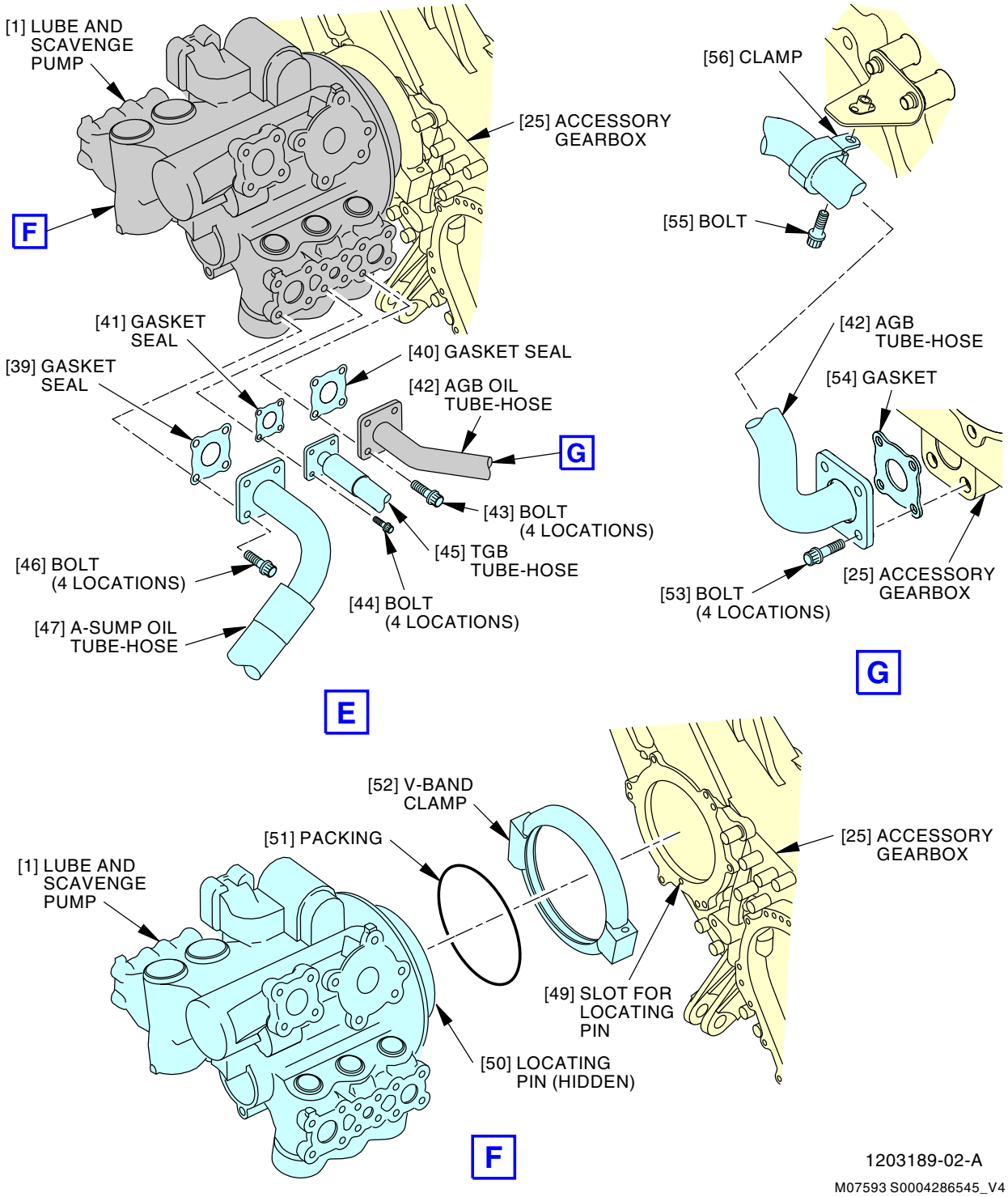
——— END OF TASK ———



Lube and Scavenge Pump Installation
Figure 401/79-21-03-990-801-H01 (Sheet 1 of 3)



Lube and Scavenge Pump Installation
Figure 401/79-21-03-990-801-H01 (Sheet 2 of 3)



Lube and Scavenge Pump Installation
Figure 401/79-21-03-990-801-H01 (Sheet 3 of 3)

TASK 79-21-03-400-801-H01

3. Lube and Scavenge Pump Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the lube and scavenge pump (referred to as lube pump).

(2) You must do the tests that are listed in the power plant test reference table after you replace the lube pump.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-51-00-910-801-H01	Instruction for Torque (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
72-00-00-980-801-H01	Manual Motoring of the HPC Rotor (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

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

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Lube pump	79-21-03-03-015	ARO ALL
5	Gasket seal	79-32-01-04A-015	ARO ALL
10	Preformed packing	79-21-03-03-025	ARO ALL
23	Gasket seal	79-21-51-33C-025	ARO ALL
27	Gasket seal	79-21-51-33C-025	ARO ALL
29	Gasket seal	79-21-51-31A-025	ARO ALL
35	Gasket seal	79-21-08-03-020	ARO ALL
36	Gasket seal	79-21-51-32-095	ARO ALL
		79-21-51-32D-035	ARO ALL
39	Gasket seal	79-21-51-32-095	ARO ALL
40	Gasket seal	79-21-51-32-050	ARO ALL
		79-21-51-32A-425	ARO ALL
		79-21-51-32D-035	ARO ALL

(Continued)

AMM Item	Description	AIPC Reference	AIPC Effectivity
41	Gasket seal	79-21-51-32-110	ARO ALL
51	Preformed packing	79-21-03-03-010	ARO ALL
54	Gasket seal	79-21-51-32-105	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

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

H. Lube and Scavenge Pump Installation

SUBTASK 79-21-03-420-001-H01

(1) Install the lube pump [1] on the accessory gearbox [25]:

(a) Remove the motoring pad cover and install the manual motoring tool (TASK 72-00-00-980-801-H01) to enable the rotation of the AGB during the lube unit installation.

NOTE: The objective is to ease the introduction and engagement of the lube and scavenge pump drive shaft splines into the AGB drive shaft spline recess and thus prevent the lube and scavenge pump and the AGB from potential damage.

NOTE: Use of the electrical motoring tool (TASK 72-00-00-980-802-H01) is not recommended to enable rotation of the AGB during lube unit installation.

(b) Remove the protective cover from the port in the accessory gearbox [25] for the lube pump [1].

NOTE: In the event of defect on the lube pump drive shaft forward end, such as a dent, unusual contact marks or bends, replacement of the shaft in an approved repair shop is required before you do the lube and scavenge pump installation.

(c) Remove the protective cover from the drive shaft of the lube pump [1].

WARNING

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

(d) Lubricate a new preformed packing [51] with clean oil, D00552 [C02-019].

(e) Put the preformed packing [51] in the groove of the lube pump [1] flange.

NOTE: In the event that the lube pump drive shaft disengagement occurred during the lube pump installation, do not try to re-engage it. Re-engagement of the shaft must be performed in an approved repair shop only.

(f) Make sure the lube pump [1] drive shaft is back against the lube pump housing.

(g) Move all of the oil hoses and the oil tube-hoses away from the lube pump [1].

NOTE: If it is necessary, tie the hoses away from the lube pump.

WARNING BE CAREFUL WHEN YOU MOVE THE LUBE PUMP. THE LUBE PUMP WEIGHS 33 POUNDS (15 KG), INJURIES TO PERSONS CAN OCCUR.

CAUTION MAKE SURE YOU FULLY SUPPORT THE LUBE PUMP WHILE YOU INSTALL IT TO THE AGB. MISALIGNMENT BETWEEN CENTERING DIAMETERS CAN CAUSE DAMAGE TO THE LUBE AND SCAVENGE PUMP AND TO THE AGB.

(h) While you fully support the lube pump [1], do these steps:

1) Align the centering diameters of the lube pump [1] with the accessory gearbox [25].

2) Carefully move the lube pump [1] towards the accessory gearbox [25].

a) Slowly turn the accessory gearbox [25] motoring drive until the drive shaft of the lube pump [1] easily enters into the AGB drive shaft spline recess.

NOTE: When the o-ring of lube and scavenge pump centering pad is not visible any more, drive shaft splines are engaged into the AGB drive shaft spline recess.

(i) Make sure the locating pin [50] on the lube pump [1] is engaged in the slot [49] of the accessory gearbox [25].

(j) Hold the lube pump [1] to the accessory gearbox [25] and install the V-band clamp [52].

(k) Install the V-band clamp [52] with the retainer link at the 12:00 o'clock position (aft looking forward).

NOTE: To get better access, make sure the nut on the V-band clamp points in the downward direction.

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

(l) Tighten the nut on the V-band clamp [52] to 110-120 pound-inches (12.4-13.0 Newton-meters) (TASK 70-51-00-910-801-H01).

SUBTASK 79-21-03-420-002-H01

(2) Remove the protective covers from all the tube-hoses, the hoses, the fittings, and openings or ports in the lube pump [1].

SUBTASK 79-21-03-420-003-H01

CAUTION MAKE SURE THE ANTI-LEAK VALVE IS ATTACHED TO THE SUPPLY IN OIL TUBE-HOSE. THE ANTI-LEAK VALVE PREVENTS OIL FROM DRAINING OUT OF THE OIL TANK. IF YOU DO NOT, THE OIL WILL DRAIN FROM THE OIL TANK.

(3) Install the anti-leak valve [34] and the SUPPLY IN oil tube-hose [32] assembly on the lube pump [1]:

(a) Lubricate the gasket seal [35] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [35] in its position on the lube pump [1].

(c) Install the anti-leak valve [34] and the SUPPLY IN oil tube-hose [32] assembly on the lube pump [1].

CAUTION DO NOT USE THE LONG MOUNT BOLTS FOR THE ANTI-LEAK VALVE TO INSTALL THE OIL TUBE-HOSES TO THE LUBE PUMP. IF YOU DO, OIL LEAKAGE AND DAMAGE TO EQUIPMENT CAN OCCUR.

(d) Loosely install the four bolts [33] and the washers [37] that attach the anti-leak valve [34] and the SUPPLY IN oil tube-hose [32] assembly to the lube pump [1].

SUBTASK 79-21-03-420-004-H01

(4) Install the SCAVENGE OUT oil tube-hose [31] on the lube pump [1].

(a) Lubricate the gasket seal [36] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [36] in its position on the lube pump [1].

(c) Install the SCAVENGE OUT oil tube-hose [31] on the lube pump [1].

(d) Loosely install the bolts [30] that attach the SCAVENGE OUT oil tube-hose [31] to the lube pump [1].

SUBTASK 79-21-03-420-005-H01

(5) Install the AGB oil tube-hose [42] on the accessory gearbox [25] and the lube pump [1]:

(a) Lubricate the gasket seal [40] and the gasket seal [54] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [40] in its position on the lube pump [1].

(c) Put the gasket seal [54] in its position on the accessory gearbox [25].

(d) Install the AGB oil tube-hose [42] on the lube pump [1].

(e) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [43].

(f) Loosely install the four bolts [43] that attach the AGB oil tube-hose [42] to the lube pump [1].

(g) Install the AGB oil tube-hose [42] on the accessory gearbox [25].

(h) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [53].

(i) Loosely install the four bolts [53] that attach the AGB oil tube-hose [42] to the accessory gearbox [25].

(j) Install the clamp [56] and the bolt [55] to the AGB oil tube-hose [42].

1) Tighten the bolt [55] to 55-70 pound inches (6.21-7.91 Newton-meters).

SUBTASK 79-21-03-420-006-H01

(6) Install the TGB oil tube-hose [45] on the lube pump [1].

(a) Lubricate the gasket seal [41] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [41] in position on the lube pump [1].

(c) Install the TGB oil tube-hose [45] on the lube pump [1].

(d) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [44].

(e) Loosely install the four bolts [44] that attach the TGB oil tube-hose [45] to the lube pump [1].

SUBTASK 79-21-03-420-007-H01

(7) Install the A-sump oil tube-hose [47] on the lube pump [1]:

(a) Lubricate the gasket seal [39] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [39] in position on the lube pump [1].

(c) Install the A-sump oil tube-hose [47] on the lube pump [1].

(d) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [46].

(e) Loosely install the bolts [46] that attach the A-sump oil tube-hose [47] to the lube pump [1].

SUBTASK 79-21-03-420-010-H01

(8) Install the B-sump oil tube-hose [22] on the lube pump [1]:

(a) Lubricate the gasket seal [23] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [23] in position on the lube pump [1].

(c) Install the B-sump oil tube-hose [22] on the lube pump [1].

(d) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [20].

(e) Loosely install the bolts [20] that attach the B-sump oil tube-hose [22] to the lube pump [1].

SUBTASK 79-21-03-420-011-H01

(9) Install the C-sump oil tube-hose [21] on the lube pump [1]:

(a) Lubricate the gasket seal [27] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [27] in position on the lube pump [1].

(c) Install the C-sump oil tube-hose [21] on the lube pump [1].

(d) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [20]

(e) Loosely install the bolts [20] that attach the C-sump oil tube-hose [21] to the lube pump [1].

SUBTASK 79-21-03-420-012-H01

(10) Install the SUPPLY OUT oil tube-hose [28] on the lube pump [1] (Figure 401):

(a) Lubricate the new gasket seal [29] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [29] in position in the lube pump [1].

(c) Install the SUPPLY OUT oil tube-hose [28] on the lube pump [1].

(d) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [20].

(e) Loosely install the bolts [20] that attach the SUPPLY OUT oil tube-hose [28] to the lube pump [1].

SUBTASK 79-21-03-420-013-H01

(11) If the drain plug [11] is removed from the filter cover [9], do these steps:

(a) Lubricate a new preformed packing [10] with clean Acheson GP460 compound, D50043 [C02-058].

(b) Install the new preformed packing [10] on the drain plug [11].

CAUTION MAKE SURE THE PREFORMED PACKING GOES INTO THE RECESS OF THE FILTER COVER. IF THE PREFORMED PACKING IS DAMAGED, OIL LEAKAGE CAN OCCUR.

(c) Install the drain plug [11] on the filter cover [9].

NOTE: The drain plug threads into the filter element.

(d) Tighten the drain plug [11] to 126.4-139.7 pound-inches (14.3-15.8 Newton-meters).

SUBTASK 79-21-03-420-014-H01

CAUTION

MAKE SURE TO TIGHTEN THE BOLTS THAT ATTACH THE SUPPLY OUT OIL TUBE-HOSE TO THE LUBE PUMP. IF YOU DO NOT, OIL LEAKAGE CAN OCCUR.

(12) Tighten the four bolts [20] that attach the SUPPLY OUT oil tube-hose [28] to the lube pump to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-03-420-020-H01

CAUTION

MAKE SURE TO TIGHTEN THE BOLTS THAT ATTACH THE C-SUMP OIL TUBE-HOSES TO THE LUBE PUMP. IF YOU DO NOT, OIL LEAKAGE CAN OCCUR..

(13) Tighten the four bolt [20] that attach the C-sump oil tube-hose [21] to the lube pump to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-03-420-015-H01

CAUTION

MAKE SURE TO TIGHTEN THE BOLTS THAT ATTACH THE B-SUMP OIL TUBE-HOSES TO THE LUBE PUMP. IF YOU DO NOT, OIL LEAKAGE CAN OCCUR.

(14) Tighten the six bolts [20] that attach the B-sump oil tube-hose [22] to the lube pump to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-03-420-016-H01

CAUTION

MAKE SURE TO TIGHTEN THE BOLTS THAT ATTACH THE AGB, TGB, AND A-SUMP OILTUBE-HOSES TO THE LUBE PUMP. IF YOU DO NOT, OIL LEAKAGE CAN OCCUR.

(15) Tighten the bolts [43], the bolts [44], and the bolts [46] that attach the AGB oil tube-hose [42], the TGB oil tube-hose [45], and the A-sump oil tube-hose [47] to the lube pump to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-03-420-021-H01

CAUTION

MAKE SURE YOU TIGHTEN THE BOLTS THAT ATTACH THE AGB OIL TUBE-HOSE TO THE AGB. IF YOU DO NOT, OIL LEAKAGE CAN OCCUR.

(16) Tighten the bolts [53] that attach the AGB oil tube-hose [42] to the accessory gearbox [25] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-03-420-017-H01

CAUTION MAKE SURE TO TIGHTEN THE BOLTS THAT ATTACH THE ANTI-LEAK VALVE AND THE SUPPLY IN OIL TUBE-HOSE ASSEMBLY TO THE LUBE PUMP. IF YOU DO NOT, OIL LEAKAGE CAN OCCUR.

(17) Tighten the four bolts [33] that attach the anti-leak valve [34] and the SUPPLY IN oil tube-hose [32] assembly to the lube pump to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-03-420-018-H01

CAUTION MAKE SURE TO TIGHTEN THE BOLTS THAT ATTACH THE SCAVENGE OUT ANTI-LEAK TUBE-HOSE TO THE LUBE PUMP. IF YOU DO NOT, OIL LEAKAGE CAN OCCUR.

(18) Tighten the four bolts [30] that attach the SCAVENGE OUT oil tube-hose [31] to the lube pump to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-03-420-019-H01

(19) Install the DP sensor [4]:

(a) Remove the protective cover from the port on the lube pump [1].

(b) Lubricate the gasket seal [5] with clean oil, D00552 [C02-019].

(c) Put the gasket seal [5] in its position on the DP sensor [4].

(d) Install the DP sensor [4] and the insulation [12] on the lube pump [1].

(e) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [3].

(f) Install the three bolts [3] that attach the DP sensor [4] and insulation [12] to the lube pump [1].

1) Tighten the bolts [3] to 110-125 pound-inches (12.4-14.1 Newton-meters).

SUBTASK 79-21-03-410-001-H01

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

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

(20) Use teflon-jawed pliers, STD-664 to connect the electrical connector [2] (TASK 70-00-01-400-807-H01):

(a) Remove the protective covers from the electrical receptacle on the DP sensor [4] and the electrical connector [2].

(b) Connect the electrical connector [2] to the DP sensor [4].

1) Tighten the electrical connector [2].

SUBTASK 79-21-03-410-003-H01

(21) Remove the manual motoring tool and re-install the motoring pad cover (TASK 72-00-00-980-801-H01)

SUBTASK 79-21-03-612-001-H01

(22) Do this task: Engine Oil Replenishing, TASK 12-13-01-130-803-002.

I. Put the Airplane Back to its Usual Condition.

SUBTASK 79-21-03-410-002-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

J. Lube and Scavenge Pump Installation Test

SUBTASK 79-21-03-710-001-H01

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

——— END OF TASK ———

SCAVENGE OIL INLET SCREENS - MAINTENANCE PRACTICES

1. General

A. This procedure contains scheduled maintenance task data.

B. There are five scavenge oil inlet screens (referred to as inlet screens) installed in the lube and scavenge pump.

C. There is a magnetic chip detector inside the inlet screen.

D. This procedure has four tasks:

(1) A removal of the scavenge oil inlet screens

(2) An inspection of the scavenge oil inlet screens

(3) A cleaning of the scavenge oil inlet screens.

(4) An installation of the scavenge oil inlet screens

TASK 79-21-04-000-801-H01

2. Scavenge Oil Inlet Screens Removal

(Figure 201 or Figure 202, and Figure 201 or Figure 202)

A. General

(1) The scavenge oil inlet screen (referred to as inlet screen) is installed in the lube and scavenge pump. The lube and scavenge pump is located on the forward face of the accessory gearbox at approximately the 5:00 o'clock position.

(2) You must open the right thrust reverser to get access to the inlet screens.

B. References

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

C. Tools/Equipment

Reference	Description
STD-203	Container - Oil Resistant, 1 U.S.-Gal (3.8 l)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Inlet screen	79-21-03-03-075	ARO ALL
2	Magnetic plug	79-21-03-03-090	ARO ALL
3	Preformed packing	79-21-03-03-100	ARO ALL
4	Enerseal joint	79-21-03-03-105	ARO ALL

E. Access Panels

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

(Continued)

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

F. Prepare for the Scavenge Oil Inlet Screen Removal

SUBTASK 79-21-04-010-002-H01

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

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

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

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

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

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

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

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

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

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

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

G. Scavenge Oil Inlet Screen Removal

SUBTASK 79-21-04-420-001-H01

(1) Remove the inlet screen [1].

(a) Put a 1 U.S.-gal (3.81 l) oil resistant container, STD-203 in a position below the lube and scavenge pump.

(b) Remove the inlet screen [1] from the lube and scavenge pump and permit the oil to drain into the 1 U.S.-gal (3.81 l) oil resistant container, STD-203.

NOTE: When you remove or drain the lube and scavenge pump do not lose any debris in the inlet scavenge screen or on the magnetic plug. Loss of debris will affect the accuracy of the troubleshooting.

(c) Install a protective cover on the port in the lube and scavenge pump for the inlet screen [1].

(d) Remove and discard the preformed packing [3] from the inlet screen [1].

CAUTION DO NOT REMOVE THE ENERSEAL JOINT UNLESS THERE IS A DAMAGE. IF THE NEW SEAL IS INSTALLED, MAKE SURE THAT YOU INSTALL CORRECTLY OR DAMAGE TO THE NEW SEAL CAN OCCUR.

(e) Do a visual check of the enerseal joint [4] for damage.

1) Replace the enerseal joint [4] only if you see damage.

SUBTASK 79-21-04-420-002-H01

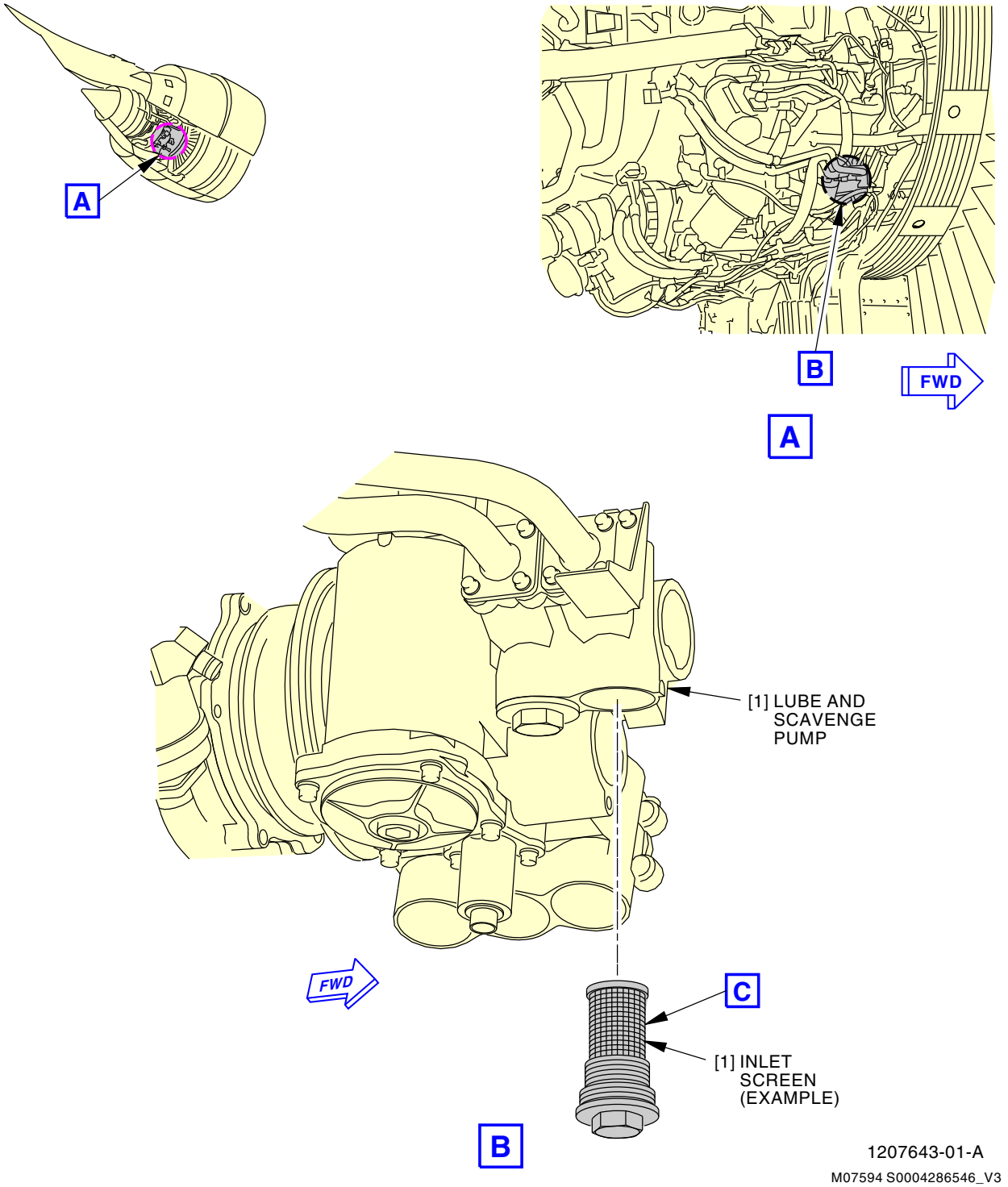
(2) Remove the magnetic plug [2] from the inlet screen [1].

(a) Do a visual check of the magnetic plug [2] for unwanted material.

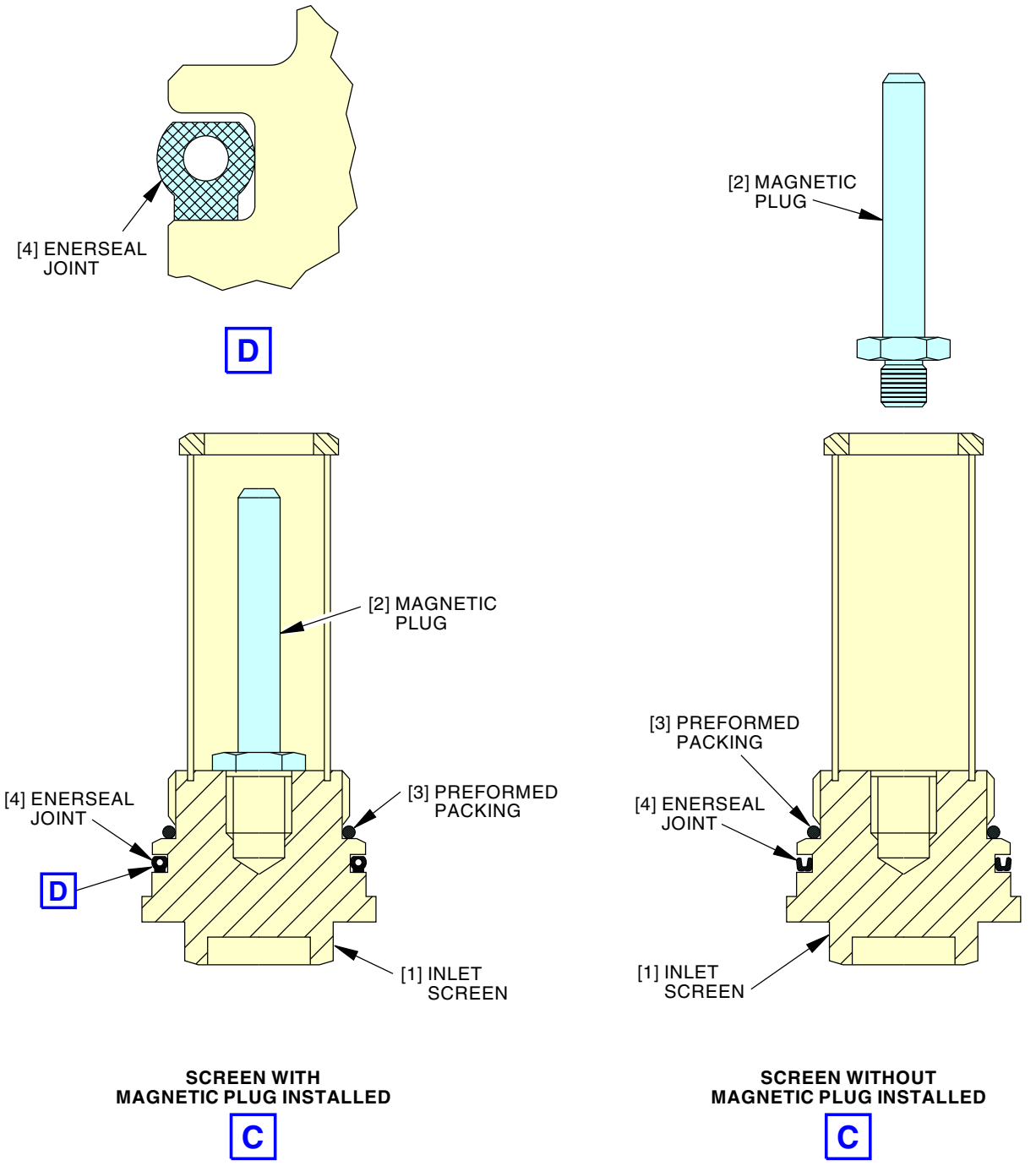
1) If you see unwanted material on the magnetic plug [2], remove the material and do the inspection (TASK 79-21-04-210-801-H01).

2) If you do not see unwanted material on the magnetic plug [2], install the magnetic plug [2] (TASK 79-21-04-400-801-H01).

——— END OF TASK ———



Scavenge Inlet Screen Installation
Figure 201/79-21-04-990-801-H01 (Sheet 1 of 2)



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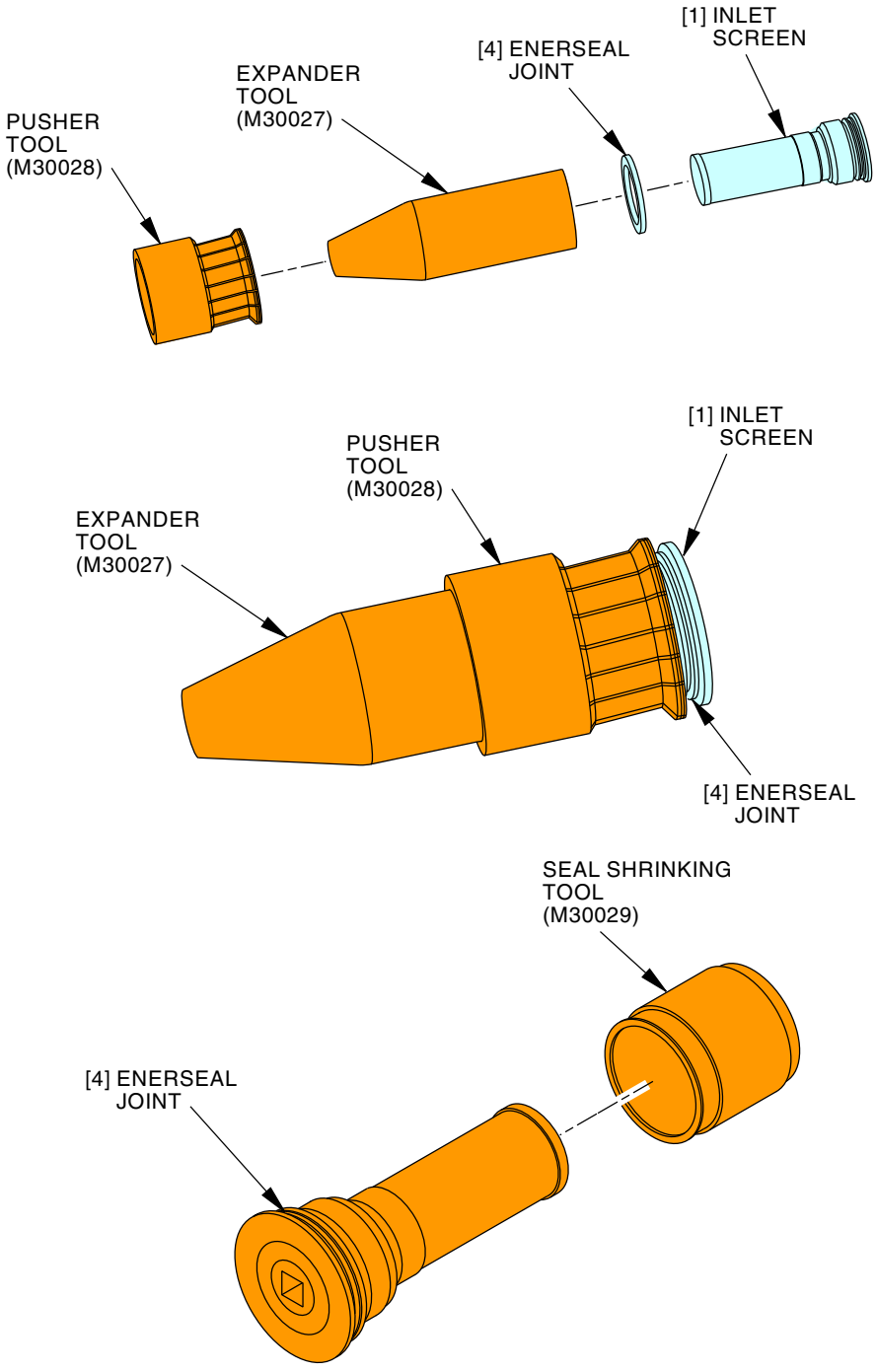
Scavenge Inlet Screen Installation
Figure 201/79-21-04-990-801-H01 (Sheet 2 of 2)



Seal Installation Tools
Figure 202/79-21-04-990-802-H01

TASK 79-21-04-210-801-H01

3. Scavenge Oil Inlet Screens Inspection

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) Do the scavenge oil inlet screens inspection procedure to look for unwanted material in the oil system.

(2) There are five separate scavenge oil inlet screens installed in the lube and scavenge pump. You must inspect all five inlet screens.

B. References

Reference	Title
79-00-00-200-805-H01	Engine Oil System (Lube and Scavenge Pump Screens and Magnetic Plugs) Inspection (P/B 601)

C. Scavenge Oil Inlet Screen Inspection

SUBTASK 79-21-04-210-001-H01

(1) Do the inspection for each of the five separate scavenge oil inlet screens.

(a) Do this task: Scavenge Oil Inlet Screens Removal, TASK 79-21-04-000-801-H01.

(b) Do a visual check of the inlet screen and the magnetic plug for unwanted material.

1) If you see unwanted material, do these steps:

a) Write down the type and quantity on a record sheet.

b) Do this task: Engine Oil System (Lube and Scavenge Pump Screens and Magnetic Plugs) Inspection, TASK 79-00-00-200-805-H01.

c) Do this task: Scavenge Oil Inlet Screen Cleaning, TASK 79-21-04-100-801-H01.

(c) Do a visual check of the inlet screen.

1) If you see damage, replace the inlet screen. These are the tasks:

Scavenge Oil Inlet Screens Removal, TASK 79-21-04-000-801-H01 and

Scavenge Oil Inlet Screens Installation, TASK 79-21-04-400-801-H01.

(d) Do this task: Scavenge Oil Inlet Screens Installation, TASK 79-21-04-400-801-H01.

——— END OF TASK ———

TASK 79-21-04-100-801-H01

4. Scavenge Oil Inlet Screen Cleaning

A. Tools/Equipment

Reference	Description
STD-128	Brush - Paint

B. Consumable Materials

Reference	Description	Specification
B00074	Solvent - Degreasing	MIL-PRF-680 (Supersedes P-D-680)

C. Scavenge Oil Inlet Screen Cleaning

SUBTASK 79-21-04-020-001-H01

(1) If it is necessary, do this task: Scavenge Oil Inlet Screens Removal, TASK 79-21-04-000-801-H01.

SUBTASK 79-21-04-110-001-H01

WARNING DO NOT GET SOLVENT IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE SOLVENT. PUT ON A PROTECTIVE SPLASH GOGGLE AND GLOVES WHEN YOU USE THE SOLVENT. KEEP THE SOLVENT AWAY FROM SPARKS, FLAME, AND HEAT. THE SOLVENT IS POISONOUS AND FLAMMABLE LIQUID WHICH CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

CAUTION MAKE SURE YOU DO NOT DAMAGE THE ENERSEAL JOINT ON THE INLET SCREEN HOUSING. DAMAGE TO THE SEAL CAN CAUSE OIL LEAKAGE.

(2) Clean the inlet screen(s) in solvent, B00074 with a paint brush, STD-128 until you do not see unwanted material.

NOTE: Make sure that unwanted material cleaned from the scavenge inlet screen is kept in case further analysis is necessary.

(a) Permit the inlet screen(s) to dry.

SUBTASK 79-21-04-110-002-H01

(3) Clean the magnetic plug(s) in solvent, B00074 with a paint brush, STD-128 until you do not see unwanted material.

(a) Permit the magnetic plug(s) to dry.

SUBTASK 79-21-04-420-003-H01

(4) Do this task: Scavenge Oil Inlet Screens Installation, TASK 79-21-04-400-801-H01.

——— END OF TASK ———

TASK 79-21-04-400-801-H01

5. Scavenge Oil Inlet Screens Installation

(Figure 201 or Figure 202)

A. General

(1) This task is the installation procedure of the scavenge oil inlet screen (referred to as inlet screen) to the lube and scavenge pump.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-7747	Tool - Installation, Enerseal, GE90-115B Part #: 40KIT6002 Supplier: B1316

D. Consumable Materials

Reference	Description	Specification
D00504	Grease - Petrolatum	VV-P-236
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Inlet screen	79-21-03-03-075	ARO ALL
2	Magnetic plug	79-21-03-03-090	ARO ALL
3	Preformed packing	79-21-03-03-100	ARO ALL
4	Enerseal joint	79-21-03-03-105	ARO ALL

F. Access Panels

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

G. Scavenge Oil Inlet Screen Installation

SUBTASK 79-21-04-420-004-H01

(1) If it is necessary, install the magnetic plug [2] to the inlet screen [1].

(a) Tighten the magnetic plug [2] to 120-140 pound-inches (13.6-15.8 Newton-meters).

SUBTASK 79-21-04-420-005-H01

(2) Install the inlet screen [1].

CAUTION IF THE ENERSEAL JOINT IS TO BE INSTALLED, MAKE SURE YOU INSTALL IT CORRECTLY OR YOU CAN CAUSE DAMAGE TO THE ENERSEAL JOINT.

(a) If there is damage on the enerseal joint [4], do these steps to install the new enerseal joint [4].

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

1) Lubricate the enerseal joint [4] and the expander tool with grease, D00504.

NOTE: The enerseal installation tool, COM-7747 kit includes the expander, the pusher, the seal shrinking tools and the packing.

2) Install the expander tool on the inlet screen [1].

CAUTION MAKE SURE THAT THE ENERSEAL JOINT IS CORRECTLY ALIGNED DURING THE INSTALLATION. IF IT IS NOT CORRECTLY ALIGNED, DAMAGE TO THE ENERSEAL JOINT AND LEAKS FROM THE SCREENS CAN OCCUR.

3) Install the enerseal joint [4] on the conical part of the expander tool.
4) Put the pusher tool on the expander tool.
5) Use the pusher tool to move the enerseal joint [4] along the expander tool and in to the groove of the inlet screen [1].
6) Remove the pusher tool from the expander tool.
7) Remove the expander tool from the inlet screen [1].

   NOTE: The expander tool and pusher tool can be installed on the inlet screen [1] and removed from the inlet screen [1] together.

8) Lightly coat the seal shrinking tool with grease, D00504.
9) Secure the enerseal as follows:
   a) Push the seal shrinking tool onto the inlet screen [1] with the bigger chamfer end and then slide it over the installed enerseal joint [4].
   b) Remove the seal shrinking tool from the inlet screen [1] and repeat the above operation with the other side of the tool, the smaller chamfer.
10) Remove the shrinking tool.
11) Do the above steps again for the remaining inlet screens [1].

(b) Lubricate the enerseal joint [4] with clean oil, D00552 [C02-019].

(c) Install the new preformed packing [3] as follows:
1) Lightly coat the preformed packing [3] with clean grease, D00504.
2) Use the enerseal installation tool, COM-7747 to install the preformed packing [3] on the grooves of the five inlet screens [1].

(d) Remove the protective cover from the port in the lube and scavenge pump for the inlet screen [1].

(e) Put the inlet screen [1] into the lube and scavenge pump.
1) Tighten the inlet screens [1] to 190-210 pound-inches (21.5-23.7 Newton-meters).

SUBTASK 79-21-04-612-001-H01

(3) Do this task: Engine Oil Replenishing, TASK 12-13-01-130-803-002.

H. Put the airplane back to its usual condition.

SUBTASK 79-21-04-410-002-H01

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

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:
(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

I. Scavenge Oil Inlet Screens Installation Test

SUBTASK 79-21-04-790-002-H01

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

——— END OF TASK ———

OIL FILTER ELEMENT - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the oil filter element

(2) An installation of the oil filter element.

TASK 79-21-07-000-801-H01

2. Oil Filter Element Removal

A. General

(1) This task is the removal procedure for the oil filter element.

(2) You must open the right thrust reverser to get access to the oil filter element.

B. References

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

C. Tools/Equipment

Reference	Description
STD-205	Container - Oil Resistant, 5 U.S.-Gal (19 l)

D. Consumable Materials

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

G. Prepare for the Oil Filter Element Removal

SUBTASK 79-21-07-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

H. Oil Filter Element Removal

SUBTASK 79-21-07-020-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

(1) Put a clean 5 U.S.-gal (19 l) oil resistant container, STD-205 below the drain plug [6] (Figure 401).

SUBTASK 79-21-07-020-007-H01

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

(2) Remove the drain plug [6], and let the oil drain in the 5 U.S.-gal (19 l) oil resistant container, STD-205.

NOTE: Do not let oil get on the engine or other components. Immediately remove the spilled oil with a cotton wiper, G00034 when it falls on the engine or other components.

SUBTASK 79-21-07-020-002-H01

(3) Remove and discard the preformed packing [7] located on the drain plug [6] shoulder.

SUBTASK 79-21-07-020-003-H01

(4) Remove the four bolts [5] and four nuts [9] that attach the filter cover [4] to the lube and scavenge pump [1].

(a) Remove the filter cover [4].

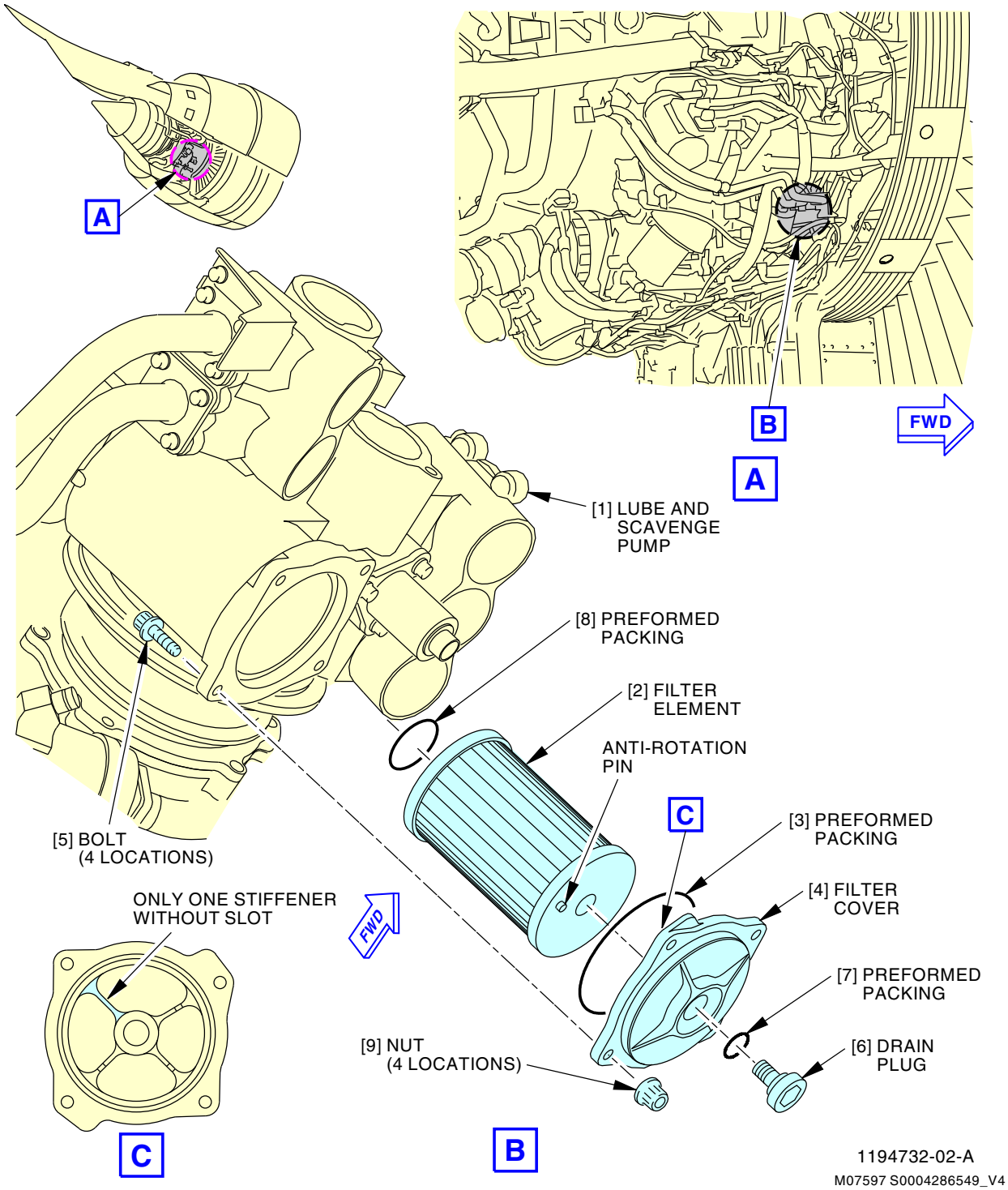
SUBTASK 79-21-07-020-005-H01

(5) Remove and discard the preformed packing [3] from the filter cover [4].

SUBTASK 79-21-07-020-006-H01

(6) Remove and discard the filter element [2] and the preformed packing [8] from the lube and scavenge pump [1] housing.

——— END OF TASK ———



Filter Installation
Figure 401/79-21-07-990-804-H01

TASK 79-21-07-400-801-H01

3. Oil Filter Element Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the oil filter element.

(2) You must do the tests listed in the Power Plant Test Reference Table after you install the oil filter element.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)
79-00-00-200-804-H01	Engine Oil System (DMS) (Scheduled Maintenance Task) Inspection (P/B 601)

C. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Filter element	79-21-03-03-055	ARO ALL
3	Preformed packing	79-21-03-03-050	ARO ALL
7	Preformed packing	79-21-03-03-025	ARO ALL
8	Preformed packing	79-21-03-03-060	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

G. Oil Filter Element Installation

SUBTASK 79-21-07-640-001-H01

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

(1) Lubricate a new preformed packing [8] with clean oil, D00552 [C02-019].

SUBTASK 79-21-07-420-001-H01

(2) Install the preformed packing [8] in the groove of a new filter element [2].

SUBTASK 79-21-07-640-003-H01

(3) Lubricate a new preformed packing [3] with oil, D00552 [C02-019].

SUBTASK 79-21-07-420-003-H01

(4) Make sure that the groove on the filter cover [4] is clean.

SUBTASK 79-21-07-410-002-H01

(5) Install the new preformed packing [3] in the groove on the filter cover [4].

SUBTASK 79-21-07-640-002-H01

(6) Lubricate a new preformed packing [7] with clean oil, D00552 [C02-019].

SUBTASK 79-21-07-420-004-H01

(7) Install the preformed packing [7] on the shoulder of the drain plug [6].

SUBTASK 79-21-07-420-005-H01

CAUTION FAILURE TO INSTALL THE PREFORMED PACKING CAN CAUSE MORE THAN THE LIMIT OF OIL LOSS DURING ENGINE OPERATION, AND POSSIBLE ENGINE FAILURE.

(8) Install the filter element [2] into the lube and scavenge pump [1] housing.

SUBTASK 79-21-07-640-004-H01

(9) Lubricate the four bolts [5] with Acheson GP460 compound, D50043 [C02-058].

SUBTASK 79-21-07-420-007-H01

CAUTION WHEN YOU INSTALL THE FITER COVER, MAKE SURE THE ANTI-ROTATION PIN OF THE OIL FILTER ELEMENT IS NOT SIT ON TOP THE FILTER COVER STIFFENER. IF THE FILTER COVER IS TIGHTENED WITH THE ANTI-ROTATION PIN OF THE OIL FILTER ELEMENT SIT ON TOP THE FILTER COVER STIFFENER, THE FILTER COVER CAN LEAK OIL AND CAUSE POSSIBLE ENGINE FAILURE.

(10) Install the filter cover [4] on the lube and scavenge pump [1] housing.

(a) Align the filter cover [4] so the anti-rotation pin is not sit on top the filter cover stiffener.

(b) Install the four bolts [5] and the four nuts [9] that attach the filter cover [4] to the lube and scavenge pump [1] housing.

(c) Tighten the four nuts [9] to 57.0-67.0 pound-inches (6.4-7.6 Newton-meters) in lieu of bolts [5].

SUBTASK 79-21-07-420-006-H01

CAUTION

FAILURE TO INSTALL THE PREFORMED PACKING CAN CAUSE MORE THAN THE LIMIT OF OIL LOSS DURING ENGINE OPERATION, AND POSSIBLE ENGINE FAILURE.

(11) Install the drain plug [6] to the filter cover [4].

(a) Tighten the drain plug [6] to 126.4 in-lb (14.3 N·m) - 139.7 in-lb (15.8 N·m).

SUBTASK 79-21-07-612-002-H01

(12) Do this task: Engine Oil Replenishing, TASK 12-13-01-130-803-002.

SUBTASK 79-21-07-210-002-H01

(13) Do this task: Engine Oil System (DMS) (Scheduled Maintenance Task) Inspection, TASK 79-00-00-200-804-H01.

H. Put the Airplane Back to its Usual Condition.

SUBTASK 79-21-07-410-001-H01

WARNING

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

I. Oil Filter Element Installation Test

SUBTASK 79-21-07-210-001-H00

(1) Do this task: Engine Oil System (DMS) (Scheduled Maintenance Task) Inspection, TASK 79-00-00-200-804-H01.

SUBTASK 79-21-07-710-001-H01

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

END OF TASK

ANTI-LEAK VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the anti-leak valve

(2) An installation of the anti-leak valve.

TASK 79-21-08-000-801-H01

2. Anti-Leak Valve Removal

A. General

(1) This task is the removal procedure for the anti-leak valve.

(2) The anti-leak valve is on the oil inlet port of the lube and scavenge pump. The lube and scavenge pump is on the forward side of the accessory gearbox at approximately the 6:00 o'clock position.

(3) You must open the left and right thrust reversers to get access to the anti-leak valve.

B. References

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

C. Tools/Equipment

Reference	Description
STD-3938	Container - Oil Resistant, 10 gallon (38 l)

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

(Continued)

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

G. Prepare for the Anti-Leak Valve Removal

SUBTASK 79-21-08-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

H. Anti-Leak Valve Removal

SUBTASK 79-21-08-680-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

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

(WARNING PRECEDES)

CAUTION DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

(1) Drain the oil, D00552 [C02-019] from the engine oil system:

CAUTION MAKE SURE THAT YOU CLEAN THE OIL TANK SCUPPER TO REMOVE UNWANTED MATERIAL THAT MAY GET INTO THE OIL TANK. DAMAGE TO THE ENGINE CAN OCCUR.

(a) Clean the oil tank scupper with the cotton wiper, G00034 before you remove the oil tank filler cap.

(b) Open the oil tank filler cap.

(c) Put the 10 gallon (38 l) oil resistant container, STD-3938 in position below the fan case.

(d) Remove the cap [3] from the drain valve (self-closing) [2] in the oil tank supply tube [1].

(e) Permit the oil, D00552 [C02-019] to drain from the oil tank supply tube [1] into the 10 gallon (38 l) oil resistant container, STD-3938.

NOTE: You will drain all the oil from the oil tank when you drain the oil from the oil tank supply tube. There are approximately 8 gallons of oil.

(f) Install the cap [3] on the drain valve (self-closing) [2].

(g) Close the oil tank filler cap.

SUBTASK 79-21-08-010-002-H01

(2) Remove the supply-in tube-hose [7] from the anti-leak valve [11]:

(a) Remove the four bolts [8] that attach the supply-in tube-hose [7] to the anti-leak valve [11].

(b) Remove the gasket seal [9] from the supply-in tube-hose [7].

(c) Examine the gasket seal [9] for damage. If you see damage, discard the gasket seal.

(d) Install a protective cover on the supply-in tube-hose [7].

SUBTASK 79-21-08-020-001-H01

(3) Remove the anti-leak valve [11] from the lube and scavenge pump [4] (Figure 401):

(a) Remove the four bolts [10] and four washers [13] that attach the anti-leak valve [11] to the lube and scavenge pump [4].

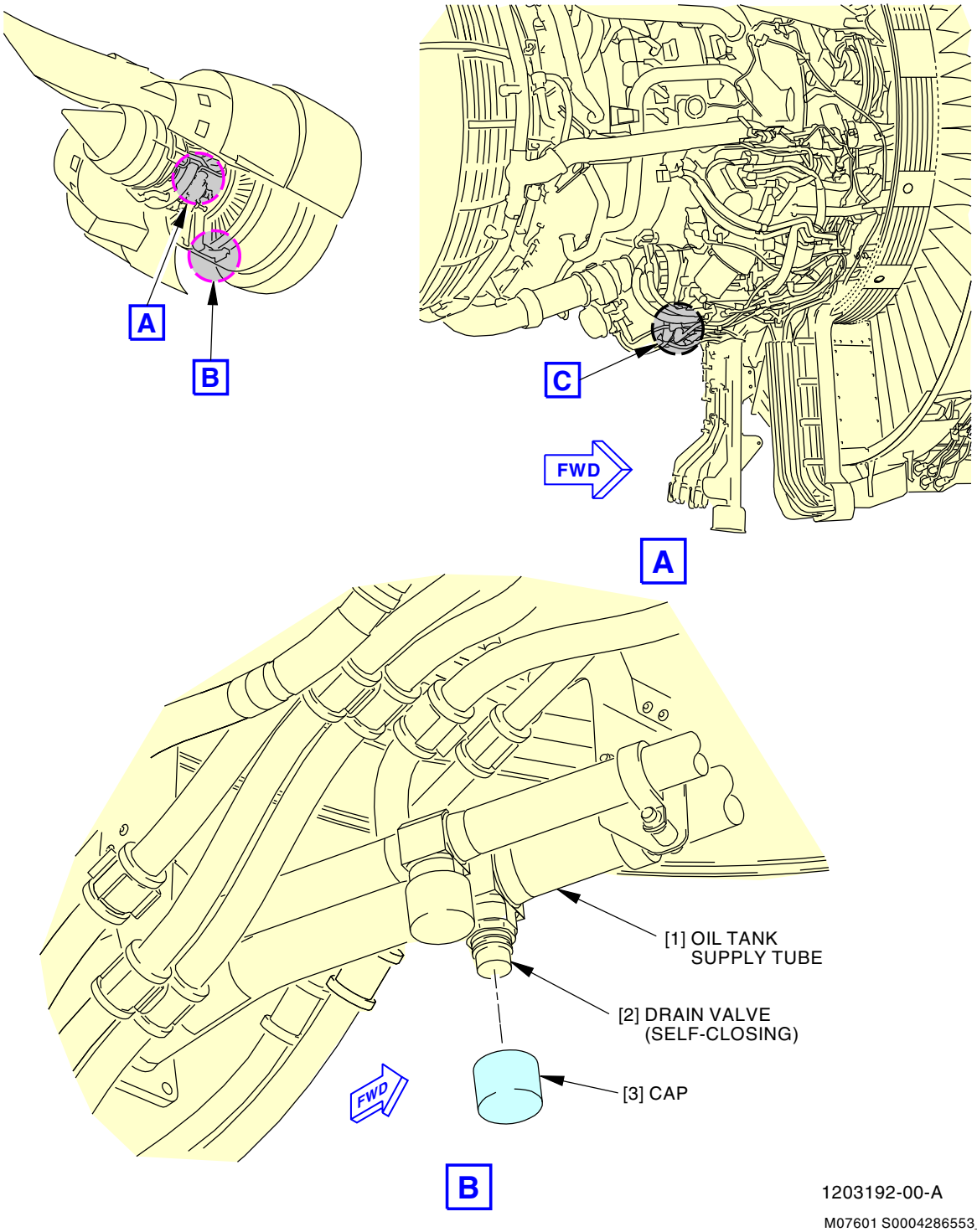
(b) Move the anti-leak valve [11] away from the lube and scavenge pump [4].

(c) Examine the area of the gasket seal [12] that you see for damage.

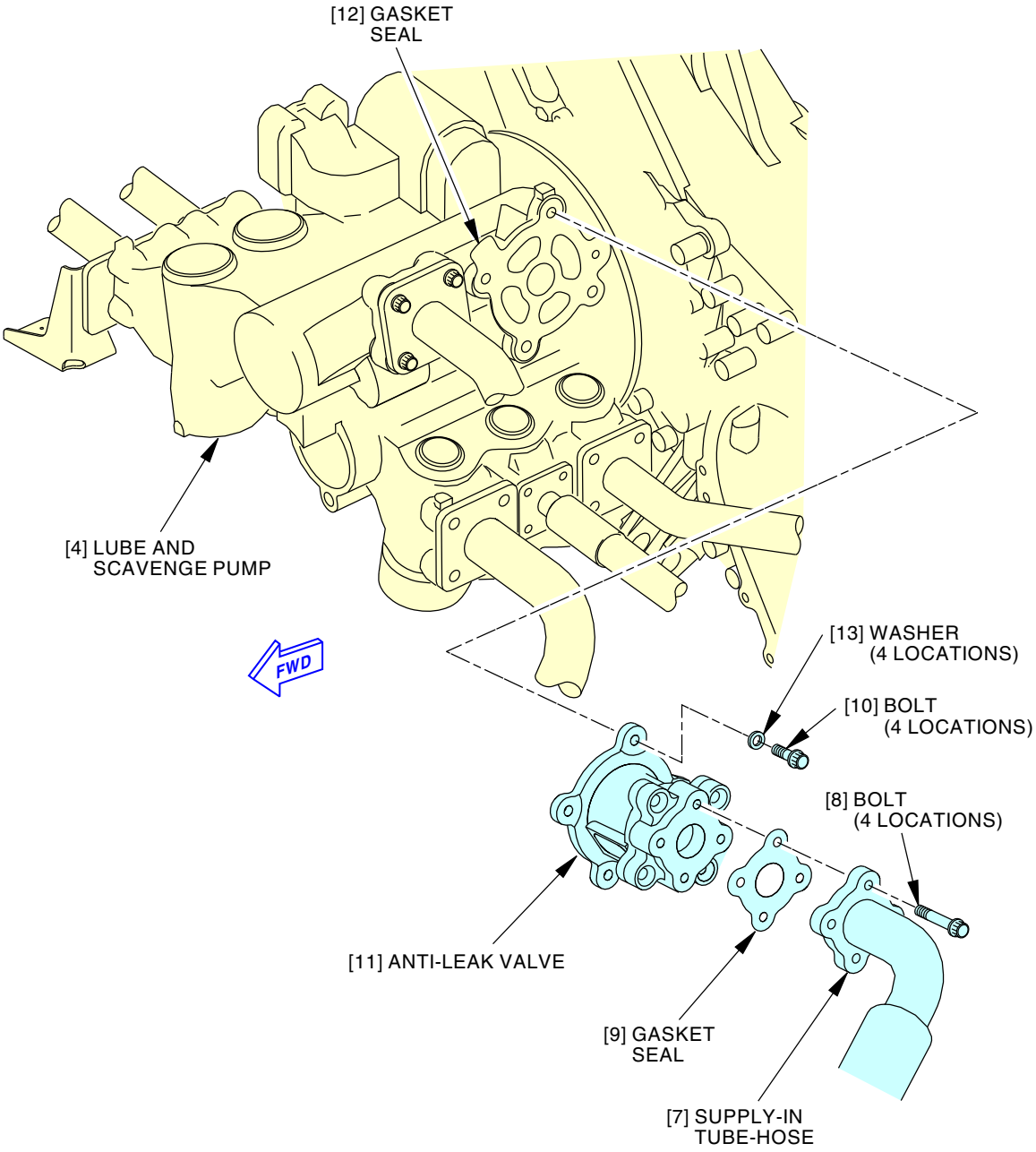
1) If you see damage, replace the gasket seal [12].

(d) Install protective covers in the ports of the lube and scavenge pump [4], and the ports of the anti-leak valve [11].

END OF TASK



Anti-Leak Valve Installation
Figure 401/79-21-08-990-801-H01 (Sheet 1 of 2)



Anti-Leak Valve Installation
Figure 401/79-21-08-990-801-H01 (Sheet 2 of 2)

TASK 79-21-08-400-801-H01

3. Anti-Leak Valve Installation

A. General

(1) This task is the installation procedure for the anti-leak valve.

(2) You must do the tests that are listed in the power plant test reference table after you install the anti-leak valve to the lube pump.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
9	Gasket seal	79-21-51-31-110	ARO ALL
		79-21-51-31-255	ARO ALL
11	Anti-leak valve	79-21-08-03-015	ARO ALL
12	Gasket seal	79-21-08-03-020	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

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

G. Anti-Leak Valve Installation

SUBTASK 79-21-08-420-001-H01

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

(1) Remove the protective covers from the lube and scavenge pump [4], anti-leak valve [11], and supply-in tube-hose [7].

SUBTASK 79-21-08-420-002-H01

(2) Install the anti-leak valve [11](Figure 401):

(a) Lubricate the gasket seal [12] with clean oil, D00552 [C02-019].

(b) Put the gasket seal [12] to the lube and scavenge pump [4].

(c) Put Acheson GP460 compound, D50043 [C02-058] on the threads of the bolts [10].

(d) Put the anti-leak valve [11] in its position on the lube and scavenge pump [4].

(e) Install the washers [13] and the bolts [10] that attach the anti-leak valve [11] to the lube and scavenge pump [4].

1) Tighten the bolts [10] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-08-420-004-H01

(3) Install the supply-in tube-hose [7]:

(a) Lubricate the gasket seal [9] with clean oil, D00552 [C02-019].

(b) Install the gasket seal [9] to the anti-leak valve [11].

(c) Put the supply-in tube-hose [7] in its position on the anti-leak valve [11].

(d) Install the bolts [8] that attach the supply-in tube-hose [7] to the anti-leak valve [11].

1) Tighten the bolts [8] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-08-612-001-H01

(4) Do this task: Engine Oil Replenishing, TASK 12-13-01-130-803-002.

H. Put the Airplane Back to its Usual Condition

SUBTASK 79-21-08-410-001-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

I. Anti-Leak Valve Installation Test

SUBTASK 79-21-08-710-001-H01

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

——— END OF TASK ———

DEBRIS MONITORING SYSTEM (DMS) SENSOR - REMOVAL/INSTALLATION

1. General

A. The debris monitoring system (DMS) sensor consists of a DMS sensor that is mounted on the DMS air/oil separator.

B. This procedure has two tasks:

(1) A removal of the debris monitoring system (DMS) sensor

(2) An installation of the debris monitoring system (DMS) sensor.

TASK 79-21-12-000-801-H01

2. Debris Monitoring System (DMS) Sensor Removal

A. General

(1) This task is the removal procedure for the debris monitoring system (DMS) sensor (referred to as the DMS sensor).

(2) The debris monitoring system (DMS) sensor is mounted on the DMS air/oil separator.

(3) You must open the oil tank access door to remove the DMS sensor from the DMS air/oil separator.

B. References

Reference	Title
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)

C. Tools/Equipment

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

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine
423BL	Oil Tank Access Door, Right Engine

F. Prepare for the DMS Sensor Removal

SUBTASK 79-21-12-010-001-H01

(1) Open the oil tank access door on the applicable left fan cowl panel.

(a) Open these access panels:

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine
423BL	Oil Tank Access Door, Right Engine

G. DMS Sensor Removal

SUBTASK 79-21-12-020-003-H01

(1) Do the steps that follow to remove the deaerator fire blanket [6]:

(a) Remove the safety needle from the pin at holes 1 thru 6.

(b) Remove the deaerator fire blanket [6]

SUBTASK 79-21-12-020-001-H01

WARNING	DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.
CAUTION	USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.
CAUTION	MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

(2) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [2] from the DMS sensor [3] (TASK 70-00-01-400-807-H01).

(a) Install protective covers on the electrical receptacle on the DMS sensor [3] and the electrical connector [2].

SUBTASK 79-21-12-020-002-H01

WARNING	DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.
WARNING	DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.
WARNING	DO NOT LET OIL STAY ON YOUR SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE OIL THROUGH YOUR SKIN.
CAUTION	DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

(3) Remove the DMS sensor [3] (Figure 401).

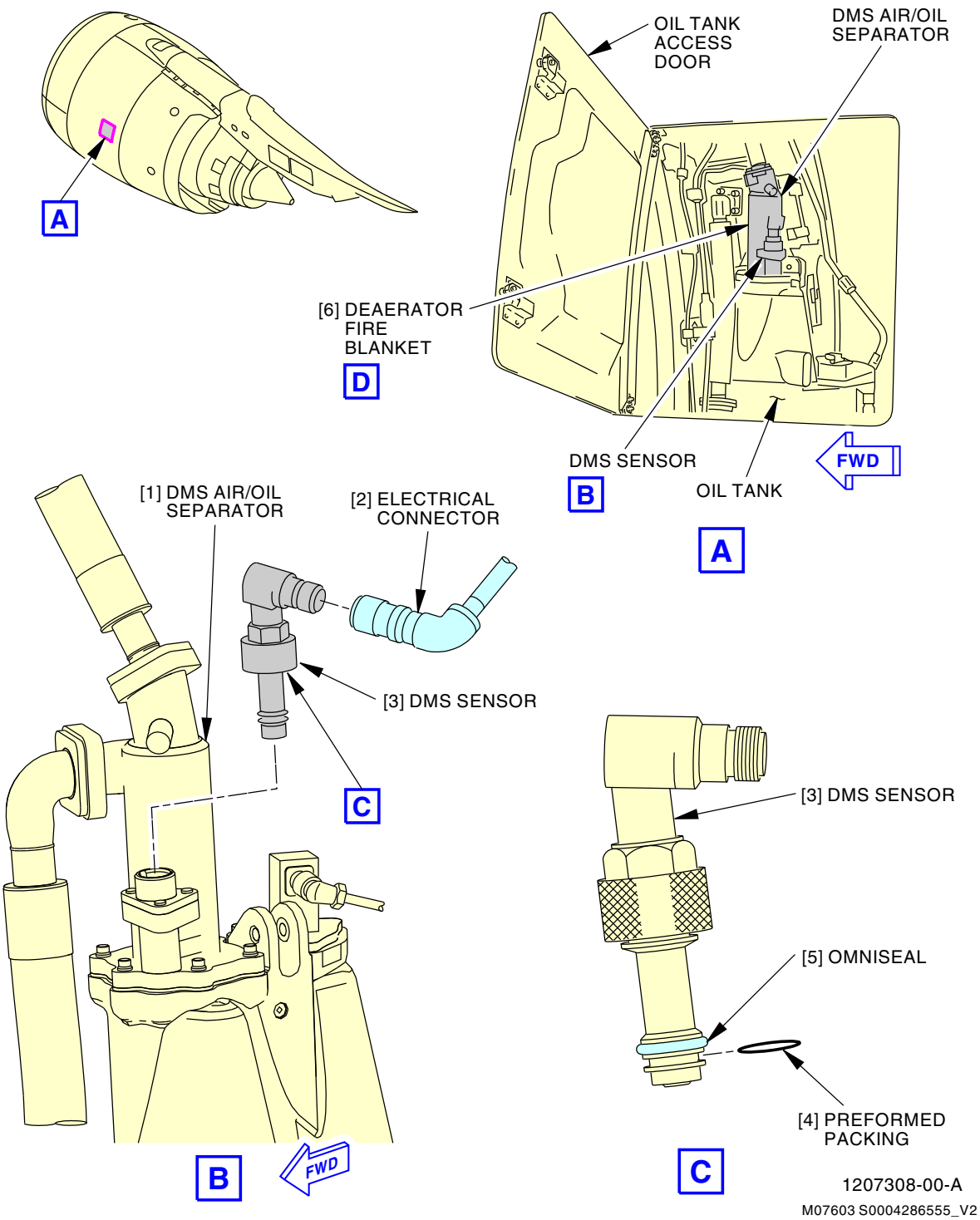
(a) Loosen the threaded collar and remove the DMS sensor [3] from the DMS air/oil separator [1].

(b) Remove and discard the preformed packing [4] that is below the Omniseal [5].

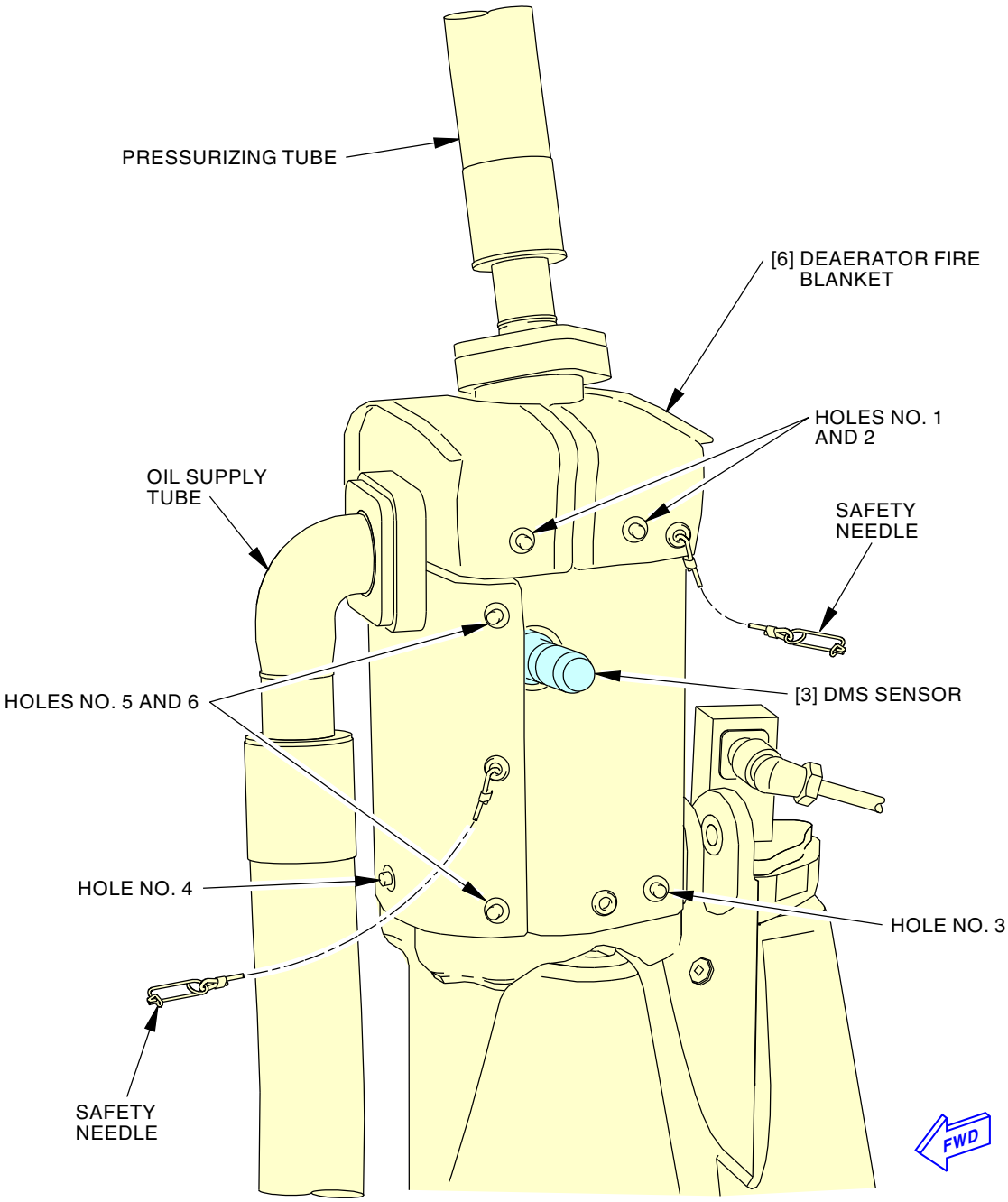
NOTE: Do not remove the omniseal when you remove the preformed packing.

(c) Install a protective cover to the DMS sensor [3] port in the DMS air/oil separator [1].

END OF TASK



DMS Sensor Installation
Figure 401/79-21-12-990-801-H01 (Sheet 1 of 2)



DEAERATOR FIRE BLANKET

D

1211317-00-A

N96062 S0000114040_V2

DMS Sensor Installation
Figure 401/79-21-12-990-801-H01 (Sheet 2 of 2)

TASK 79-21-12-400-801-H01

3. Debris Monitoring System (DMS) Sensor Installation

A. General

(1) This task is the installation procedure for the debris monitoring system (DMS) sensor (referred to as the DMS sensor).

(2) The DMS sensor is mounted on the DMS air/oil separator.

B. References

Reference	Title
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)

C. Tools/Equipment

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

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	DMS sensor	79-21-12-06-010	ARO ALL
4	Preformed packing	79-21-12-06-005	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine
423BL	Oil Tank Access Door, Right Engine

H. Debris Monitoring System (DMS) Sensor Installation

SUBTASK 79-21-12-420-001-H01

(1) Install the DMS sensor [3] in the DMS air/oil separator [1] (Figure 401).

WARNING

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

(a) Lubricate a new preformed packing [4] with clean oil, D00552 [C02-019].

(b) Install the preformed packing [4] to the DMS sensor [3].

(c) Install the DMS sensor [3] to the DMS air/oil separator [1].

(d) Tighten the threaded collar on the DMS sensor [3] with your hand.

CAUTION

USE TEFLON-JAWED PLIERS TO TIGHTEN THE THREADED COLLAR. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE THREADED COLLAR COULD OCCUR. MAKE SURE THE THREADED COLLARS ARE CLEAN WHEN YOU CONNECT THEM. CONTAMINATION TO THE THREADED COLLAR CAN CAUSE DAMAGE TO EQUIPMENT.

1) Use teflon-jawed pliers, STD-664 to tighten the threaded collar.

SUBTASK 79-21-12-420-002-H01

CAUTION

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

CAUTION

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

(2) Use teflon-jawed pliers, STD-664 to connect the electrical connector [2] (TASK 70-00-01-400-807-H01).

(a) Remove the protective covers from the electrical receptacle on the DMS sensor [3] and the electrical connector [2].

(b) Connect the electrical connector [2] to the DMS sensor [3].

(c) Tighten the electrical connector [2].

SUBTASK 79-21-12-210-001-H00

(3) Make sure the DMS sensor is installed correctly.

NOTE: Ask a different technician who did not install the DMS Sensor to do this step.

(a) Use your hand to make sure the DMS sensor is installed tightly.

(b) Do a visual inspection of the knurled threaded collar.

(c) Make sure the bottom of the knurled collar is flush (or almost flush), with the heads of the adapter retaining bolts.

SUBTASK 79-21-12-420-003-H01

(4) Install the deaerator fire blanket [6]:

(a) Wrap the deaerator fire blanket [6] around the DMS air/oil separator [1] and slide the deaerator fire blanket [6] under the tube attachment flanges.

(b) Put the pin at hole 4 to attach the deaerator fire blanket [6] to the main tank body blanket in the related oilet and secure with safety needle.

(c) Put the pin at hole 3 to attach the deaerator fire blanket [6] to the main tank body blanket in the related oilet and secure with safety needle.

(d) Put the pin at holes 5 and 6 in the related oilet in the deaerator fire blanket [6] and attach the deaerator fire blanket [6] around the DMS air/oil separator [1] and secure with safety needles.

(e) Put the pin at holes 1 and 2 in the related oilet in the deaerator fire blanket [6] to close the blanket on the top of the DMS air/oil separator [1] and secure with safety needles.

I. Put the Airplane Back to its Usual Condition

SUBTASK 79-21-12-410-001-H01

(1) Close the applicable oil tank access door.

(a) Close these access panels:

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine
423BL	Oil Tank Access Door, Right Engine

SUBTASK 79-21-12-710-001-H01

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

——— END OF TASK ———

DEBRIS MONITORING SYSTEM (DMS) AIR/OIL SEPARATOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the debris monitoring system (DMS) air/oil separator

(2) An installation of the debris monitoring system (DMS) air/oil separator.

TASK 79-21-13-000-801-H01

2. Debris Monitoring System (DMS) Air/Oil Separator Removal

(Figure 401)

A. General

(1) This task is the removal procedure for the debris monitoring system (DMS) air/oil separator.

(2) The debris monitoring system (DMS) air/oil separator is mounted on the top of the oil tank.

(3) You must open the left fan cowl panel to get access to the DMS air/oil separator.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-00-04-200-801-H01	Gasket Seal (with Imbedded Flexible Seal Material) Removal (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)

C. Tools/Equipment

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

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

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

F. Prepare for the DMS Air/Oil Separator Removal

SUBTASK 79-21-13-860-001-H01

CAUTION

RETRACT THE LEADING EDGE SLATS AND DO THE DEACTIVATION PROCEDURE BEFORE YOU OPEN THE FAN COWL PANELS. IF THE LEADING EDGE SLATS ARE NOT RETRACTED, THE FAN COWL PANELS WILL HIT THEM AND CAUSE DAMAGE.

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

SUBTASK 79-21-13-040-001-H01

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

SUBTASK 79-21-13-010-001-H01

(3) For the left fan cowl panel on the applicable engine, do this task:

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

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

G. DMS Air/Oil Separator Removal

SUBTASK 79-21-13-020-007-H01

(1) Do the steps that follow to remove the deaerator fire blanket [18]:

(a) Remove the safety needle from the pin at holes 1 thru 6.

(b) Remove the deaerator fire blanket [18].

SUBTASK 79-21-13-020-001-H01

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

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

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

CAUTION DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

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

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

(2) Do the steps that follows to disconnect the electrical system and oil tubings:

(a) Use the teflon-jawed pliers, STD-664 to disconnect the electrical connector [3] from the DMS sensor [4] (TASK 70-00-01-400-807-H01).

1) Install the protective covers on the electrical receptacles on the DMS sensor [4] and the electrical connector [3].

(b) Disconnect the pressurizing tube [1] from the DMS air/oil separator [2] as follows:

1) Remove the bolts [12] that attach the pressurizing tube [1] to the DMS air/oil separator [2], and disconnect the pressurizing tube [1].
2) Remove the gasket [13] from the pressurizing tube [1].
3) Examine the gasket [13] for damage.
   a) If there is damage to the gasket, replace it.
   b) If there is no damage to the gasket, keep it for the installation.

(c) Disconnect the oil supply tube [9] from the DMS air/oil separator [2] as follows:
1) Remove the bolts [11] that attach the oil supply tube [9] to the DMS air/oil separator [2], and disconnect the oil supply tube [9].
2) Remove the gasket [10] from the oil supply tube [9].
3) Examine the gasket [10] for damage.
   a) If there is damage to the gasket, replace it.
   b) If there is no damage to the gasket, keep it for the installation.

SUBTASK 79-21-13-020-003-H01

(3) Do the steps that follow to remove the DMS sensor [4]:
(a) Remove the DMS sensor [4] from the DMS air/oil separator [2].
1) Loosen the threaded collar of the DMS sensor [4] from the DMS air/oil separator [2].
2) Remove the DMS sensor [4] from the DMS air/oil separator [2].
3) Remove and discard the preformed packing [6] that is below the Omniseal [5].
NOTE: Do not remove the permanent omniseal when you remove the preformed packing.
4) Install the protective covers on the DMS air/oil separator [2], the DMS sensor [4] receptacle, and the DMS sensor magnetic tip.

SUBTASK 79-21-13-020-004-H01

(4) Remove the DMS air/oil separator [2].

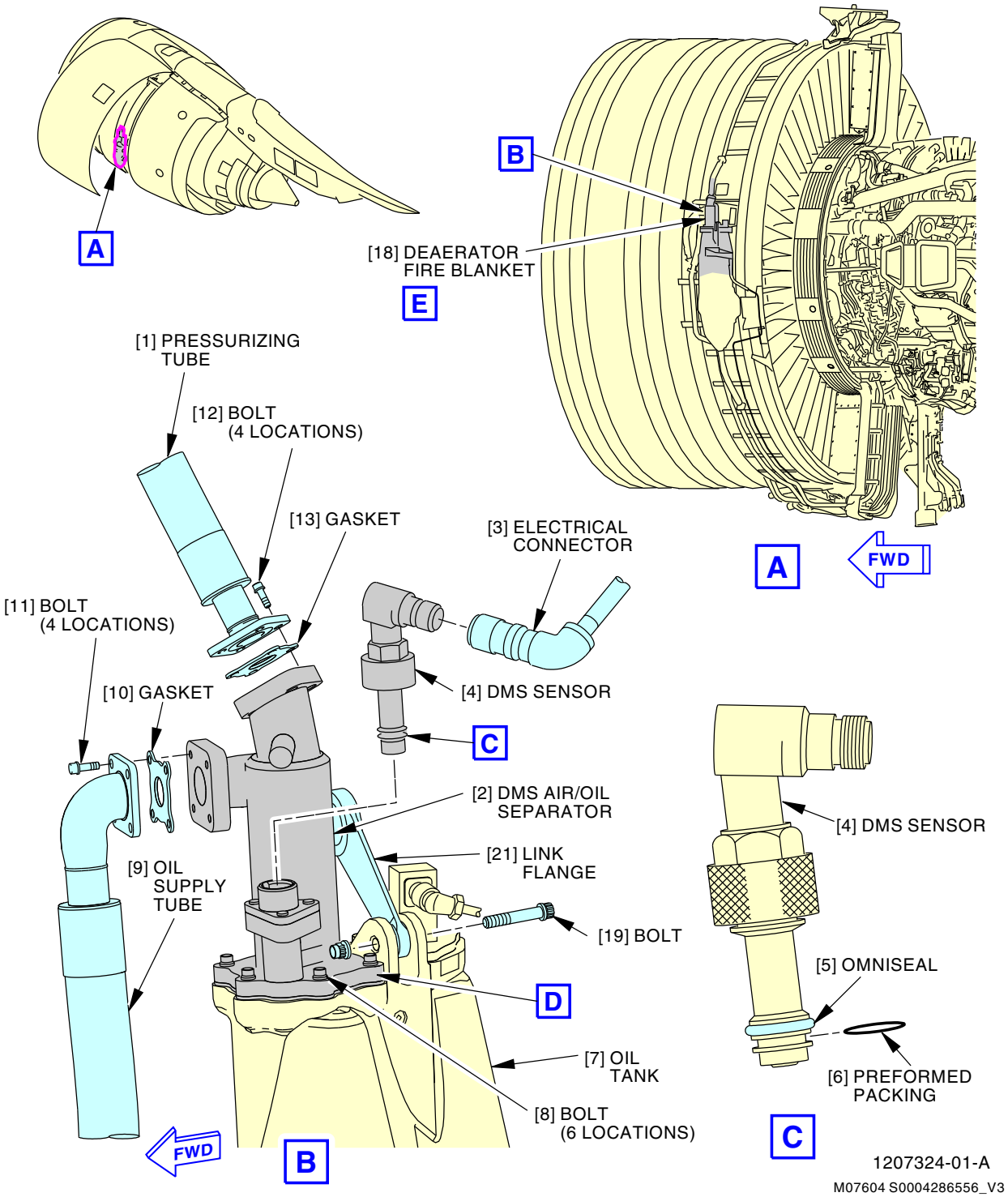
CAUTION
MAKE SURE THAT YOU CLEAN THE DMS AIR/OIL SEPARATOR AND THE TOP OF THE OIL TANK BEFORE YOU REMOVE THE SEPARATOR. IF YOU DO NOT, UNWANTED MATERIAL CAN GET INTO THE ENGINE OIL TANK AND CAUSE DAMAGE TO THE ENGINE.

(a) Remove the bolts [8] that attach the DMS air/oil separator [2] to the oil tank [7].
(b) Remove nut [20] and bolt [19] from the oil tank link flange [21].
(c) Remove the DMS air/oil separator [2] with the deaerator [16].
NOTE: The deaerator [16] must not be sent to the repair shop when a DMS air oil separator is removed for fault isolation.
(d) Remove the gasket [15] (TASK 70-00-04-200-801-H01).
(e) Examine the gasket [15] for damage.
1) If there is damage to the gasket, replace it.
2) If there is no damage to the gasket, keep it for the installation.
(f) Remove and discard the preformed packing [17] from the deaerator [16].

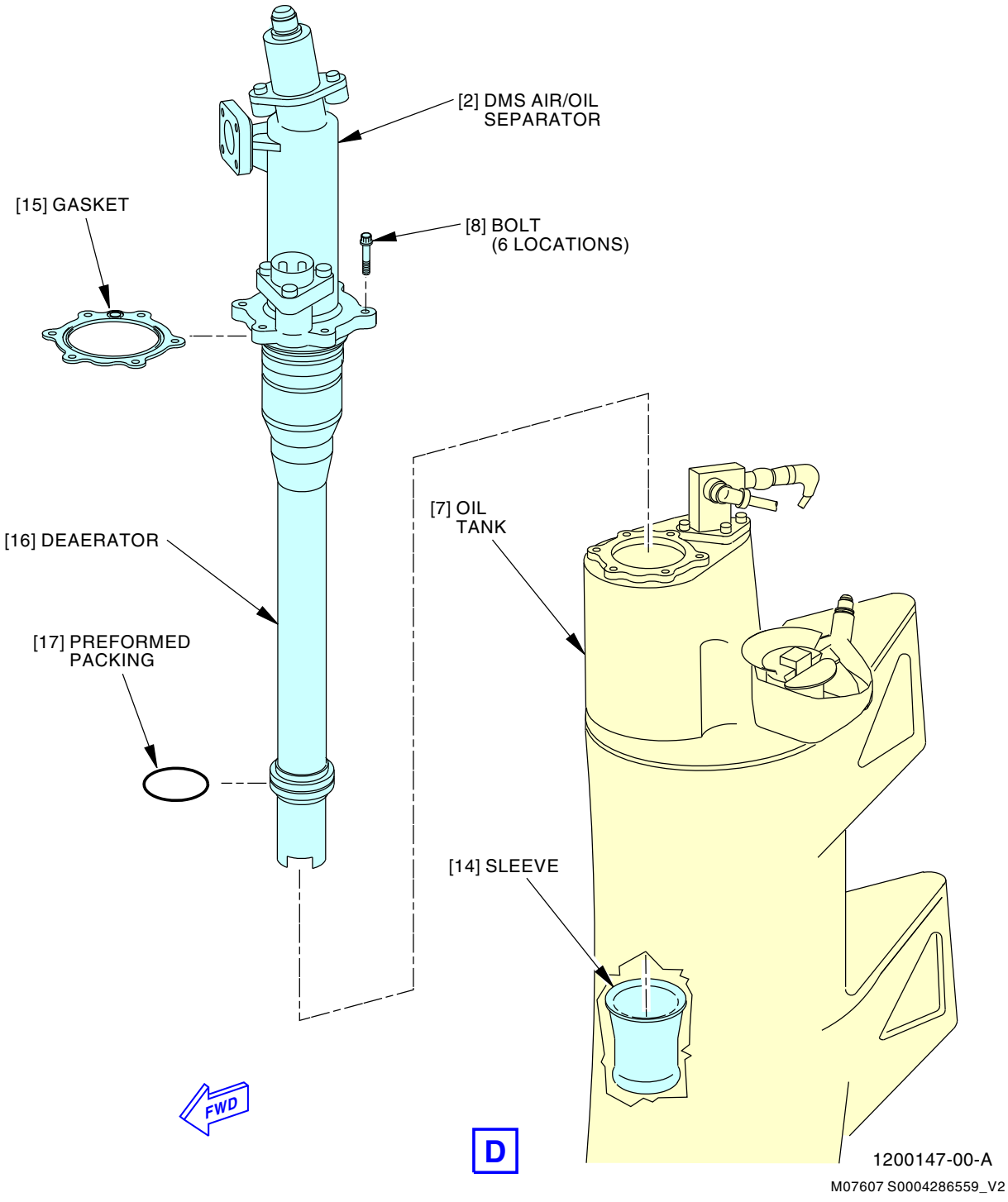
SUBTASK 79-21-13-020-005-H01

(5) Install the protective covers on all the tube fittings and openings on the oil tank [7], on the DMS air/oil separator [2], and on the deaerator [16].

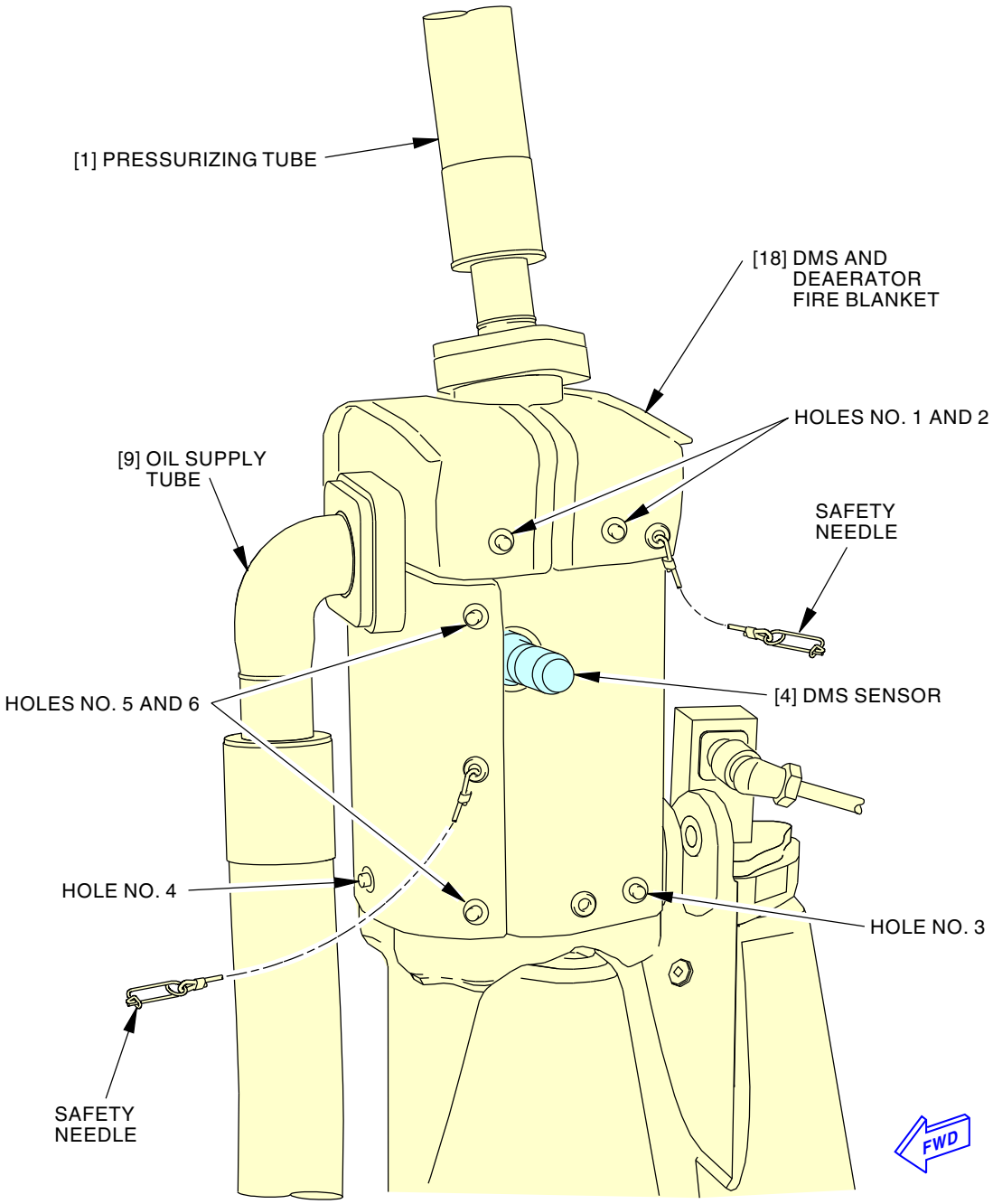
——— END OF TASK ———



DMS Air/Oil Separator Installation
Figure 401/79-21-13-990-801-H01 (Sheet 1 of 3)



DMS Air/Oil Separator Installation
Figure 401/79-21-13-990-801-H01 (Sheet 2 of 3)



DEAERATOR FIRE BLANKET

E

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DMS Air/Oil Separator Installation
Figure 401/79-21-13-990-801-H01 (Sheet 3 of 3)

TASK 79-21-13-400-801-H01

3. Debris Monitoring System (DMS) Air/Oil Separator Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the DMS air/oil separator.

(2) You must do the tests that are listed in the power plant test reference table after you install the DMS air/oil separator.

B. References

Reference	Title
12-13-01-130-803-002	Engine Oil Replenishing (P/B 301)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)

C. Tools/Equipment

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

D. Consumable Materials

Reference	Description	Specification
D00504	Grease - Petrolatum	VV-P-236
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	DMS air/oil separator	79-11-01-03-135	ARO ALL
6	Preformed packing	79-21-12-06-005	ARO ALL
10	Gasket	79-21-51-29-025	ARO ALL
15	Gasket	79-11-01-03-140	ARO ALL
17	Preformed packing	79-11-01-03-150	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

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

H. Debris Monitoring System (DMS) Air/Oil Separator Installation

SUBTASK 79-21-13-420-001-H01

(1) Remove the protective covers from all tubes, fittings, and openings.

SUBTASK 79-21-13-420-002-H01

(2) Install the DMS air/oil separator [2].

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

(a) Lubricate a new preformed packing [17] with clean oil, D00552 [C02-019].

(b) Install the preformed packing [17] on the deaerator [16] of the DMS air/oil separator [2].

(c) Lubricate the gasket [15] with clean,oil, D00552 [C02-019].

(d) Put the gasket [15] on the mounting flange on the oil tank [7] for the DMS air/oil separator [2].

(e) Lower the DMS air/oil separator [2] and deaerator [16] into the oil tank [7].

1) Engage the deaerator [16] into the sleeve [14] in the partition in the oil tank [7].

2) Continue to lower the DMS air/oil separator [2] until you make contact with the gasket [15].

(f) Put grease, D00504 on the threads and friction surfaces of the bolts [8].

(g) Install the bolts [8] that attach the DMS air/oil separator [2] to the oil tank [7].

1) Tighten the bolts [8] to 37.0-43.0 pound-inches (4.2-5.0 Newton-meters).

(h) Put Acheson GP460 compound, D50043 [C02-058] on the threads and friction surfaces of the bolt [19].

(i) Install the bolt [19] and nut [20] with the bolt head forward to the oil tank link flange [21].

1) Tighten the nut [20] to 380-420 pound-inches (43.0-47.5 Newton-meters).

SUBTASK 79-21-13-420-003-H01

(3) Do the steps that follow to install the DMS sensor [4]:

(a) Install the DMS sensor [4].

1) Examine the Omniseal [5] for damage.

a) If the Omniseal [5] is damaged, replace the Omniseal [5].

2) Lubricate a new preformed packing [6] with clean oil, D00552 [C02-019].

3) Install the preformed packing [6] on the DMS sensor [4].

4) Carefully put the DMS sensor [4] into the DMS air/oil separator [2].

5) Turn the threaded collar on the DMS sensor [4] in the clockwise direction to engage the threads on the DMS air/oil separator [2] with your hand.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE THREADED COLLAR. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE THREADED COLLAR COULD OCCUR. MAKE SURE THE THREADED COLLARS ARE CLEAN WHEN YOU CONNECT THEM. CONTAMINATION TO THE THREADED COLLAR CAN CAUSE DAMAGE TO EQUIPMENT.

6) Use teflon-jawed pliers, STD-664 to tighten the threaded collar.

SUBTASK 79-21-13-420-004-H01

(4) Connect the oil supply tube [9] to the DMS air/oil separator [2].

(a) Put the gasket [10] on the mounting flange on the DMS air/oil separator [2].

(b) Put the oil supply tube [9] in its position on the DMS air/oil separator [2].

(c) Install the bolts [11] that attach the oil supply tube [9] to the DMS air/oil separator [2].

1) Tighten the bolts [11] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-13-420-005-H01

(5) Connect the pressurizing tube [1] to the DMS air/oil separator [2].

(a) Put the gasket [13] on the mounting flange of the DMS air/oil separator [2].

(b) Put the pressurizing tube [1] in its position on the DMS air/oil separator [2].

(c) Put Acheson GP460 compound, D50043 [C02-058] on the threads and friction surfaces of the four bolts [12].

(d) Install the four bolts [12] that attach the pressurizing tube [1] to the DMS air/oil separator [2].

1) Tighten the bolts [12] to 225-265 pound-inches (24.4-29.9 Newton-meters).

SUBTASK 79-21-13-420-006-H01

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

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

(6) Use teflon-jawed pliers, STD-664 to connect the electrical connector (TASK 70-00-01-400-807-H01).

(a) Remove the protective covers from the electrical receptacle on the DMS sensor [4] and the electrical connector [3].

(b) Connect the electrical connector [3] to the DMS sensor [4].

(c) Tighten the electrical connector [3].

SUBTASK 79-21-13-420-007-H01

(7) Install the deaerator fire blanket [18]:

(a) Wrap the deaerator fire blanket [18] around the DMS air/oil separator [2] and slide the deaerator fire blanket [18] under the tube attachment flanges.

(b) Put the pin at hole 4 to attach the deaerator fire blanket [18] to the main tank body blanket in the related oilet and secure with safety needle.

(c) Put the pin at hole 3 to attach the deaerator fire blanket [18] and secure with a safety needle.

(d) Put the pins at holes 5 and 6 in the related oilet in the deaerator fire blanket [18] and secure with safety needles.

(e) Put the pin at holes 1 and 2 in the related oilet in the deaerator fire blanket [18] to close the blanket on the top of the DMS air/oil separator [2] and secure with safety needles.

SUBTASK 79-21-13-612-001-H01

(8) Do this task: Engine Oil Replenishing, TASK 12-13-01-130-803-002.

I. Put the Airplane Back to its Usual Condition.

SUBTASK 79-21-13-410-001-H01

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

(a) Close these access panels:

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

SUBTASK 79-21-13-440-001-H01

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

J. Debris Monitoring System Air/Oil Separator Installation Test

SUBTASK 79-21-13-710-001-H01

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

——— END OF TASK ———

DEBRIS MONITORING SYSTEM (DMS) CONDITIONER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the debris monitoring system (DMS) conditioner

(2) An installation of the debris monitoring system (DMS) conditioner.

TASK 79-21-14-000-801-H01

2. Debris Monitoring System (DMS) Conditioner Removal

A. General

(1) This task is the removal procedure for the debris monitoring system (DMS) conditioner (referred to as the DMS conditioner).

(2) You must open the the oil tank access door to remove the DMS conditioner.

B. References

Reference	Title
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)

C. Tools/Equipment

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

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine
423BL	Oil Tank Access Door, Right Engine

F. Prepare for the DMS Conditioner Removal

SUBTASK 79-21-14-010-001-H01

(1) Open the applicable oil tank access door.

(a) Open these access panels:

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine
423BL	Oil Tank Access Door, Right Engine

G. DMS Conditioner Removal

SUBTASK 79-21-14-020-001-H01

CAUTION

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

(CAUTION PRECEDES)

CAUTION

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

(1) Use teflon-jawed pliers, STD-664 to disconnect the DMS conditioner electrical connector (TASK 70-00-01-400-807-H01) (Figure 401):

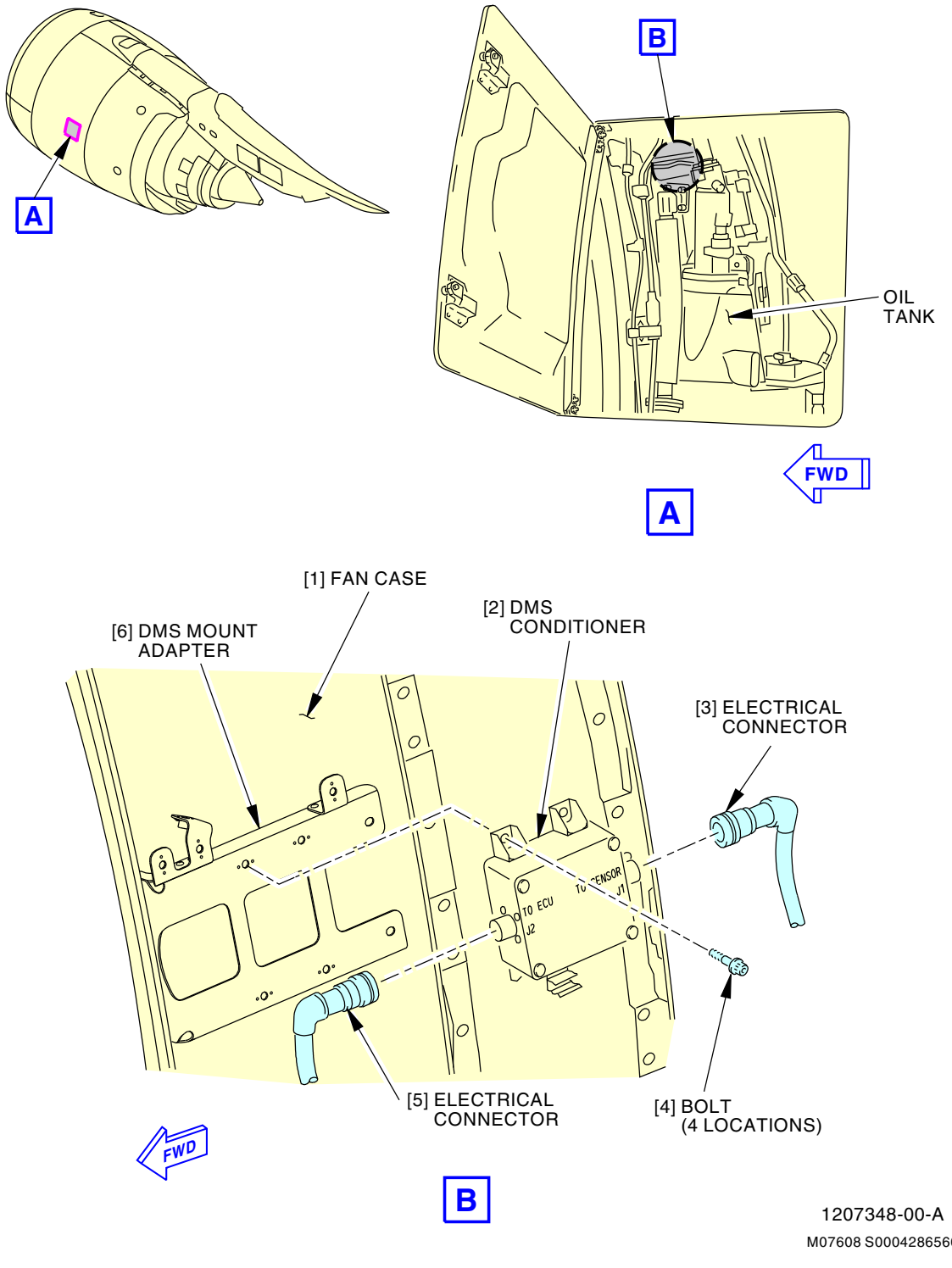
(a) Disconnect the electrical connector [3] and electrical connector [5] from the DMS conditioner [2].

(b) Install protective covers on the electrical receptacles of the DMS conditioner [2], the electrical connector [3] and electrical connector [5].

SUBTASK 79-21-14-020-002-H01

(2) Remove the bolts [4] that attach the DMS conditioner [2] to the DMS mount adapter [6] on the fan case [1] and remove the DMS conditioner [2].

——— END OF TASK ———



DMS Conditioner Installation
Figure 401/79-21-14-990-802-H01

TASK 79-21-14-400-801-H01

3. Debris Monitoring System (DMS) Conditioner Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the debris monitoring system (DMS) conditioner (referred to as the DMS conditioner).

(2) You must do the tests that are listed in the power plant test reference table after you replace the DMS conditioner.

B. References

Reference	Title
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)

C. Tools/Equipment

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

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	DMS conditioner	79-21-14-01-010	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine
423BL	Oil Tank Access Door, Right Engine

G. DMS Conditioner Installation

SUBTASK 79-21-14-420-001-H01

(1) Install the DMS conditioner [2].

(a) Put the DMS conditioner [2] in its position on the DMS mounting adapter [6] on the fan case [1].

(b) Install the bolts [4] that attach the DMS conditioner [2] to the DMS mount adapter [6].

1) Tighten the to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-21-14-420-002-H01

CAUTION

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

(CAUTION PRECEDES)

CAUTION

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

(2) Use teflon-jawed pliers, STD-664 to connect the electrical connectors on the DMS conditioner [2] (TASK 70-00-01-400-807-H01).

(a) Connect the electrical connector [3] and electrical connector [5].

1) Remove the protective covers from the electrical receptacles on the DMS conditioner [2] and the electrical connector [3] and electrical connector [5].

2) Connect the electrical connector [3] and electrical connector [5] to the DMS conditioner [2].

H. Put the Airplane Back to its Usual Condition

SUBTASK 79-21-14-410-001-H01

(1) Close the applicable oil tank access door.

(a) Close these access panels:

Number	Name/Location
413BL	Oil Tank Access Door, Left Engine
423BL	Oil Tank Access Door, Right Engine

I. DMS Conditioner Installation Test

SUBTASK 79-21-14-710-001-H01

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

——— END OF TASK ———

OIL EDUCTOR VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) The removal of the oil eductor valve.

(2) The installation of the oil eductor valve.

TASK 79-21-17-000-801-H01

2. Oil Eductor Valve Removal

A. General

(1) This task is the removal procedure for the oil eductor valve.

(2) You must open the right thrust reverser to get access to the oil eductor valve.

B. References

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

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

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

E. Prepare for the Oil Eductor Valve Removal

SUBTASK 79-21-17-010-002-H01

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

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

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

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

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

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

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

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

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

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

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

F. Oil Eductor Valve Removal

SUBTASK 79-21-17-020-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

WARNING DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU.

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

(1) Remove the eductor tube [12] from the oil eductor valve [2] (Figure 401 (Sheet 1)):

(a) Loosen the bolts [10] which attach the retaining strap [11] to the support bracket [1].

(b) Loosen the bolt [9] from the tube coupling [8].

(c) Disconnect the eductor tube [12] from the oil eductor valve [2].

(d) Remove the E-Seal [13] from the oil eductor valve [2].

1) Do a visual check of the E-Seal [13] for obvious damage.

a) Keep the E-Seal [13] for the installation task if not damaged.

SUBTASK 79-21-17-020-002-H01

(2) Remove the HPT air manifold tube [4] from the oil eductor valve [2].

(a) Loosen the bolts [5] which attach the retaining strap [6] to the support bracket [1].

(b) Loosen the bolt [7] from the tube coupling [3].

(c) Disconnect the HPT air manifold tube [4] from the oil eductor valve [2]

(d) Remove the E-Seal [14] from the oil eductor valve [2].

1) Do a visual check of the E-Seal [14] for obvious damage.

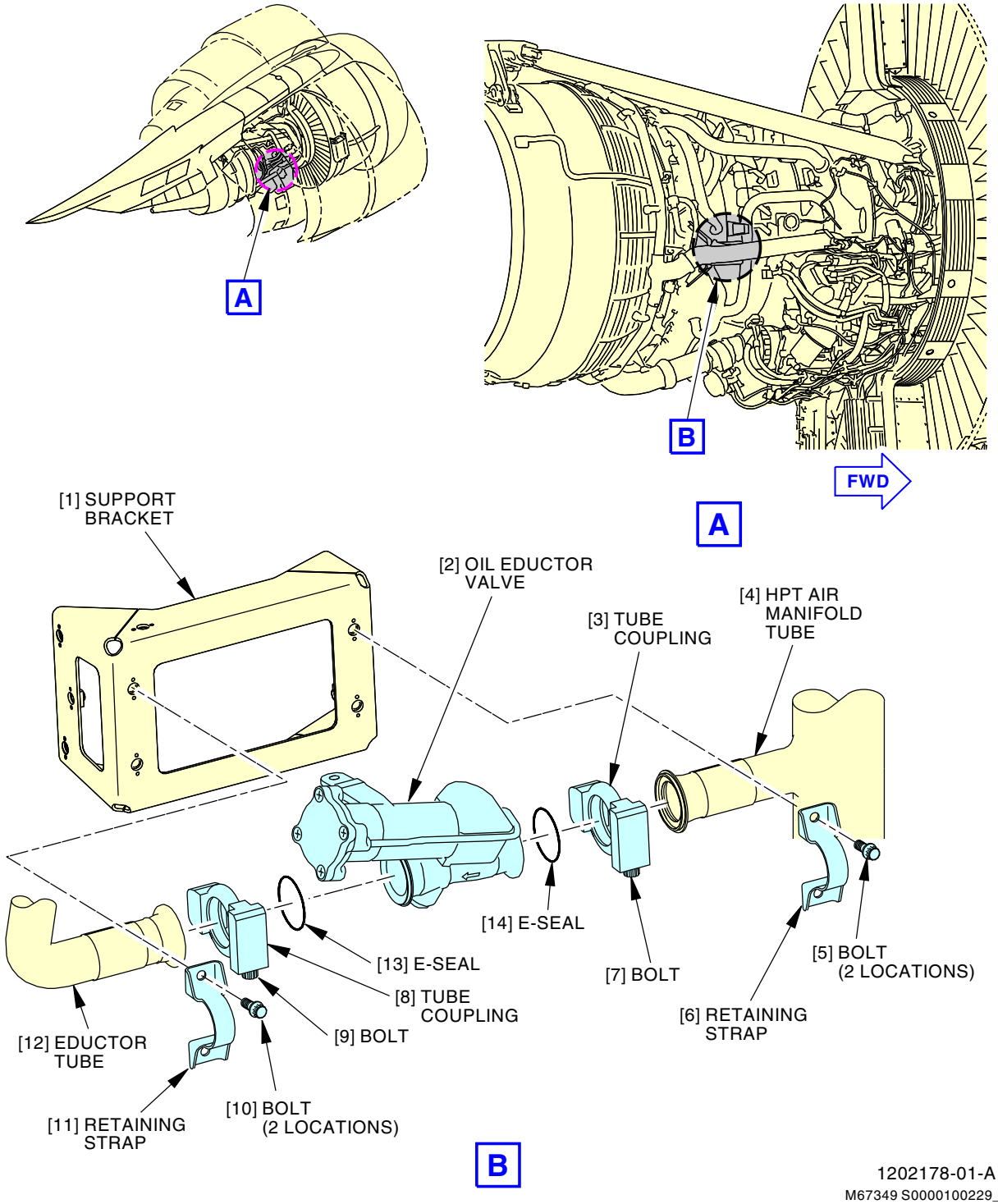
a) Keep E-Seal [14] for the installation task if not damaged.

SUBTASK 79-21-17-020-003-H01

(3) Remove the oil eductor valve [2].

(a) Install protective covers on the HPT air manifold tube [4], the eductor tube [12], and the oil eductor valve [2].

——— END OF TASK ———



Oil Eductor Valve Installation
Figure 401/79-21-17-990-801-H01

TASK 79-21-17-400-801-H01

3. Oil Eductor Valve Installation

A. General

(1) This task is the installation procedure for the oil eductor valve.

B. References

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

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

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

E. Oil Eductor Valve Installation

SUBTASK 79-21-17-420-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

WARNING DO NOT LET HOT OIL GET ON YOU. PUT ON CLOTHES, GOGGLES, AND EQUIPMENT FOR PROTECTION OR LET THE ENGINE BECOME COOL. HOT OIL CAN BURN YOU.

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

(1) Remove the protective covers from the HPT air manifold tube [4], the eductor tube [12] and the oil eductor valve [2].

SUBTASK 79-21-17-420-002-H01

(2) Install the HPT air manifold tube [4] on the oil eductor valve [2] (Figure 401 (Sheet 1)):

(a) Install the tube coupling [3] and E-Seal [14] that attaches the HPT air manifold tube [4] to the oil eductor valve [2].

NOTE: The flow direction of the oil eductor valve is pointed to the aft. Do not tighten the bolt at this time.

(b) Hand tighten bolts [5].

SUBTASK 79-21-17-420-003-H01

(3) Install the eductor tube [12] on the oil eductor valve [2].

(a) Install the tube coupling [8] and E-Seal [13] that attaches the eductor tube [12] to the oil eductor valve [2].

NOTE: Do not tighten the bolt at this time.

(b) Hand tighten bolts [10].

SUBTASK 79-21-17-430-001-H01

(4) Tighten bolt [7], bolt [9], bolts [5], and bolts [10] as follows:

(a) Tighten bolt [7] and bolt [9] to 60-65 pound-inches (6.8-7.3 Newton-meters).

(b) Tighten bolts [5] and bolts [10] to 112-124 pound-inches (12.7-14.0 Newton-meters).

F. Put the Airplane Back to its Usual Condition

SUBTASK 79-21-17-410-002-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

END OF TASK

OIL PRESSURIZING VALVE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) The removal of the oil pressurizing valve

(2) The installation of the oil pressurizing valve.

TASK 79-21-18-000-801-H01

2. Oil Pressurizing Valve Removal

A. General

(1) This task is the removal procedure for the oil pressurizing valve.

(2) The oil pressurizing valve is located on the aft side of the fan case at the the 11:00 o'clock position.

(3) You must open the left thrust reverser to get access to the oil pressurizing valve.

B. References

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

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

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

E. Prepare for the Oil Pressurizing Valve Removal

SUBTASK 79-21-18-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

F. Oil Pressurizing Valve Removal

SUBTASK 79-21-18-020-001-H01

(1) Remove the oil pressurizing valve [3] from the air tank vent tube [1] and the air tank vent tube [4] Figure 401:

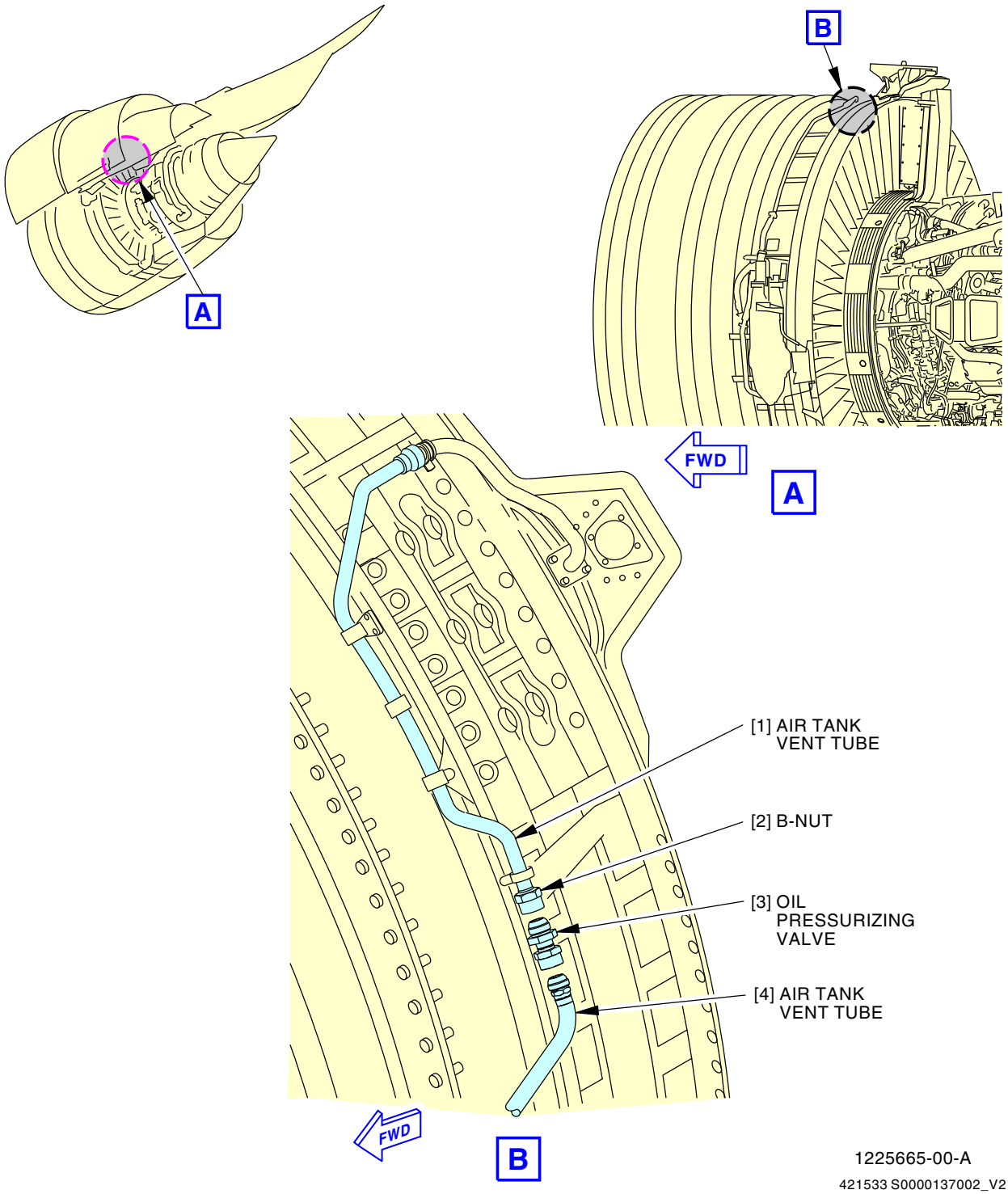
(a) Disconnect the B-nut [2] on the oil pressurizing valve [3].

(b) Disconnect the oil pressurizing valve [3] from the air tank vent tube [4].

1) Remove the oil pressurizing valve [3].

(c) Install protective covers on the air tank vent tube [1], the air tank vent tube [4], and the oil pressurizing valve [3].

——— END OF TASK ———



Oil Pressurizing Valve Installation
Figure 401/79-21-18-990-801-H01

TASK 79-21-18-400-801-H01

3. Oil Pressurizing Valve Installation

A. General

(1) This task provides the installation instructions for the oil pressurizing valve.

(2) The oil pressurizing valve is located on the aft side of the fan case at the the 11:00 o'clock position.

B. References

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

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Oil pressurizing valve	79-21-51-33C-050	ARO ALL

D. Location Zones

Zone	Area
411	Engine, Left
412	Inlet Cowl - Left Engine

E. Access Panels

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

F. Oil Pressurizing Valve Installation

SUBTASK 79-21-18-020-002-H01

(1) Remove the protective covers from the air tank vent tube [1], the air tank vent tube [4], and the oil pressurizing valve [3].

SUBTASK 79-21-18-420-001-H01

(2) Install the oil pressurizing valve [3] as follows Figure 401:

(a) Position the oil pressurizing valve [3] between the air tank vent tube [1] and the air tank vent tube [4].

(b) Connect the oil pressurizing valve [3] to the air tank vent tube [4].

1) Tighten the oil pressurizing valve [3] to 1370-1510 pound-inches (154.8-170.6 Newton-meters).

(c) Connect the air tank vent tube [1] to the oil pressurizing valve [3].

1) Tighten the B-nut [2] (TASK 70-51-00-910-801-H01).

G. Put the Airplane Back to its Usual Condition

SUBTASK 79-21-18-410-001-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

——— END OF TASK ———

OIL INDICATING SYSTEM - INSPECTION/CHECK

1. General

A. This procedure has one task:

(1) An examination of the oil indicating system.

TASK 79-30-00-200-801-H01

2. Oil Indicating System Inspection

A. General

(1) This task is the inspection procedure for the engine oil indicating system.

(2) To do this task you will do these steps:

(a) Examine the oil level sensor for damage

(b) Examine the oil pressure sensor for damage

(c) Examine the oil temperature sensor for damage

(d) Examine the oil filter differential pressure sensor for damage.

(3) You must open the thrust reversers to get access to do this task.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-41-00-910-803-H00	Lockwire Installation (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)
79-31-01-000-801-H01	Oil Level Sensor Removal (P/B 401)
79-31-01-400-801-H01	Oil Level Sensor Installation (P/B 401)
79-32-01-000-801-H01	Oil Pressure Sensor Removal (P/B 401)
79-32-01-400-801-H01	Oil Pressure Sensor Installation (P/B 401)
79-34-01-000-801-H01	Oil Temperature Sensor Removal (P/B 401)
79-34-01-400-801-H01	Oil Temperature Sensor Installation (P/B 401)
79-35-01-000-801-H01	Oil Filter Differential Pressure Sensor Removal (P/B 401)
79-35-01-400-801-H01	Oil Filter Differential Pressure Sensor Installation (P/B 401)

C. Consumable Materials

Reference	Description	Specification
G02329	Tape - Aluminum Foil, Pressure Sensitive - Vibration Damping Tape 434	

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

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

F. Prepare for the Inspection

SUBTASK 79-30-00-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

G. Oil Indicating System Inspection

SUBTASK 79-30-00-210-001-H01

(1) Examine the oil level sensor:

(a) Make sure that the electrical connectors are not loose.

1) If the electrical connectors are loose, tighten the connector if necessary (TASK 70-00-01-400-807-H01).

(b) Look for signs of oil leaks between the oil level sensor and the oil tank.

1) If you see signs of an oil leak, remove the oil level sensor and replace the packing (TASK 79-31-01-000-801-H01 and TASK 79-31-01-400-801-H01).

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

(c) Look for cracks in the mounting flange of the oil level sensor.

1) If you see cracks in the mounting flange, replace the oil level sensor (TASK 79-31-01-000-801-H01 and TASK 79-31-01-400-801-H01).

(d) Make sure that the oil level sensor is not loose.

1) If the oil level sensor is loose, tighten the bolts (TASK 79-31-01-400-801-H01).

SUBTASK 79-30-00-210-002-H01

(2) Examine the oil pressure sensor:

(a) Make sure that the electrical connector is not loose.

1) If the electrical connectors are loose, tighten the connector if necessary (TASK 70-00-01-400-807-H01).

(b) Look for signs of an oil leak between the oil pressure sensor and the backup generator (VSCF) oil/oil heat exchanger.

1) If you see signs of an oil leak, remove the oil pressure sensor and replace the gasket seal (TASK 79-32-01-000-801-H01 and TASK 79-32-01-400-801-H01)

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

(c) Look for cracks in the mounting flange of the oil pressure sensor.

1) If you see cracks in the mounting flange, replace the oil pressure sensor (TASK 79-32-01-000-801-H01 and TASK 79-32-01-400-801-H01)

(d) Make sure that the oil pressure sensor is not loose.

1) If the oil pressure sensor is loose, tighten the bolts (TASK 79-32-01-400-801-H01).

SUBTASK 79-30-00-210-003-H01

(3) Examine the oil temperature sensor:

(a) Look for cracks in the mounting flange of the oil temperature sensor.

1) If you see cracks, replace the oil temperature sensor (TASK 79-34-01-000-801-H01 and TASK 79-34-01-400-801-H01).

(b) Make sure that the oil temperature sensor is not loose.

1) If the oil temperature sensor is loose, tighten the bolts (TASK 79-34-01-400-801-H01).

(c) Make sure that the electrical connector is not loose.

1) If the electrical connectors are loose, tighten the connector if necessary (TASK 70-00-01-400-807-H01).

(d) Wear of the oil temperature sensor with no cracks is permitted.

(e) Signs of loose insulation blanket or exposed insulation material.

1) If the insulation blanket is loose, install the lockwire around the insulation blanket (TASK 70-41-00-910-803-H00).

NOTE: Keep the lockwire clearance to adjacent hardware.

2) If you can see the insulation blanket insulation material, apply the Vibration Damping Tape 434 tape, G02329 to the distressed area.

SUBTASK 79-30-00-210-004-H01

(4) Examine the oil filter differential pressure (DP) sensor:

(a) Look for signs of an oil leak between the oil filter DP sensor and the lube and scavenge pump.

1) If you see signs of an oil leak, remove the oil filter DP sensor and replace the gasket seal (TASK 79-35-01-000-801-H01 and TASK 79-35-01-400-801-H01)

NOTE: Staining is typical on the AGB and TGB area. Staining does not mean there is leakage and is specified as a discoloration caused by baking residue of oil or grease on the surface after high temperature operation. Staining is an acceptable condition.

(b) Look for cracks in the mounting flange of the sensor.

1) If you see cracks, replace the oil filter DP sensor (TASK 79-35-01-000-801-H01 and TASK 79-35-01-400-801-H01)

(c) Make sure that the oil filter DP sensor is not loose.

1) If the sensor is loose, tighten the bolts (TASK 79-35-01-400-801-H01).

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

1) If the electrical connectors are loose, tighten the connector if necessary (TASK 70-00-01-400-807-H01).

H. Put the Airplane Back to its Usual Condition

SUBTASK 79-30-00-860-001-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

——— END OF TASK ———

OIL LEVEL SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the oil level sensor

(2) An installation of the oil level sensor.

TASK 79-31-01-000-801-H01

2. Oil Level Sensor Removal

A. General

(1) This task is the removal procedure for the oil level sensor.

(2) The oil level sensor is on the top of the oil tank and extends into the tank.

(3) You must open the left fan cowl panel to get access to remove the oil level sensor from the oil tank.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)

C. Tools/Equipment

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

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

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

F. Prepare for the Oil Level Sensor Removal

SUBTASK 79-31-01-860-001-H01

CAUTION

RETRACT THE LEADING EDGE SLATS AND DO THE DEACTIVATION PROCEDURE BEFORE YOU OPEN THE FAN COWL PANELS. IF THE LEADING EDGE SLATS ARE NOT RETRACTED, THE FAN COWL PANELS WILL HIT THEM AND CAUSE DAMAGE.

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

SUBTASK 79-31-01-040-001-H01

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

SUBTASK 79-31-01-010-001-H01

(3) For the left fan cowl panel on the applicable engine, do this task:

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

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

G. Oil Level Sensor Removal

SUBTASK 79-31-01-020-003-H01

(1) Do the steps that follow to remove the oil level sensor fire blanket [9] (Figure 401):

(a) Remove the safety needle from the pin at hole 3.

(b) Remove the safety needle from pin at hole 2, which attaches the oil level sensor fire blanket [9] to the main tank body blanket.

(c) Remove the safety needle from pin at hole 1, which attaches the oil level sensor fire blanket [9] to the main tank body blanket.

(d) Remove the oil level sensor fire blanket [9].

SUBTASK 79-31-01-020-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

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

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

(2) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [7] from the oil level sensor [4] (TASK 70-00-01-400-807-H01).

(a) Install a protective covers on the electrical receptacle on the oil level sensor [4] and the electrical connector [7].

SUBTASK 79-31-01-020-002-H01

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

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

(WARNING PRECEDES)

CAUTION

DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

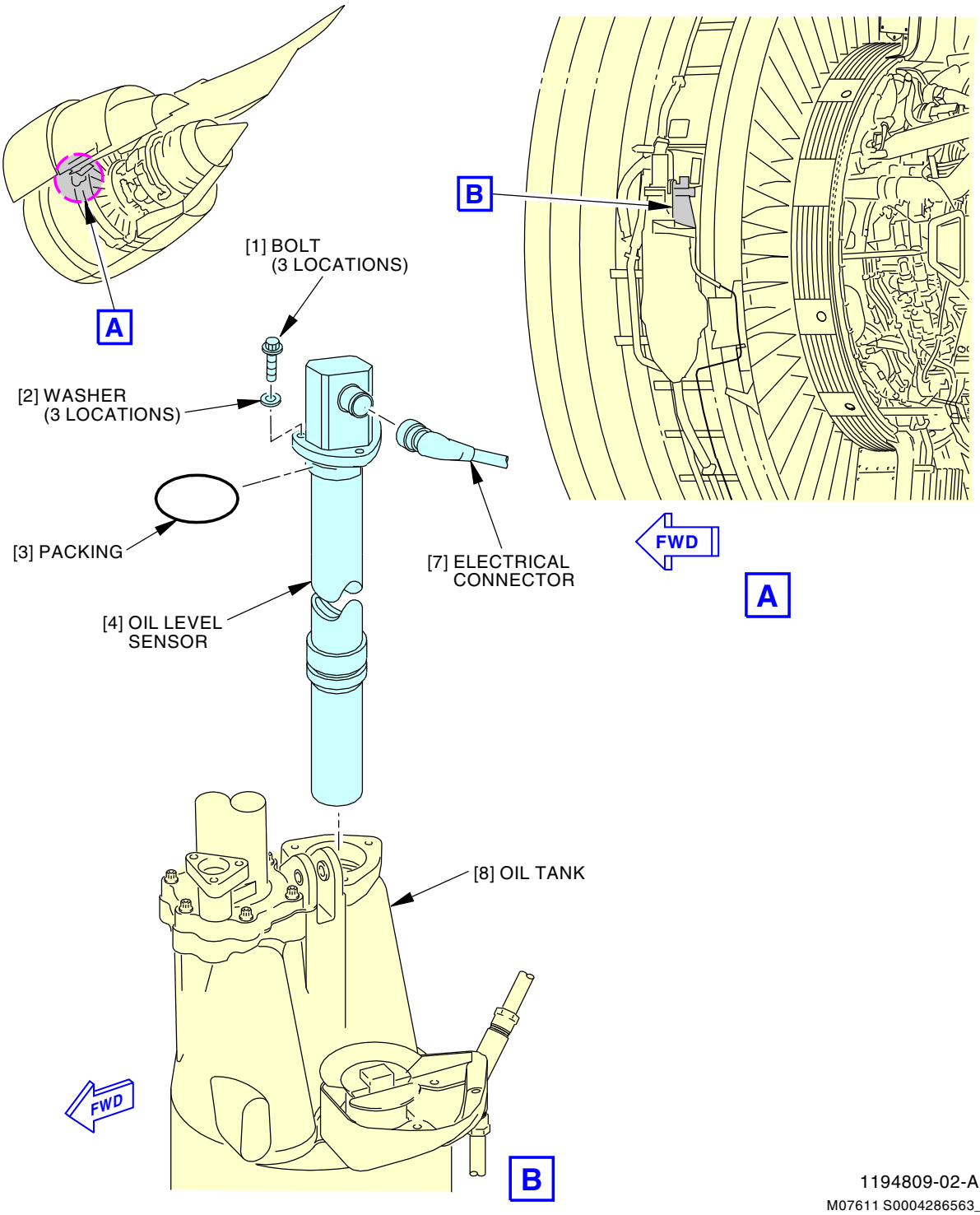
(3) Remove the oil level sensor [4] (Figure 401):

(a) Remove the bolts [1], and washers [2] that attach the oil level sensor [4] to the oil tank [8] and remove the oil level sensor [4].

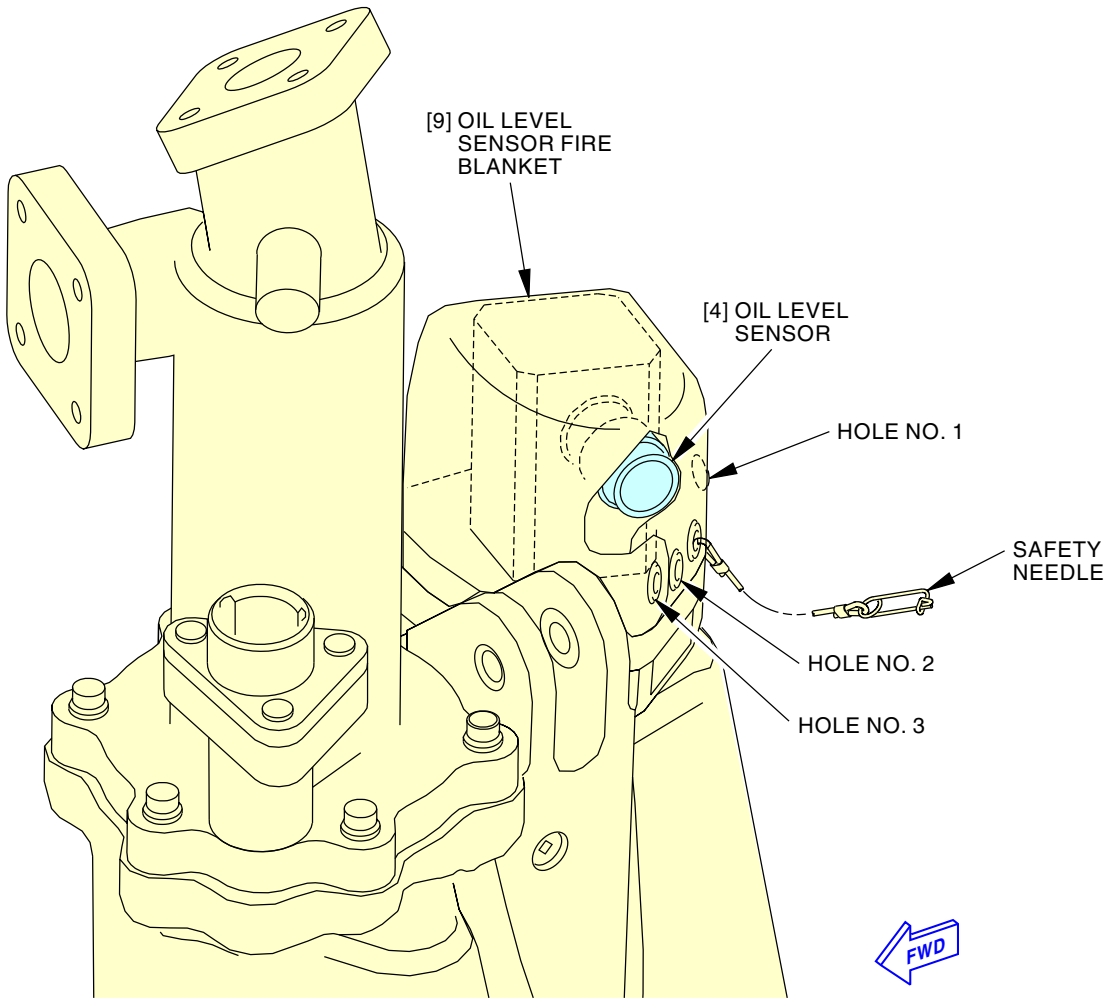
(b) Remove and discard the packing [3] from the oil level sensor [4].

(c) Install a protective cover into the port of the oil tank [8] for the oil level sensor [4].

——— END OF TASK ———



Oil Level Sensor Installation
Figure 401/79-31-01-990-801-H01 (Sheet 1 of 2)



OIL LEVEL SENSOR FIRE BLANKET

C

1211320-00-A

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Oil Level Sensor Installation
Figure 401/79-31-01-990-801-H01 (Sheet 2 of 2)

TASK 79-31-01-400-801-H01

3. Oil Level Sensor Installation

A. General

(1) This task is the installation procedure for the oil level sensor.

(2) You must do the tests that are listed in the power plant test reference table after you install the oil level sensor.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)

C. Tools/Equipment

Reference	Description
STD-583	Mallet - Non-metallic
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
D00504	Grease - Petrolatum	VV-P-236
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Packing	79-31-01-07-010	ARO ALL
4	Oil level sensor	79-31-01-07-015	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

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

H. Oil Level Sensor Installation

SUBTASK 79-31-01-420-001-H01

(1) Install the oil level sensor [4] (Figure 401):

(a) Remove the protective cover from the port of the oil level sensor [4] in the oil tank [8].

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

(b) Lubricate the new packing [3] with clean oil, D00552 [C02-019].

(c) Install the packing [3] in the grooves on the oil level sensor [4].

(d) Put the oil level sensor [4] in its position in the oil tank [8].

1) Align the oil level sensor [4] bolt holes with a non-metallic mallet, STD-583.

(e) Put grease, D00504 on the threads and friction surfaces of the bolts [1].

(f) Install the bolts [1], and washers [2] that attach the oil level sensor [4] to the oil tank [8].

1) Tighten the bolts [1] to 109.0-127.0 pound-inches (12.3-14.3 Newton-meters).

SUBTASK 79-31-01-420-002-H01

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

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

(2) Use teflon-jawed pliers, STD-664 to connect the electrical connector [7] (TASK 70-00-01-400-807-H01):

(a) Remove the protective cover from the electrical receptacle on the oil level sensor [4] and the electrical connector [7].

(b) Connect the electrical connector [7] to the oil level sensor [4].

(c) Tighten the electrical connector [7].

SUBTASK 79-31-01-420-003-H01

(3) Install the oil level sensor fire blanket [9]:

(a) Wrap the oil level sensor fire blanket [9] on top of the oil level sensor [4].

(b) Put the pin at hole 1 to attach the oil level sensor fire blanket [9] to the main tank body fire blanket in the related oilet and secure with safety needle.

(c) Put the pin in hole 2 to attach the oil level sensor fire blanket [9] to the main tank body fire blanket in the related oilet and secure with safety needle.

(d) Install the oil level sensor fire blanket [9] around the oil level sensor harness and put the pin at hole 3 in the related oilet and secure with safety needle.

I. Put the Airplane Back to its Usual Condition

SUBTASK 79-31-01-410-001-H01

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

(a) Close these access panels:

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

SUBTASK 79-31-01-440-001-H01

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

J. Oil Level Sensor Installation Test

SUBTASK 79-31-01-710-001-H01

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

END OF TASK

OIL PRESSURE SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the oil pressure sensor

(2) An installation of the oil pressure sensor.

TASK 79-32-01-000-801-H01

2. Oil Pressure Sensor Removal

A. General

(1) This task is the removal procedure for the oil pressure sensor (M79002).

(2) The oil pressure sensor is mounted on the VSCF oil/oil heat exchanger. The VSCF oil/oil heat exchanger is mounted on the aft fan frame at the 7:00 o'clock position.

(3) You must open the left thrust reverser to get access to the oil pressure sensor.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

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

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

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

F. Prepare for the Oil Pressure Sensor Removal

SUBTASK 79-32-01-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

G. Oil Pressure Sensor Removal

SUBTASK 79-32-01-020-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

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

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

(1) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [3] from the oil pressure sensor [4] (TASK 70-00-01-400-807-H01).

(a) Install protective covers on the electrical receptacle on the oil pressure sensor [4] and the electrical connector [3].

SUBTASK 79-32-01-020-002-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

(WARNING PRECEDES)

WARNING

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

CAUTION

DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION

DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

(2) Remove the oil pressure sensor [4] from the VSCF oil/oil heat exchanger [1] (Figure 401):

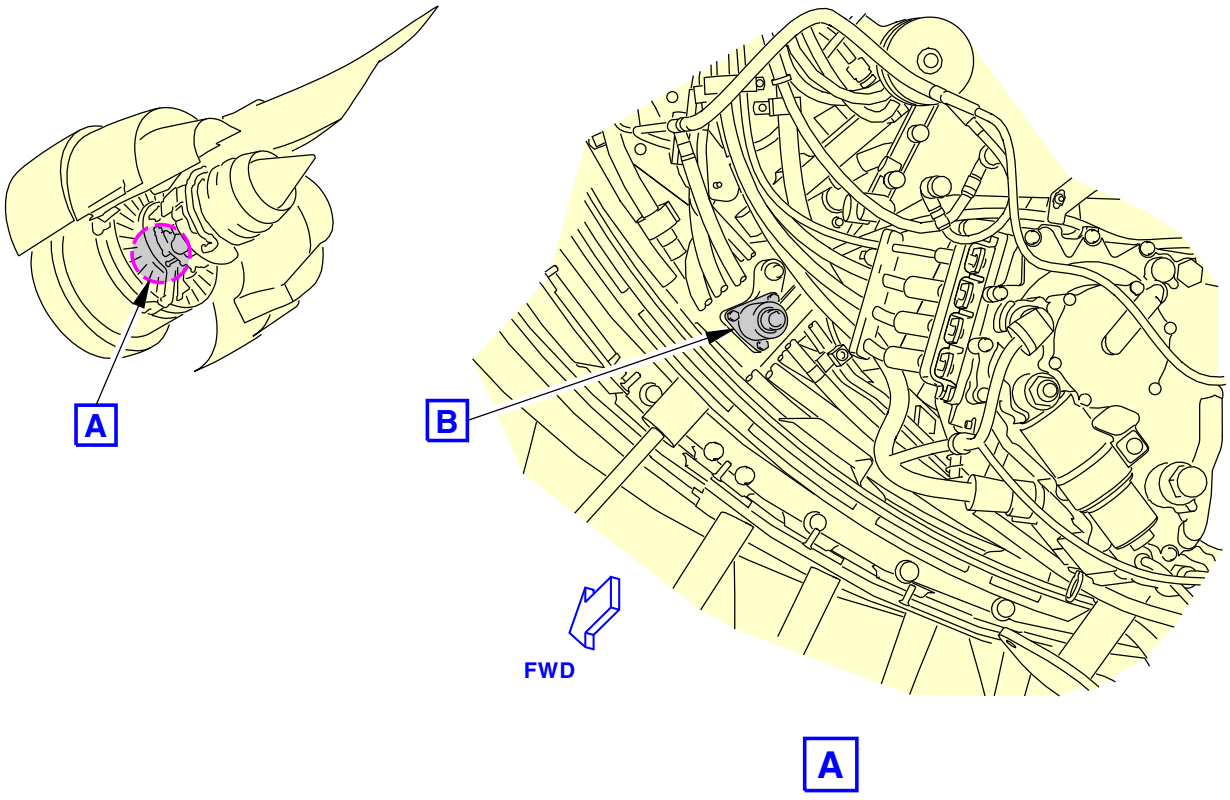
(a) Remove the bolts [2] that attach the oil pressure sensor [4] to the VSCF oil/oil heat exchanger [1] and remove the oil pressure sensor [4].

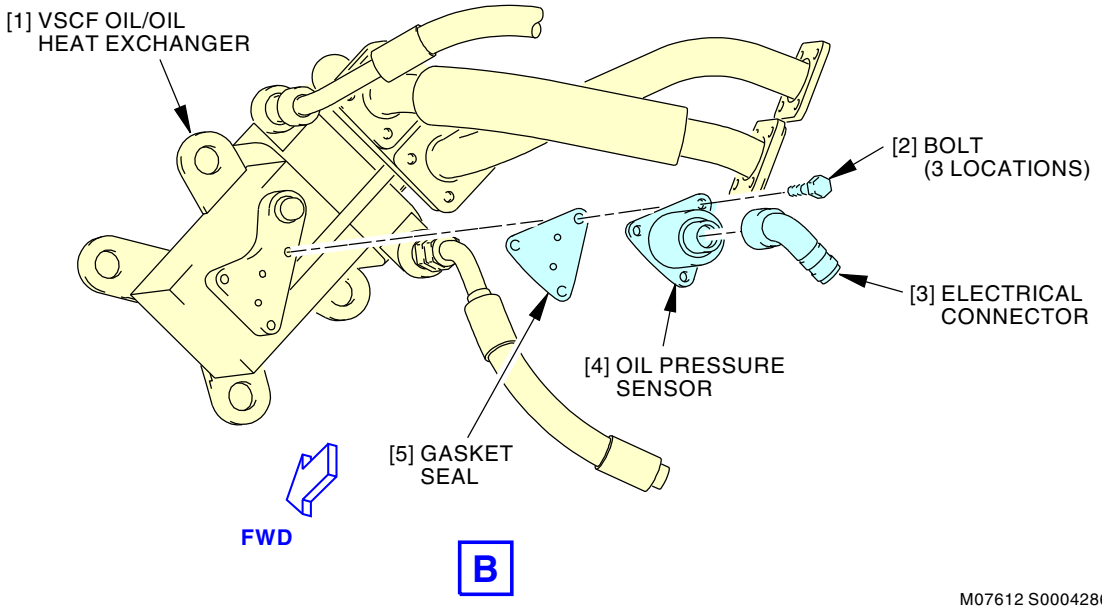
(b) Remove the gasket seal [5] from the oil pressure sensor [4].

(c) Examine the gasket seal [5] for damage. If you see damage, discard the gasket seal.

(d) Install a protective cover into the port of the VSCF oil/oil heat exchanger [1] for the oil pressure sensor [4].

——— END OF TASK ———





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Oil Pressure Sensor Installation
Figure 401/79-32-01-990-801-H01

TASK 79-32-01-400-801-H01

3. Oil Pressure Sensor Installation

A. General

(1) This task is the installation procedure for the oil pressure sensor M79002.

(2) You must do the tests that are listed in the power plant test reference table after you install the oil pressure sensor to the VSCF oil/oil heat exchanger.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

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

D. Consumable Materials

Reference	Description	Specification
D00504	Grease - Petrolatum	VV-P-236

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Oil pressure sensor	79-32-01-04-010	ARO ALL
5	Gasket seal	79-32-01-04-015	ARO ALL
		79-32-01-04A-015	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

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

H. Oil Pressure Sensor Installation

SUBTASK 79-32-01-420-001-H01

(1) Install the oil pressure sensor [4] (Figure 401):

(a) Remove the protective cover from the port of the VSCF oil/oil heat exchanger [1] for the oil pressure sensor [4].

(b) Put grease, D00504 on the threads and friction surfaces of the bolts [2].

(c) Install the oil pressure sensor [4] with the gasket seal [5] on the VSCF oil/oil heat exchanger [1].

(d) Install the bolts [2] that attach the oil pressure sensor [4] to the VSCF oil/oil heat exchanger [1].

1) Tighten the bolts [2] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-32-01-420-002-H01

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

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

(2) Use teflon-jawed pliers, STD-664 to connect the electrical connector [3] (TASK 70-00-01-400-807-H01):

(a) Remove the protective covers from the electrical receptacle on the oil pressure sensor [4] and the electrical connector [3].

(b) Connect the electrical connector [3] to the oil pressure sensor [4].

(c) Tighten the electrical connector [3].

I. Oil Pressure Sensor Installation Test

SUBTASK 79-32-01-710-001-H01

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

J. Put the Airplane Back to its Usual Condition.

SUBTASK 79-32-01-410-001-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

——— END OF TASK ———

OIL TEMPERATURE SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the oil temperature sensor

(2) An installation of the oil temperature sensor.

TASK 79-34-01-000-801-H01

2. Oil Temperature Sensor Removal

A. General

(1) This task is the removal procedure for the oil temperature sensor (M79003).

(2) The oil temperature sensor is mounted in an adapter in the oil supply tube just aft of the fan hub frame at the 5:30 o'clock position.

(3) You must open the right thrust reverser to get access to the oil temperature sensor.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

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

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

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

F. Prepare for the Oil Temperature Sensor Removal

SUBTASK 79-34-01-010-001-H01

WARNING

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

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

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

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

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

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

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

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

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

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

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

G. Oil Temperature Sensor Removal

SUBTASK 79-34-01-020-003-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

(1) Remove the oil temperature sensor insulation blanket [6].

(a) Pull up the hook and loop fastener tabs.

(b) Separate the two halves of the insulation blanket.

ARO ALL; AIRPLANES WITH A NEW SILICONE RUBBER OIL TEMPERATURE SENSOR INSULATION BLANKET.

SUBTASK 79-34-01-020-004-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

(2) Remove the oil temperature sensor insulation blanket [7].

(a) Remove the safety cables from insulation blanket pins.

NOTE: The pins point outboard.

(b) Separate the two halves of the insulation blanket.

ARO ALL

SUBTASK 79-34-01-020-001-H01

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

(CAUTION PRECEDES)

CAUTION

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

(3) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [2] from the oil temperature sensor [3] (TASK 70-00-01-400-807-H01).

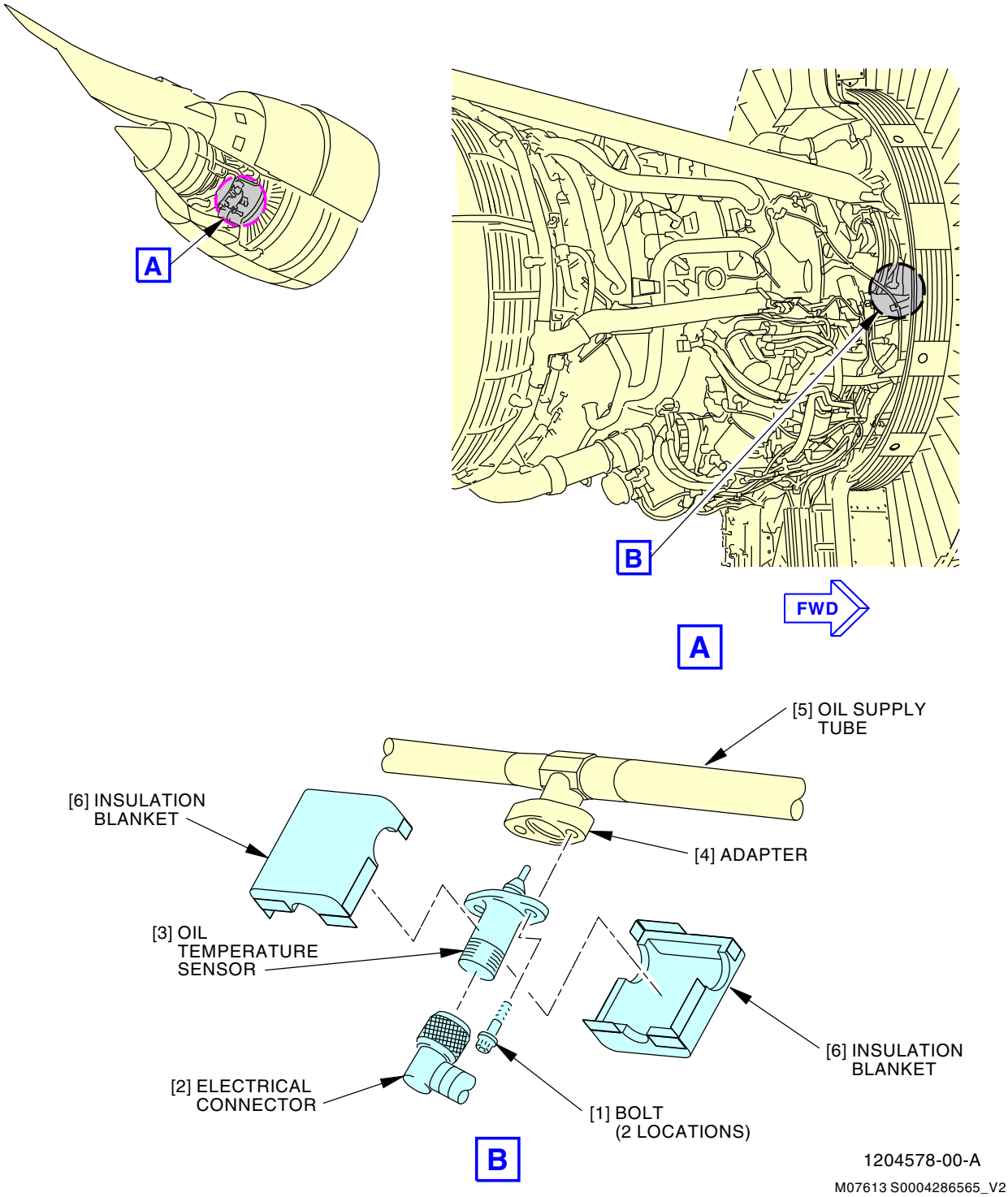
(a) Install protective covers on the electrical receptacle on the oil temperature sensor [3] and on the electrical connector [2].

SUBTASK 79-34-01-020-002-H01

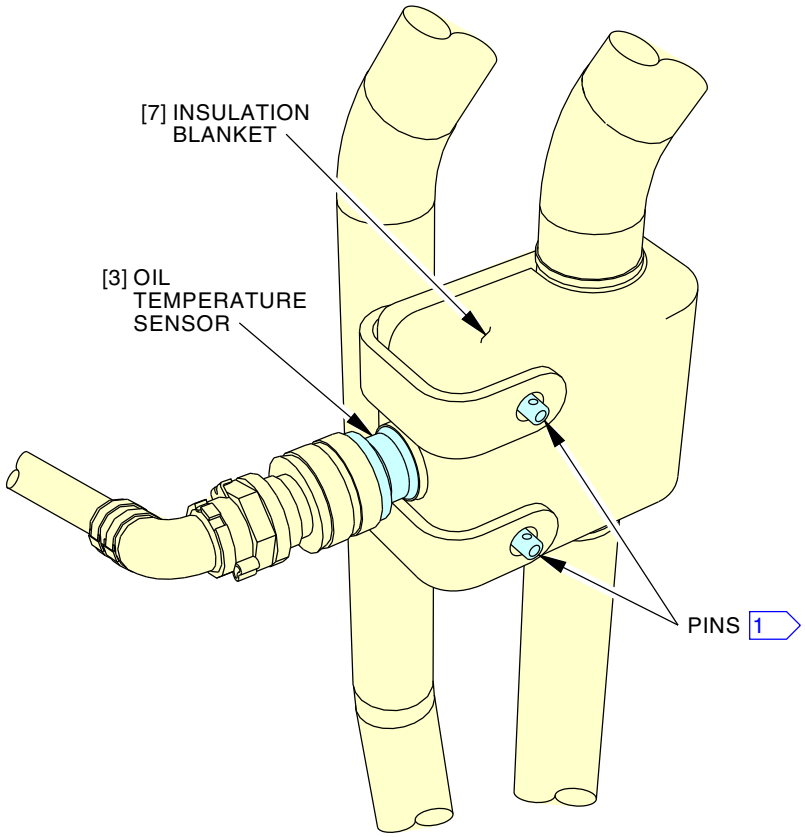
(4) Remove the bolts [1] that attach the oil temperature sensor [3] to the sensor adapter [4], and remove the oil temperature sensor [3].

(a) Install protective covers in the port on the oil supply tube [5] for the oil temperature sensor [3] and on the tip of the sensor.

——— END OF TASK ———



Oil Temperature Sensor Installation
Figure 401/79-34-01-990-801-H01 (Sheet 1 of 2)



1 PINS MUST POINT OUTBOARD AS SHOWN

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Oil Temperature Sensor Installation
Figure 401/79-34-01-990-801-H01 (Sheet 2 of 2)

TASK 79-34-01-400-801-H01

3. Oil Temperature Sensor Installation

(Figure 401)

A. General

(1) This task provides the instructions on how to install the oil temperature sensor.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
70-41-00-910-802-H01	Safety Cable Installation (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

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

D. Consumable Materials

Reference	Description	Specification
D00634 [C02-060]	Compound - Antiseize, Lithium-Based - Never-Seize Regular Grade	
G50163 [C10-217]	Tape - Reinforced Silicone Stretchtape - RL 6000SA	
G51113 [C10-143]	Kit - Safety Cable Assembly	

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Oil temperature sensor	79-34-01-02-015	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

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

H. Oil Temperature Sensor Installation

SUBTASK 79-34-01-420-001-H01

(1) Install the oil temperature sensor [3] as follows:

(a) Put Never-Seize Regular Grade compound, D00634 [C02-060] on the inner area of the sensor adapter [4].

(b) Put the oil temperature sensor [3] in its position in the sensor adapter [4] in the oil supply tube [5].

NOTE: The oil temperature sensor does not touch the oil. It is not necessary to install packing on the oil temperature sensor.

(c) Install the bolts [1] that attach the oil temperature sensor [3] to the sensor adapter [4].

1) Tighten the bolts [1] to 110-120 pound-inches (12.4-13.6 Newton-meters).

SUBTASK 79-34-01-420-002-H01

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

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

(2) Use the teflon-jawed pliers, STD-664 to connect the electrical connector [2] to the oil temperature sensor [3](TASK 70-00-01-400-807-H01).

SUBTASK 79-34-01-420-003-H01

(3) Install the insulation blankets [6] for the oil temperature sensor as follows:

(a) Remove the RTV tape from the metal foil of the insulation blankets [6].

(b) Attach one layer of RL 6000SA tape, G50163 [C10-217] around the hole on the insulation blankets [6] for the oil temperature sensor.

(c) Put the two halves of insulation blanket [6] around the oil temperature sensor [3].

(d) Push down the hook and the loop tabs tightly to attach the insulation blanket [6].

ARO ALL; AIRPLANES WITH A NEW SILICONE RUBBER OIL TEMPERATURE SENSOR INSULATION BLANKET.

SUBTASK 79-34-01-420-004-H01

(4) Install the insulation blanket [7] for the oil temperature sensor as follows:

NOTE: RTV tape is not needed on the sensor for Post SB 79–0026 engines.

(a) Install the two halves of insulation blanket [7] around the oil temperature sensor [3].

1) Make sure that the pins face outboard.

(b) Attach the pins with safety cable assembly kit, G51113 [C10-143]. Refer to Safety Cable Installation, TASK 70-41-00-910-802-H01.

ARO ALL

I. Put the Airplane Back to its Usual Condition.

SUBTASK 79-34-01-410-001-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

J. Oil Temperature Sensor Installation Test

SUBTASK 79-34-01-710-001-H01

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

——— END OF TASK ———

OIL FILTER DIFFERENTIAL PRESSURE SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the oil filter differential pressure sensor

(2) An installation of the oil filter differential pressure sensor.

TASK 79-35-01-000-801-H01

2. Oil Filter Differential Pressure Sensor Removal

A. General

(1) This task is the removal procedure for the oil filter differential pressure sensor M79011.

(2) The oil filter differential pressure (DP) sensor M79011 (referred to as the DP sensor) is mounted on the lube and scavenge pump.

(3) You must open the right thrust reverser to get access to the DP sensor.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-203	Container - Oil Resistant, 1 U.S.-Gal (3.8 l)
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

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

F. Prepare for the DP Sensor Removal

SUBTASK 79-35-01-010-001-H01

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

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

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

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

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

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

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

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

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

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

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

G. DP Sensor Removal

SUBTASK 79-35-01-020-001-H01

WARNING DO NOT TOUCH THE COMPONENTS OF THE OIL SYSTEM IF THE ENGINE IS HOT. THESE COMPONENTS STAY HOTTER THAN OTHER COMPONENTS. HOT COMPONENTS CAN BURN YOU.

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

(1) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [3] from the DP sensor [1] (TASK 70-00-01-400-807-H01).

(a) Install protective covers on the electrical receptacle on the DP sensor [1] and the electrical connector [3]

SUBTASK 79-35-01-020-002-H01

(2) Remove the DP sensor [1] (Figure 401):

WARNING DO NOT OPEN THE OIL SYSTEM UNTIL THE PRESSURE GOES TO ZERO. THE PRESSURE GOES TO ZERO APPROXIMATELY FIVE MINUTES AFTER AN ENGINE IS STOPPED. A PRESSURIZED OIL SYSTEM CAN RELEASE A SPRAY OF HOT OIL THAT CAN BURN YOU.

(WARNING PRECEDES)

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

CAUTION DO NOT LET OIL GET ON THE ENGINE OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO EQUIPMENT.

(a) Remove the hose clamp [6] from the DP sensor insulation [5].

(b) Remove the DP sensor insulation [5] from the DP sensor [1].

1) Remove the bolt [2] that attaches the DP sensor insulation [5] to the DP sensor [1].

2) Remove the two DP sensor insulation [5] halves.

(c) Put a 1 U.S.-gal (3.81 l) oil resistant container, STD-203 under the DP sensor [1].

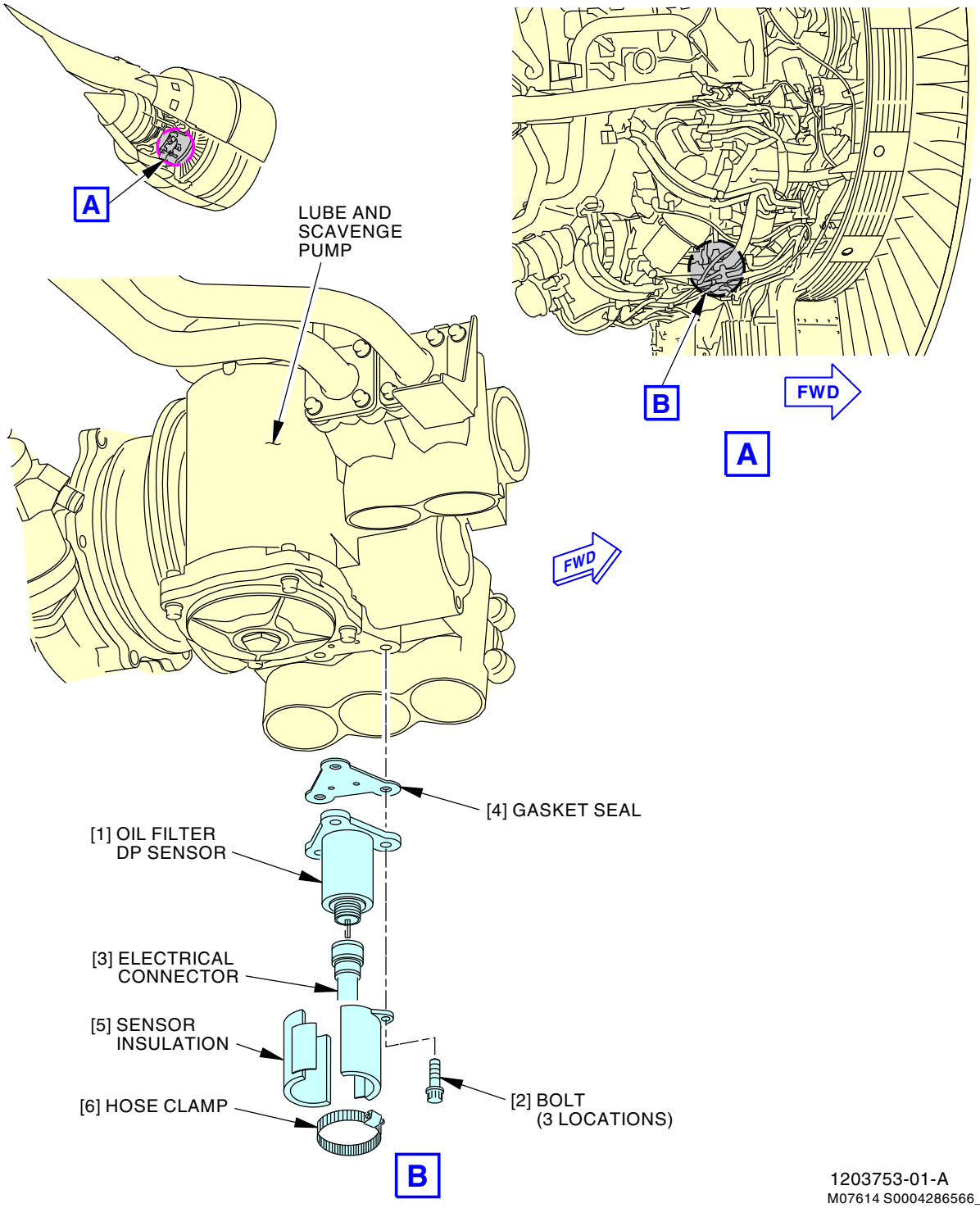
(d) Remove the two remaining bolts [2] that attach the DP sensor [1] to the lube and scavenge pump, and remove the DP sensor [1].

(e) Remove the gasket seal [4] from the DP sensor [1].

(f) Examine the gasket seal [4] for damage. If you see damage, discard the gasket seal [4].

(g) Install a protective cover into the port of the lube and scavenge pump for the DP sensor [1].

——— END OF TASK ———



Oil Filter DP Sensor Installation
Figure 401/79-35-01-990-801-H01

TASK 79-35-01-400-801-H01

3. Oil Filter Differential Pressure Sensor Installation

A. General

(1) This task is the installation procedure for the oil filter differential pressure sensor M79011 (referred to as the DP sensor).

(2) You must do the tests that are listed in the power plant test reference table after you install the DP sensor.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

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

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	DP sensor	79-32-01-04A-020	ARO ALL
4	Gasket seal	79-32-01-04A-015	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

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

H. DP Sensor Installation

SUBTASK 79-35-01-420-001-H01

(1) Install the DP sensor [1] (Figure 401):

(a) Remove the protective cover from the port on the lube and scavenge pump for the DP sensor [1].

(b) Lubricate the gasket seal [4] with clean oil, D00552 [C02-019].

(c) Install the new gasket seal [4] on the DP sensor [1].

(d) Put Acheson GP460 compound, D50043 [C02-058] on the threads and friction surfaces of the bolts [2]..

(e) Put the DP sensor [1] in position on the lube and scavenge pump.

1) Install two of the bolts [2] to attach the DP sensor [1] to the lube and scavenge pump.

(f) Put the DP sensor insulation [5] half, with the bolt tab, around the DP sensor [1].

1) Install the remaining bolt [2].

(g) Tighten the three bolts [2] to 37-43 pound-inches (4.2-4.7 Newton-meters).

(h) Install the remaining half of the DP sensor insulation [5] around the DP sensor [1] and attach with the two stainless steel hooks and loops.

1) Adjust the sensor insulation halves to make sure the two halves touch along the split-line.

(i) Install the hose clamp [6] around the DP sensor insulation [5] halves, along the center, axially.

NOTE: Position the hose clamp so the screw housing and tab do not touch adjacent hardware.

1) Tighten the hose clamp [6] to close the gap and slightly compress the DP sensor insulation [5].

SUBTASK 79-35-01-420-002-H01

(2) Remove the protective covers from the electrical receptacle on the DP sensor [1] and the electrical connector [3].

SUBTASK 79-35-01-420-003-H01

CAUTION

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

CAUTION

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

(3) Use teflon-jawed pliers, STD-664 to connect the electrical connector [3] to the DP sensor [1] (TASK 70-00-01-400-807-H01):

(a) Tighten the electrical connector [3].

I. Oil Filter Differential Pressure Sensor Installation Test

SUBTASK 79-35-01-710-001-H01

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

J. Put the Airplane Back to its Usual Condition.

SUBTASK 79-35-01-410-001-H01

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

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

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

1) Close these access panels:

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

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

1) Close these access panels:

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

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

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

——— END OF TASK ———