STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-R03
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGIN/STRUT				007	APR 22/06

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	OIL QUANTITY TRANSMITTER		ALL	4000

ZONES	ACCESS PANELS
410 420	417AL 427AL

MECH | INSP

MPD ITEM NUMBER

REPLACE THE OIL QUANTITY TRANSMITTER. N79-31-01-4A

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

1. Remove the Oil Quantity Transmitter

A. References

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

(2) AMM 36-11-01/401, Pneumatic Duct

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

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

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

B. Access

(1) Location Zones
410 Left Engine
420 Right Engine

(2) Access Panels
415AL Fan Reverser (Left)
425AL Fan Reverser (Left)

C. Prepare to Remove the Oil Quantity Transmitter

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

(2) Open the left fan cowl panel (AMM 71-11-04/201).

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

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

(4) Open the left core cowl panel (AMM 71-11-06/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT COULD OCCUR.

(5) Open the left thrust reverser (AMM 78-31-00/201).

D. Remove the Oil Quantity Transmitter (Fig. 401)

(1) For easier access, remove the high pressure pneumatic duct of the 15th-stage from the No. 4 port (AMM 36-11-01/401).

(2) Disconnect the electrical connector (4).

(a) Install the protective cap to the electrical connector (4).

(3) Disconnect the cooling air tube (20) from the union (1) on the heatshield.

(4) Remove the bolts (9, 11), nuts (10, 12) and washers (13) which attach the heatshield (2) to the engine oil tank.

(5) Remove the heatshield (2) from the engine.

(6) Remove the bolts (14), nuts (15) and washers (16) to remove the brackets (3, 5) from the oil quantity transmitter (6).

(7) Remove the bolts (17), nuts (18) and washers (19) which attach the oil quantity transmitter to the engine oil tank.

(8) Remove the packing (7) from the oil quantity transmitter (6).

(a) Discard the packing (7).

(9) Install protective cap to the opening in the engine oil tank to prevent contamination of the engine oil tank.

2. Install the Oil Quantity Transmitter

A. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	6	Transmitter - Oil Quantity	79-31-01	03 06	50 55
	7	Packing	79-31-01	03 06	55 65

B. References

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

(2) AMM 36-11-01/401, Pneumatic Duct

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

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

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

(6) AMM 79-31-00/501, Oil Quantity Indicating System

C. Access

(1) Location Zones
410 Left Engine
420 Right Engine

(2) Access Panels
415AL Fan Reverser (Left)
425AL Fan Reverser (Left)

MECH | INSP

D. Procedure (Fig. 401)

(1) Remove protective cap from the opening on the engine oil tank.

(2) Lubricate the new packing (7) with engine oil.

(3) Install the packing (7) on the oil quantity transmitter (6).

(4) Install the oil quantity transmitter (6) into the engine oil tank.

(5) Align the electrical connection of the oil quantity transmitter (6) as shown in Fig. 401.

(6) Install the bolts (17), nuts (18) and washers (19) to attach the oil quantity transmitter (6) to the engine oil tank.

(7) Install the bolts (14), nuts (15) and washers (16) to attach the brackets (3, 5) and the oil quantity transmitter (6).

(a) Tighten the bolts (14, 17).

(8) Install the heatshield (2) to the brackets (3, 5) with the bolts (9, 11), nuts (10, 12) and washers (13).

(a) Tighten the bolts (9, 11).

(9) Connect the cooling air tube (20) to the union (1).

(a) Tighten the tube nut on the cooling air tube (20).

(10) Remove protective cap from the electrical connector (4).

(11) Connect the electrical connector (4) to the oil quantity transmitter (6).

(12) Install the high pressure pneumatic duct of the 15th-stage to the No. 4 port (AMM 36-11-01/401).

E. Put the airplane back to its initial condition

(1) Supply electrical power (AMM 24-22-00/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT COULD OCCUR.

MECH	INSP

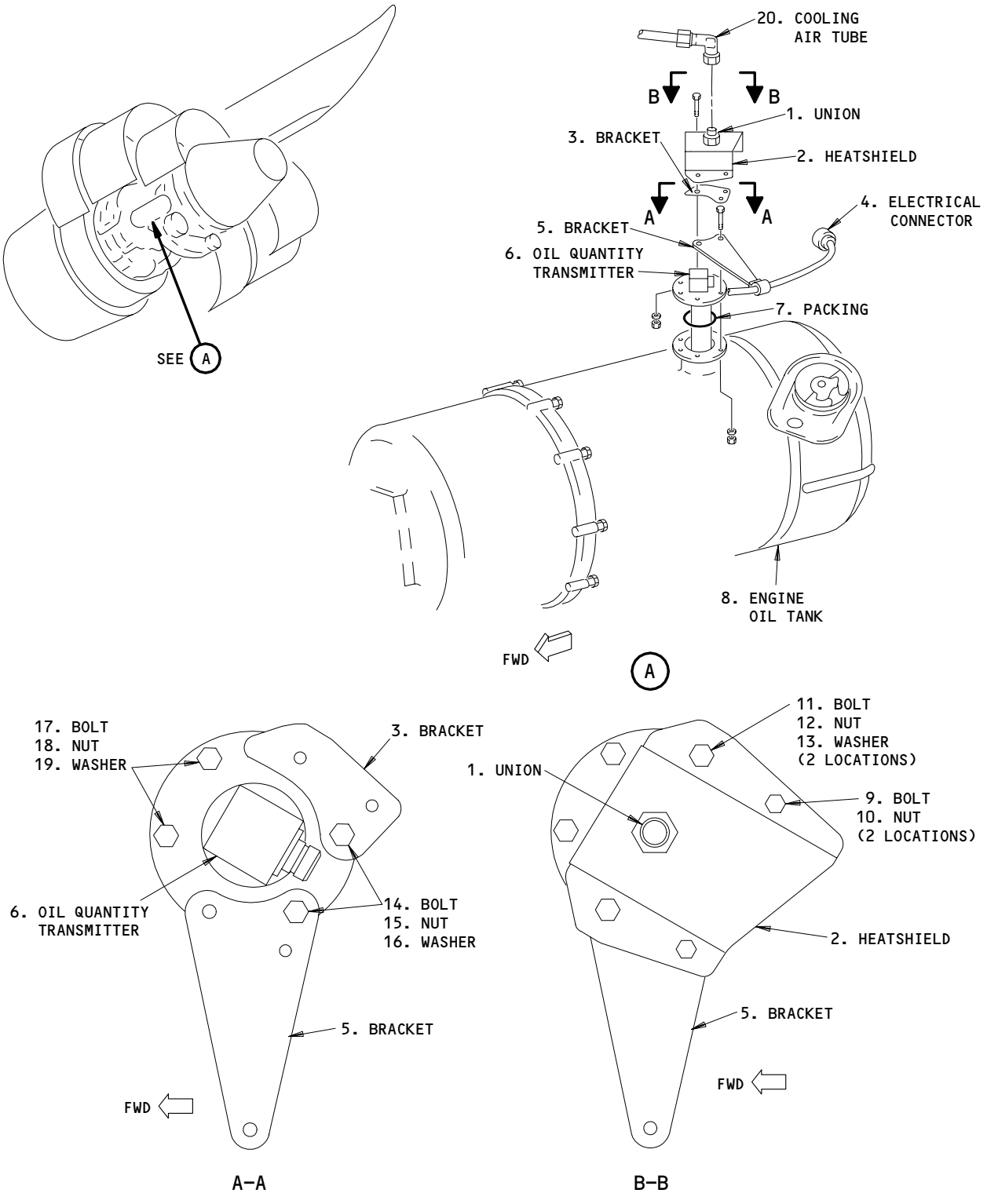
(2) Close the left thrust reverser (AMM 78-31-00/201).

(3) Close the left core cowl panel (AMM 71-11-06/201).

(4) Close the left fan cowl panel (AMM 71-11-04/201).

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

(6) Do a test of the oil quantity indicating system to make sure it is serviceable (AMM 79-31-00/501).



Oil Quantity Transmitter Installation
Figure 401

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-R04
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGIN/STRUT				007	DEC 22/04

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	OIL PRESSURE TRANSMITTER		ALL	4000

ZONES	ACCESS PANELS
410 420	414AR 416AR 424AR 426AR

MECH	INSP	MPD ITEM NUMBER

REPLACE THE OIL PRESSURE TRANSMITTER. N79-32-01-4A

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

OIL PRESSURE TRANSMITTER - REMOVAL/INSTALLATION

1. Remove the Oil Pressure Transmitter

A. References

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

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

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

B. Prepare to Remove the Oil Pressure Transmitter

(1) For the left engine, open these circuit breakers on the overhead panel, P11, and attach the DO-NOT-CLOSE tag:

(a) 11L9, LEFT ENGINE OIL PRESS EICAS REF

(2) For the right engine, open these circuit breakers on the overhead panel, P11, and attach the DO-NOT-CLOSE tag:

(a) 11L36, RIGHT ENGINE OIL PRESS EICAS REF

(3) Open the left fan cowl panel (AMM 71-11-04/201).

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

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

(5) Open the left core cowl panel (AMM 71-11-06/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(6) Open the left thrust reverser (AMM 78-31-00/201).

C. Remove the Oil Pressure Transmitter

(1) Disconnect the electrical connector from the oil pressure transmitter.

(a) Install a cap on the electrical connector.

(2) Disconnect the vent tube tee from the oil pressure transmitter.

(a) Discard the packing.

(b) Install the cap on the vent tube.

(3) Remove the oil pressure tube from the oil pressure transmitter.

(a) Discard the packing.

(b) Install the cap on the oil pressure tube.

(4) Remove the locknut which attaches the oil pressure transmitter to the bracket.

(5) Remove the oil pressure transmitter from the engine.

2. Install the Oil Pressure Transmitter

A. Consumable Materials

MECH | INSP

(1) G01505 Lockwire - AS3214-02

B. References

(1) AMM 20-10-21/601, Electrical Bonding

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

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

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

(5) AMM 79-32-00/501, Oil Pressure Indicating System

C. Install the Oil Pressure Transmitter (Fig. 401)

(1) Install the oil pressure transmitter through the bracket.

(2) Loosely install the nut which attaches the oil pressure transmitter to the bracket.

(3) Move the oil pressure transmitter until the electrical connector is at the 11:00 o'clock position.

(a) Tighten the nut.

(b) Install the lockwire on the nut.

(4) Make sure the bonding resistance between the oil pressure transmitter and the bracket is 0.010 ohms or less (AMM 20-10-21/601).

(5) Remove the cap from the oil pressure tube.

(6) Install the new packing on the oil pressure tube.

(7) Install the oil pressure tube to the oil pressure transmitter.

(a) Tighten the tube nut.

(8) Install the new packing to the vent tube tee.

(9) Connect the vent tube tee to the oil pressure transmitter.

(a) Tighten the tee nut.

(10) Remove the cap from the electrical connector.

(11) Connect the electrical connector to the oil pressure transmitter.

D. Put the Airplane Back to Its Usual Condition

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

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

(2) Close the left core cowl panel (AMM 71-11-06/201).

(3) Close the left fan cowl panel (AMM 71-11-04/201).

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

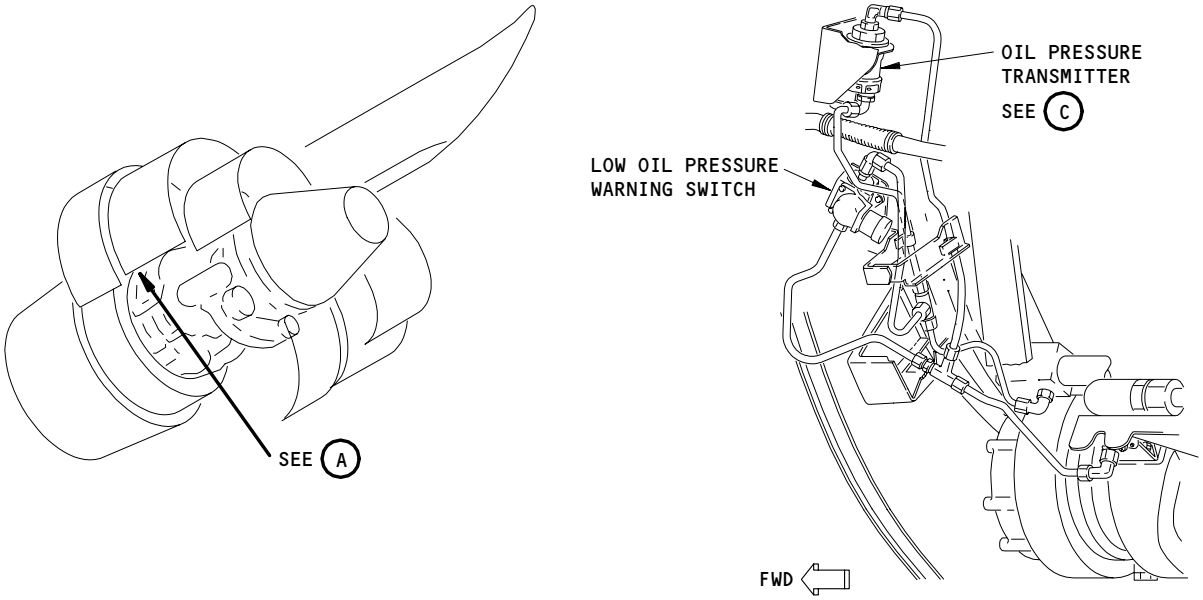
(5) For the left engine, remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

(a) 11L9, LEFT ENGINE OIL PRESS EICAS REF

(6) For the right engine, remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

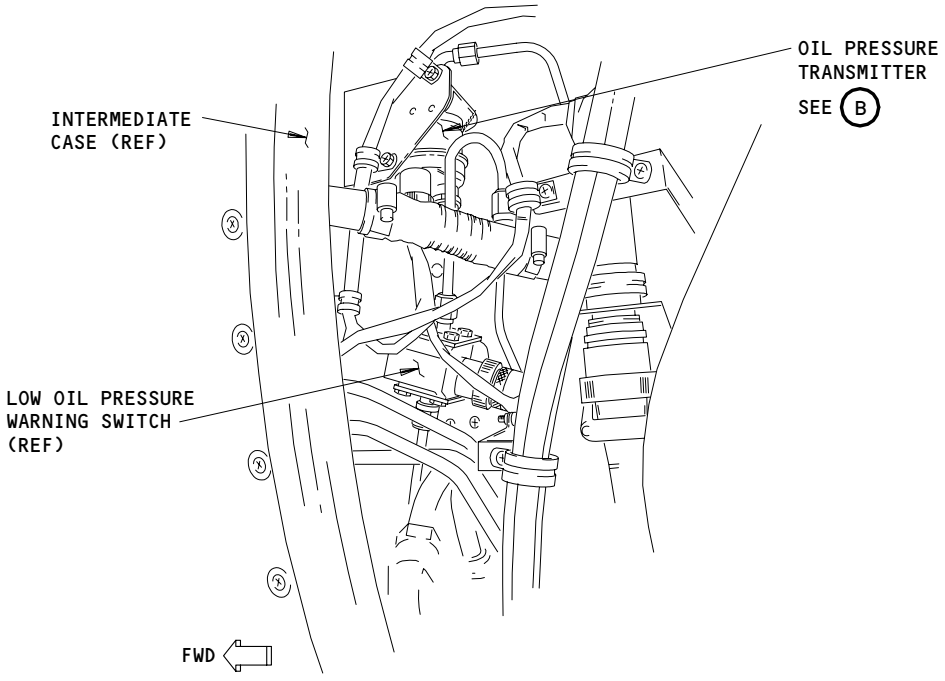
(a) 11L36, RIGHT ENGINE OIL PRESS EICAS REF

(7) Do the operational test for the oil pressure transmitter (AMM 79-32-00/501).



ENGINES WITH SB 79-18

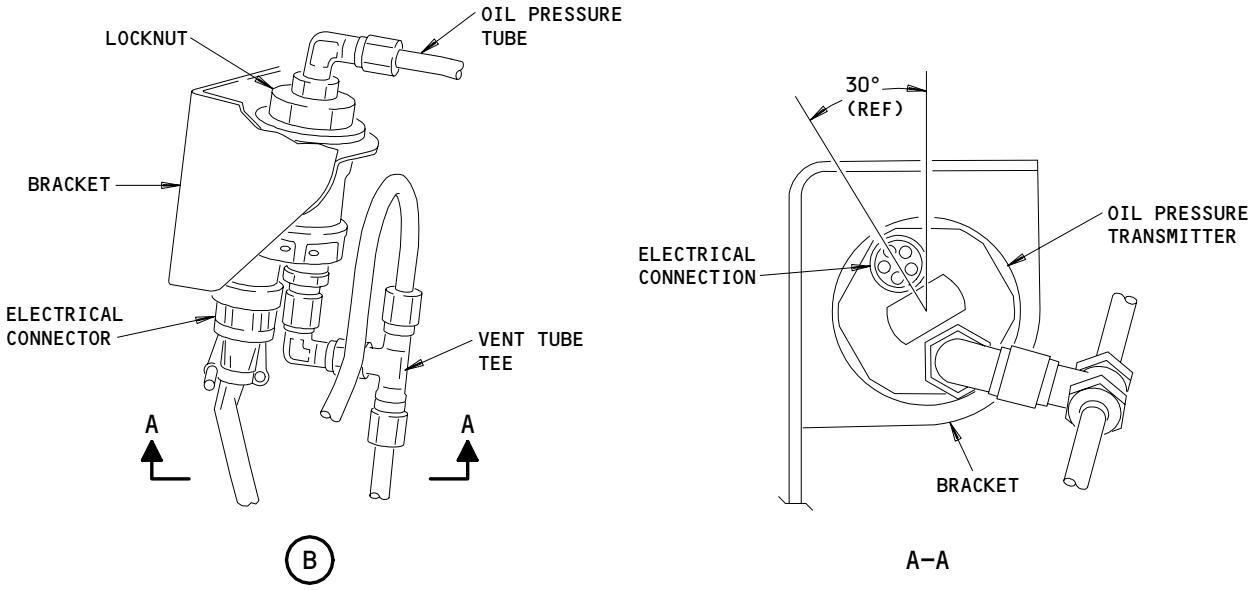
A



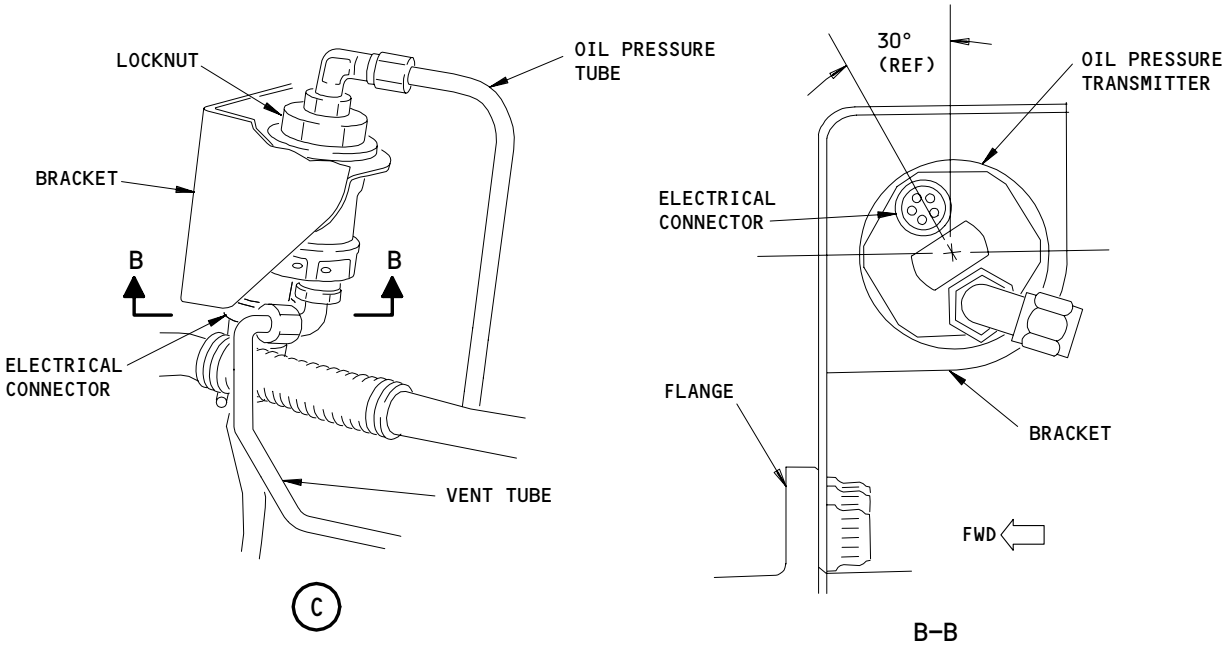
ENGINES WITHOUT SB 79-18

A

Oil Pressure Transmitter Installation
Figure 401 (Sheet 1)



ENGINES WITHOUT SB 79-18



ENGINES WITH SB 79-18

Oil Pressure Transmitter Installation
Figure 401 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-401-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		01000 HRS	10202	006	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 1 OIL SYSTEM TUBING		ALL	4000

ZONES	ACCESS PANELS
411	415AL 416AR 417AL 418AR

MECH | INSP

MPD ITEM NUMBER

VISUALLY CHECK THE ENGINE 1 OIL SYSTEM TUBING FOR CONDITION, SECURITY AND LEAKS. N79-00-00-6A

1. Do the Inspection of the Oil System Tubing

A. References

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

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

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

(4) AMM 79-11-00/001, Engine Oil System

B. Prepare to Examine the Oil System Tubes

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

(1) Do the deactivation procedure for the thrust reverser for ground maintenance (AMM 78-31-00/201).

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

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

WARNING: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

MECH | INSP

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

C. Examine the Oil System Tubing

(1) Examine the tubes of the oil system for condition and if they are attached correctly.

(a) Visually examine the external oil system tubes for damage. See Table 601.

NOTE: It is not necessary to remove the tube to do the inspection to make sure the tube condition is satisfactory. Oil system tube dents are permitted for continued service if, visually, the tube OD is seen to not be decreased by more than 20 percent at any one location.
The Inspection Reference Table that follows is to help you identify specified areas and conditions whenever maintenance time permits inspection. Tube inspection should not be done only on the basis of this table. Table 601 does not imply that items or conditions listed are all-inclusive. Experience and judgement will continue to be an important part of any inspection program.

Table 601 - Inspection Reference Table
Continue In Service Limits For The Oil System Tubes

ITEM	INSPECT FOR	CONTINUE IN SERVICE LIMITS
Oil System Tubes	Cracks	None Permitted
	Corrosion and Stains	Permitted if it can be removed by light polishing with crocus cloth
	Loose Tube Nuts	None Permitted
	Loose or Broken Lockwire	None Permitted
	Nicks, Scratches, Chafing and Pitting	0.003 inch (0.076mm) maximum depth permitted in all locations
	Dents (without sharp edges or corners)	Permitted if the tubing OD is not decreased by more than 20 percent at each location. No dents permitted within 0.25 inch (6.25 mm) or less from the tube ferrule.
	Dents (with sharp edges or corners)	None Permitted

(b) Visually examine the external oil system tubes for 0.125 inch (3.175 mm) minimum clearance to adjacent tubes or structure.

MECH	INSP

1) Minimum clearance between any two adjacent tubes or between one single tube and any other adjacent engine part shall be 0.125 inch (3.175 mm) unless otherwise specified. Exceptions to this clearance requirement are permitted at specified locations where adjacent tubes are clipped together or where other local constraints will prevent tube contact at clearances below 0.125 inch (3.175 mm) minimum.

2) Minimum clearance refers only to clearance relative to tube and not to fittings or other attached hardware.

(c) Examine the tubes to make sure they are correctly attached at all support locations.

1) Replace all worn clamps.

2) Tighten all loose clamp bolts and brackets at all support points along the tube length.

3) Tighten all loose tube fittings.

(d) Examine the oil system tube connections, tube or manifold to component connections, and tube to case boss connections for leaks and loose connections.

1) No leaks or loose connections permitted.

2) Make all corrections as necessary.

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-401-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		01000 HRS	10202	006	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 2 OIL SYSTEM TUBING		ALL	4000

ZONES	ACCESS PANELS
421	425AL 426AR 427AL 428AR

MECH | INSP

MPD ITEM NUMBER

VISUALLY CHECK THE ENGINE 2 OIL SYSTEM TUBING FOR CONDITION, SECURITY AND LEAKS. N79-00-00-6A

1. Do the Inspection of the Oil System Tubing

A. References

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

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

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

(4) AMM 79-11-00/001, Engine Oil System

B. Prepare to Examine the Oil System Tubes

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

(1) Do the deactivation procedure for the thrust reverser for ground maintenance (AMM 78-31-00/201).

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

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

WARNING: OBEY THE INSTRUCTIONS IN THE PROCEDURE TO OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

MECH | INSP

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

C. Examine the Oil System Tubing

(1) Examine the tubes of the oil system for condition and if they are attached correctly.

(a) Visually examine the external oil system tubes for damage. See Table 601.

NOTE: It is not necessary to remove the tube to do the inspection to make sure the tube condition is satisfactory. Oil system tube dents are permitted for continued service if, visually, the tube OD is seen to not be decreased by more than 20 percent at any one location.
The Inspection Reference Table that follows is to help you identify specified areas and conditions whenever maintenance time permits inspection. Tube inspection should not be done only on the basis of this table. Table 601 does not imply that items or conditions listed are all-inclusive. Experience and judgement will continue to be an important part of any inspection program.

Table 601 - Inspection Reference Table
Continue In Service Limits For The Oil System Tubes

ITEM	INSPECT FOR	CONTINUE IN SERVICE LIMITS
Oil System Tubes	Cracks	None Permitted
	Corrosion and Stains	Permitted if it can be removed by light polishing with crocus cloth
	Loose Tube Nuts	None Permitted
	Loose or Broken Lockwire	None Permitted
	Nicks, Scratches, Chafing and Pitting	0.003 inch (0.076mm) maximum depth permitted in all locations
	Dents (without sharp edges or corners)	Permitted if the tubing OD is not decreased by more than 20 percent at each location. No dents permitted within 0.25 inch (6.25 mm) or less from the tube ferrule.
	Dents (with sharp edges or corners)	None Permitted

(b) Visually examine the external oil system tubes for 0.125 inch (3.175 mm) minimum clearance to adjacent tubes or structure.

MECH	INSP

1) Minimum clearance between any two adjacent tubes or between one single tube and any other adjacent engine part shall be 0.125 inch (3.175 mm) unless otherwise specified. Exceptions to this clearance requirement are permitted at specified locations where adjacent tubes are clipped together or where other local constraints will prevent tube contact at clearances below 0.125 inch (3.175 mm) minimum.

2) Minimum clearance refers only to clearance relative to tube and not to fittings or other attached hardware.

(c) Examine the tubes to make sure they are correctly attached at all support locations.

1) Replace all worn clamps.

2) Tighten all loose clamp bolts and brackets at all support points along the tube length.

3) Tighten all loose tube fittings.

(d) Examine the oil system tube connections, tube or manifold to component connections, and tube to case boss connections for leaks and loose connections.

1) No leaks or loose connections permitted.

2) Make all corrections as necessary.

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-402-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		01000 HRS	10202	005	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 1 FUEL/OIL COOLER		ALL	4000

ZONES	ACCESS PANELS
411	415AL

MECH	INSP	MPD ITEM NUMBER
		N79-21-01-A

VISUALLY CHECK THE ENGINE 1 FUEL/OIL COOLER FOR CONDITION, SECURITY AND LEAKS.

EFFECTIVITY

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-402-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		01000 HRS	10202	005	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 2 FUEL OIL COOLER		ALL	4000

ZONES	ACCESS PANELS
421	425AL

MECH	INSP	MPD ITEM NUMBER
		N79-21-01-A

VISUALLY CHECK THE ENGINE 2 FUEL/OIL COOLER FOR CONDITION, SECURITY AND LEAKS.

EFFECTIVITY

CHECK/INSP	ENGINE 2 FUEL OIL COOLER
N79-21-01-A	79-402-01-2 PAGE 1 OF 1 DEC 22/07

5
4
8
4

STATION		BOEING CARD NO.
TAIL NO.	SAS 767 TASK CARD	79-403-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		NOTE	99XXX	014	APR 22/06

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	ENGINE 1 MAIN OIL FILTER ELEMENT		ALL	4000

ZONES	ACCESS PANELS
411	413AL 415AL 417AL

MECH	INSP	MPD ITEM NUMBER

REPLACE THE ENGINE 1 MAIN OIL FILTER ELEMENT. N79-21-05-4A

INTERVAL NOTE:
FILTER REPLACEMENT INTERVAL IS DEPENDENT UPON CONFIGURATION AS FOLLOWS:

FOR THE SINGLE ELEMENT OIL FILTER CONFIGURATION:

1. INTERVAL: 500 HOURS.

2. INTERVAL: 2A
SB PW4ENG 72-552 OR SB PW4ENG 79-69 (PRATT & WHITNEY).
FOR PW4000 ENGINES THAT HAVE INCORPORATED ONE OR THE OTHER OF THE SERVICE BULLETINS.

FOR THE DUAL ELEMENT OIL FILTER CONFIGURATION (INCORPORATION OF PRATT AN WHITNEY SERVICE BULLETIN PW4ENG 72-525 OR EQUIVALENT)

1. INTERVAL: 500 HOURS.

2. INTERVAL: 2A
SB PWENG 79-73 (PRATT & WHITNEY).
FOR OPERATORS WHOSE ENTIRE FLEET FOR PW4000 ENGINES INCLUDING SPARES, HAVE INCORPORATED THE SERVICE BULLETINS OR EQUIVALENT BUT DO NOT HAVE THE -901 OR SUBSEQUENT EICAS SOFTWARE CONFIGURATION WITH THE "L/R ENG OIL FILTER" EICAS MESSAGE INHIBITED (OR REVISED AIRCRAFT PROCEDURE).

3. INTERVAL: 1600 HOURS
SBPW4ENG 79-73 (PRATT & WHITNEY).
FOR OPERATORS WHOSE ENTIRE FLEET OF PW4000 ENGINES INCLUDING SPARES, HAVE INCORPORATED THE SERVICE BULLETINS OR EQUIVALENT AND HAVE THE -901 OR SUBSEQUENT EICAS SOFTWARE CONFIGURATION WITH THE "L/R ENG OIL FILTER" EICAS MESSAGE INHIBITED (OR REVISED AIRCRAFT PROCEDURE).

MECH | INSP

NOTE: MRB FREQUENCY IS 2C.

MAIN OIL FILTER - REMOVAL/INSTALLATION

1. Remove the Main Oil Filter

A. Equipment

(1) Container - for engine oil - 5 U.S. gallons (19 liters) capacity

B. References

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

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

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

C. Prepare to Remove the Main Oil Filter

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

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

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

(3) Open the left core cowl panel (AMM 71-11-06/201).

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

(4) Open the left thrust reverser (AMM 78-31-00/201).

D. Remove the Main Oil Filter

MECH	INSP

WARNING: BEFORE YOU OPEN THE OIL TANK CAP, PERMIT A MINIMUM OF FIVE MINUTES AFTER ENGINE SHUTDOWN TO LET THE PRESSURE IN THE OIL TANK BLEED OFF. A FAST FLOW OF HOT OIL CAN OCCUR AND CAUSE INJURY TO YOU.

(1) Remove the lockwire which attaches the drain plug to the bottom of the insert.

(2) Put the container below the drain plug.

WARNING: DO NOT GET THE ENGINE OIL ON YOUR CLOTHES OR ON THE AIRPLANE. DO NOT KEEP THE ENGINE OIL ON YOUR SKIN FOR A LONG TIME. IF YOU DO NOT CLEAN THE ENGINE OIL OFF, THE ENGINE OIL CAN CAUSE INJURY.

CAUTION: IF YOU DO NOT CLEAN THE ENGINE OIL OFF, THE ENGINE OIL CAN CAUSE A STAIN ON YOUR CLOTHES AND THE PAINT WILL BECOME SOFT.

(3) ENGINES PRE-PW-SB 72-524;

Do the steps that follow (Fig. 401, View A):

(a) Hold the insert (8) in position with a wrench on the flats to remove the drain plug (10).

(b) Remove the drain plug (10) with the wrench.

1) Discard the packing (9) on the drain plug (10).

(c) Permit the housing of the main oil filter to drain.

WARNING: A TENSION FROM A SPRING IS ON THE FILTER COVER. HOLD THE FILTER COVER WITH YOUR HAND TO MAKE SURE THE FILTER COVER DOES NOT EJECT WHEN YOU REMOVE THE BOLTS.

(d) While you hold the filter cover in position with your hand, remove the bolts (11) and washers (12) which attach the filter cover (13).

(e) Remove the filter cover (13).

1) Discard the packing (6).

(f) Remove the main oil filter (2) from the filter housing (1).

1) Discard the main oil filter (2).

(4) ENGINES POST-PW-SB 72-524 AND PRE-PW-SB 79-79;

Do the steps that follow (Fig. 401, View C):

(a) Hold the insert (8) in position with a wrench on the flats to remove the drain plug (10).

(b) Remove the drain plug (10) with the wrench.

1) Discard the packing (9) on the drain plug (10).

(c) Permit the housing of the main oil filter to drain.

WARNING: A TENSION FROM A SPRING IS ON THE FILTER COVER. HOLD THE FILTER COVER WITH YOUR HAND TO MAKE SURE THE FILTER COVER DOES NOT EJECT WHEN YOU REMOVE THE BOLTS.

(d) While you hold the filter cover in position with your hand, remove the lockwire, nuts (14), and washers (12) which attach the filter cover (13).

1) If self-locking nuts were used, discard them.

(e) Remove the filter cover (13).

1) Discard the packing (6).

(f) Remove the main oil filter (2) from the filter housing (1).

1) Discard the main oil filter (2).

(5) ENGINES POST-PW-SB 72-524 AND POST-PW-SB 79-79;

Do the steps that follow (Fig. 401, View E):

(a) Hold the insert (8) in position with a wrench on the flats to remove the drain plug (10).

(b) Remove the drain plug (10) with the wrench.

MECH | INSP

1) Discard the packing (9) on the drain plug (10).

(c) Permit the housing of the main oil filter to drain.

WARNING: A TENSION FROM A SPRING IS ON THE FILTER COVER. HOLD THE FILTER COVER WITH YOUR HAND TO MAKE SURE THE FILTER COVER DOES NOT EJECT WHEN YOU REMOVE THE BOLTS.

(d) While you hold the filter cover in position with your hand, remove the lockwire, nuts (14), and washers (12) which attach filter cover (18).

(e) Remove the filter cover (18).

1) Discard the packing (6).

(f) Remove the main oil filter (2) from the filter housing (1).

1) Discard the main oil filter (2).

(6) ENGINES POST-PW-SB 72-525;

Do the steps that follow (Fig. 401, View G):

(a) Remove the drain plug (10) with the wrench.

1) Discard the packing (9) on the drain plug (10).

2) Permit the housing of the main oil filter to drain.

WARNING: A TENSION FROM A SPRING IS ON THE FILTER COVER. HOLD THE FILTER COVER WITH YOUR HAND TO MAKE SURE THE FILTER COVER DOES NOT EJECT WHEN YOU REMOVE THE BOLTS.

(b) While you hold the filter cover in position with your hand, remove the four self-locking nuts (14) and washers (12) on the main oil filter cover assembly (13).

NOTE: You can use plain nuts with wire holes as an alternate method.

(c) Remove the filter cover (13).

1) Discard the packing (6).

2) Discard the four self-locking nuts (14).

NOTE: Keep the nuts with the wire holes if they were used.

(d) Remove the main oil filter (19) from the filter housing (1).

(e) Remove the retaining ring (20) from the pressure relief valve (21).

(f) Remove the pressure relief valve (21) from the cover (13).

(7) Install protective caps into the housing of the main oil filter.

2. Install the Main Oil Filter

A. Equipment

(1) M303, M305, or M307 Bergen Mechanical Crimper
Bergen Cable Technologies Inc
170 Gregg St
P.O. Box 1300
Lodi, NJ 07644-9982

(2) D00137 Engine Oil - PWA 521

(3) G02332 Ferrule, Safety Cable (P05-292)

(4) G02334 Lockwire, (P05-289) 0.032 inch (0.813 mm) - AS3214-02

(5) G02335 Cable, Safety (P05-291)

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	2	Filter Element	79-21-06	01	60 62

C. References

MECH | INSP

(1) AMM 12-13-01/301, Engine - Oil Servicing

(2) AMM 71-00-00/501, Power Plant - General

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

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

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

D. Procedure (Fig. 401)

(1) Remove protective cap from the housing of the main oil filter.

(2) Clean the housing of any unwanted material.

CAUTION: THE MAIN OIL FILTERS HAVE A REMOVABLE PLUG WHICH YOU MUST INSTALL BEFORE YOU INSTALL THE MAIN OIL FILTER INTO THE HOUSING. IF YOU DO NOT INSTALL THE REMOVABLE PLUG, THE ENGINE OIL WILL NOT GO THROUGH THE MAIN OIL FILTER.

(3) ENGINES PRE-PW-SB 72-524;

Do the steps that follow (Fig. 401, View A):

(a) Install new packing (6), lubricated with engine oil, into groove in OD of main oil strainer cover (13).

(b) Install filter element (2) into opening in bottom of cover (13).

(c) Align bolt holes and install cover (13) with filter element (2) into main oil filter housing (1).

NOTE: The removable plug in the outboard end cap of the filter must be installed before you install the filter element into the cover.

MECH	INSP

CAUTION: MAKE SURE YOU INSTALL THIS PART CORRECTLY. IF YOU DO NOT INSTALL THE PART CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU INSTALL THE COVER CORRECTLY. DO NOT USE THE COVER RETAINING BOLTS TO PULL COVER INTO THE HOUSING. YOU CAN CAUSE DAMAGE TO THE PACKING.

(d) With the cover (13) in position on the housing (1), carefully push the cover on the housing until the flange of the cover touches the housing.

CAUTION: MAKE SURE YOU ATTACH THE COVER CORRECTLY. IF YOU DO NOT ATTACH THE COVER CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU TIGHTEN THE BOLTS CORRECTLY. MAKE SURE TO TIGHTEN THE COVER RETAINING BOLTS TO THE TORQUE SPECIFIED. IF YOU DO NOT TIGHTEN THE BOLTS AS SPECIFIED, AN INFLIGHT SHUTDOWN CAN OCCUR.

(e) Attach the cover (13) to the housing (1) with four washers (12) and bolts (11).

(f) Tighten the bolts (11) to 125-140 pound-inches (14.1-15.8 newton-meters).

CAUTION: THE MAIN OIL FILTERS HAVE A REMOVABLE PLUG WHICH YOU MUST INSTALL BEFORE YOU INSTALL THE MAIN OIL FILTER INTO THE HOUSING. IF YOU DO NOT INSTALL THE REMOVABLE PLUG, THE ENGINE OIL WILL NOT GO THROUGH THE MAIN OIL FILTER.

(4) ENGINES POST-PW-SB 72-524 AND PRE-PW-SB 79-79;

Do the steps that follow (Fig. 401, View C):

(a) Install new packing (6), lubricated with engine oil, into groove in OD of main oil strainer cover (13).

(b) Install filter element (2) into opening in bottom of cover (13).

(c) Align bolt holes and install cover (13) with filter element (2) into main oil filter housing (1).

NOTE: The removable plug in the outboard end cap of the filter must be installed before you install the filter element into the cover.

CAUTION: MAKE SURE YOU INSTALL THIS PART CORRECTLY. IF YOU DO NOT INSTALL THE PART CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU INSTALL THE COVER CORRECTLY. DO NOT USE THE COVER RETAINING NUTS TO PULL COVER INTO THE HOUSING. YOU CAN CAUSE DAMAGE TO THE PACKING.

(d) With the cover (13) in position over the studs in the housing, carefully push the cover on the housing until the flange of the cover touches the housing (1).

CAUTION: MAKE SURE YOU ATTACH THE COVER CORRECTLY. IF YOU DO NOT ATTACH THE COVER CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU TIGHTEN THE NUTS CORRECTLY. MAKE SURE TO TIGHTEN THE COVER RETAINING NUTS TO THE TORQUE SPECIFIED. IF YOU DO NOT TIGHTEN THE NUTS AS SPECIFIED, AN INFLIGHT SHUTDOWN CAN OCCUR.

CAUTION: DO NOT INSTALL THE REMOVED LOCK NUTS; USE NEW NUTS. THE LOCK PROPERTY OF THE NUT DECREASES WITH USE. IF THE NUT BACKS OUT BECAUSE OF THE DECREASED IN LOCK PROPERTY, OIL LOSS AND AN IN-FLIGHT-SHUTDOWN CAN OCCUR.

(e) Attach the cover (13) to the housing (1).

1) If self-locking nuts (14) are used:

a) Lubricate housing studs with engine oil.

b) Attach cover (13) to housing (1) with four washers (12) and nuts (14).

c) Tighten the nuts (14) to 150-170 pound-inches (16.9-19.2 newton-meters).

2) If hex nuts (14) with lockwire provisions are used:

a) Lubricate housing studs with engine oil.

b) Attach cover (13) to housing (1) with four washers (12) and nuts (14).

c) Tighten the nuts (14) to 125-150 pound-inches (14.1-16.9 newton-meters).

d) Attach the lockwire or safety cable and safety cable ferrule to the nuts (14).

CAUTION: THE MAIN OIL FILTERS HAVE A REMOVABLE PLUG WHICH YOU MUST REMOVE BEFORE YOU INSTALL THE MAIN OIL FILTER INTO THE HOUSING. IF YOU DO NOT REMOVE THE REMOVABLE PLUG, THE FILTER WILL NOT WORK CORRECTLY.

(5) ENGINES POST-PW-SB 72-524 AND POST-PW-SB 79-79;

Do the steps that follow (Fig. 401, View E):

(a) Install new packing (6), lubricated with engine oil, into groove in OD of main oil strainer cover (18).

(b) Install filter element (2) into opening in bottom of cover (18).

(c) Align bolt holes and install cover (18) with filter element (2) into main oil filter housing (1).

NOTE: The removable plug in the outboard end cap of the filter must be removed before you install the filter element into the cover.

CAUTION: MAKE SURE YOU INSTALL THIS PART CORRECTLY. IF YOU DO NOT INSTALL THE PART CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU INSTALL THE COVER CORRECTLY. DO NOT USE THE COVER RETAINING NUTS TO PULL COVER INTO THE HOUSING. YOU CAN CAUSE DAMAGE TO THE PACKING.

(d) With the cover (18) in position over the studs in the housing, carefully push the cover on the housing until the flange of the cover touches the housing (1).

CAUTION: MAKE SURE YOU ATTACH THE COVER CORRECTLY. IF YOU DO NOT ATTACH THE COVER CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU TIGHTEN THE NUTS CORRECTLY. MAKE SURE TO TIGHTEN THE COVER RETAINING NUTS TO THE TORQUE SPECIFIED. IF YOU DO NOT TIGHTEN THE NUTS AS SPECIFIED, AN INFLIGHT SHUTDOWN CAN OCCUR.

CAUTION: DO NOT INSTALL THE REMOVED LOCK NUTS; USE NEW NUTS. THE LOCK PROPERTY OF THE NUT DECREASES WITH USE. IF THE NUT BACKS OUT BECAUSE OF THE DECREASED IN LOCK PROPERTY, OIL LOSS AND AN IN-FLIGHT-SHUTDOWN CAN OCCUR.

(e) Attach the cover (18) to the housing (1).

1) If self-locking nuts (14) are used:

a) Lubricate housing studs with engine oil.

b) Attach cover (18) to housing (1) with four washers(12) and nuts (14).

c) Tighten the nuts (14) to 150-170 pound-inches (16.9-19.2 newton-meters).

2) If hex nuts (14) with lockwire provisions are used:

a) Lubricate housing studs with engine oil.

b) Attach cover (18) to housing (1) with four washers (12) and nuts (14).

c) Tighten the nuts (14) to 125-150 pound-inches (14.1-16.9 newton-meters).

d) Attach the lockwire or safety cable and safety cable ferrule to the nuts (14).

(6) Install new packing (7), lubricated with engine oil, on insert (8).

(7) Install insert (8), lubricated with engine oil, in opening in bottom of cover (13, 18).

(a) Tighten the insert (8) to 200-225 pound-inches (22.6-25.4 newton-meters).

(8) Install new packing (9), lubricated with engine oil, on plug (10).

(9) Install plug (10), lubricated with engine oil, into insert (8).

(a) Tighten the plug (10) to 110-120 pound-inches (12.4-13.6 newton-meters).

(b) Attach lockwire or safety cable and safety cable ferrule to plug (10).

(10) ENGINES POST-PW-SB 72-525;

Do the steps that follow (Fig. 401, View G):

(a) Install pressure relief valve (21) in center of cover (13).

(b) Attach retaining ring (20) to pressure relief valve (21).

(c) Install new packing (6), lubricated with engine oil, in groove in OD of main oil strainer cover (13).

(d) Remove the protective closure from the end of the filter element (19).

(e) Install the filter element (19) over the pressure relief valve (21) in cover (13).

MECH	INSP

1) Align bolt holes and dowel pin in cover (13) with studs and dowel pin hole in main oil filter housing (1), then install cover with filter element (19) into main oil filter housing.

NOTE: The removable plug in the outboard end cap of the filter must be removed before you install the filter element into the cover.

CAUTION: MAKE SURE YOU INSTALL THIS PART CORRECTLY. IF YOU DO NOT INSTALL THE PART CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU INSTALL THE COVER CORRECTLY. DO NOT USE THE COVER RETAINING NUTS TO PULL COVER INTO THE HOUSING. YOU CAN CAUSE DAMAGE TO THE PACKING.

(f) With the cover (13) in position over the studs and dowel pin hole in the housing (1), carefully push the cover on the housing until the flange of the cover touches the housing.

CAUTION: MAKE SURE YOU ATTACH THE COVER CORRECTLY. IF YOU DO NOT ATTACH THE COVER CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU TIGHTEN THE NUTS CORRECTLY. MAKE SURE TO TIGHTEN THE COVER RETAINING NUTS TO THE TORQUE SPECIFIED. IF YOU DO NOT TIGHTEN THE NUTS AS SPECIFIED, AN INFLIGHT SHUTDOWN CAN OCCUR.

CAUTION: DO NOT INSTALL THE REMOVED LOCK NUTS; USE NEW NUTS. THE LOCK PROPERTY OF THE NUT DECREASES WITH USE. IF THE NUT BACKS OUT BECAUSE OF THE DECREASED IN LOCK PROPERTY, OIL LOSS AND AN IN-FLIGHT-SHUTDOWN CAN OCCUR.

(g) Attach the cover (13) with four washers (12) and nuts (14).

(h) Tighten the nuts (14) to 150-170 pound-inches (16.9-19.2 newton-meters).

(i) Install packing (9), lubricated with engine oil, on plug (10).

MECH	INSP

(j) Install plug (10), lubricated with engine oil, into threaded hole in bottom of cover (13).

(k) Tighten the plug (10) to 110-120 pound-inches (12.4-13.6 newton-meters).

(l) Attach lockwire or safety cable and safety cable ferrule to plug (10).

(11) Do the servicing procedure for the engine (AMM 12-13-01/301).

E. Put the airplane back to its initial condition

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

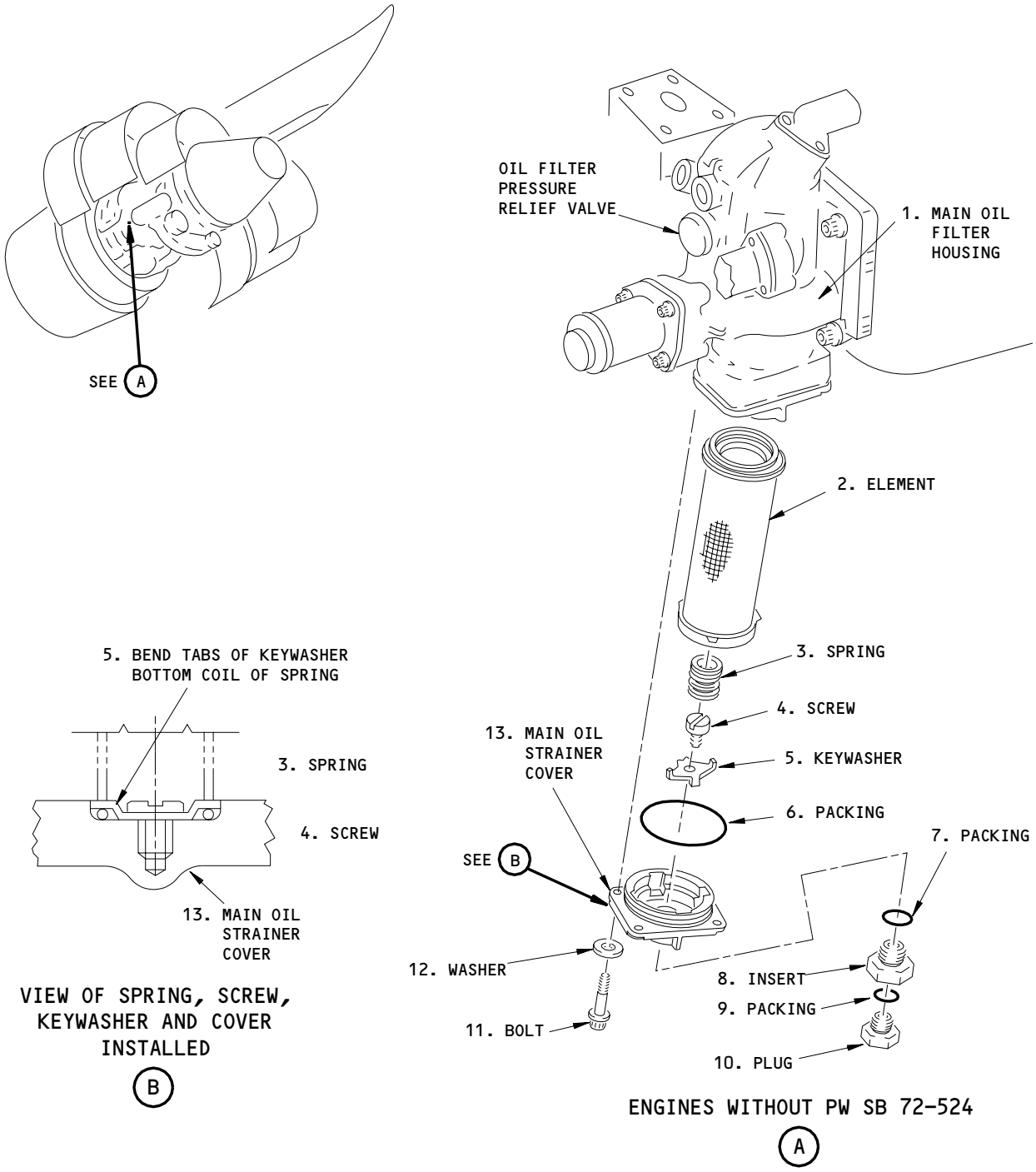
(1) Close the left thrust reverser (AMM 78-31-00/201).

(2) Close the left core cowl panel (AMM 71-11-06/201).

(3) Close the left fan cowl panel (AMM 71-11-04/201).

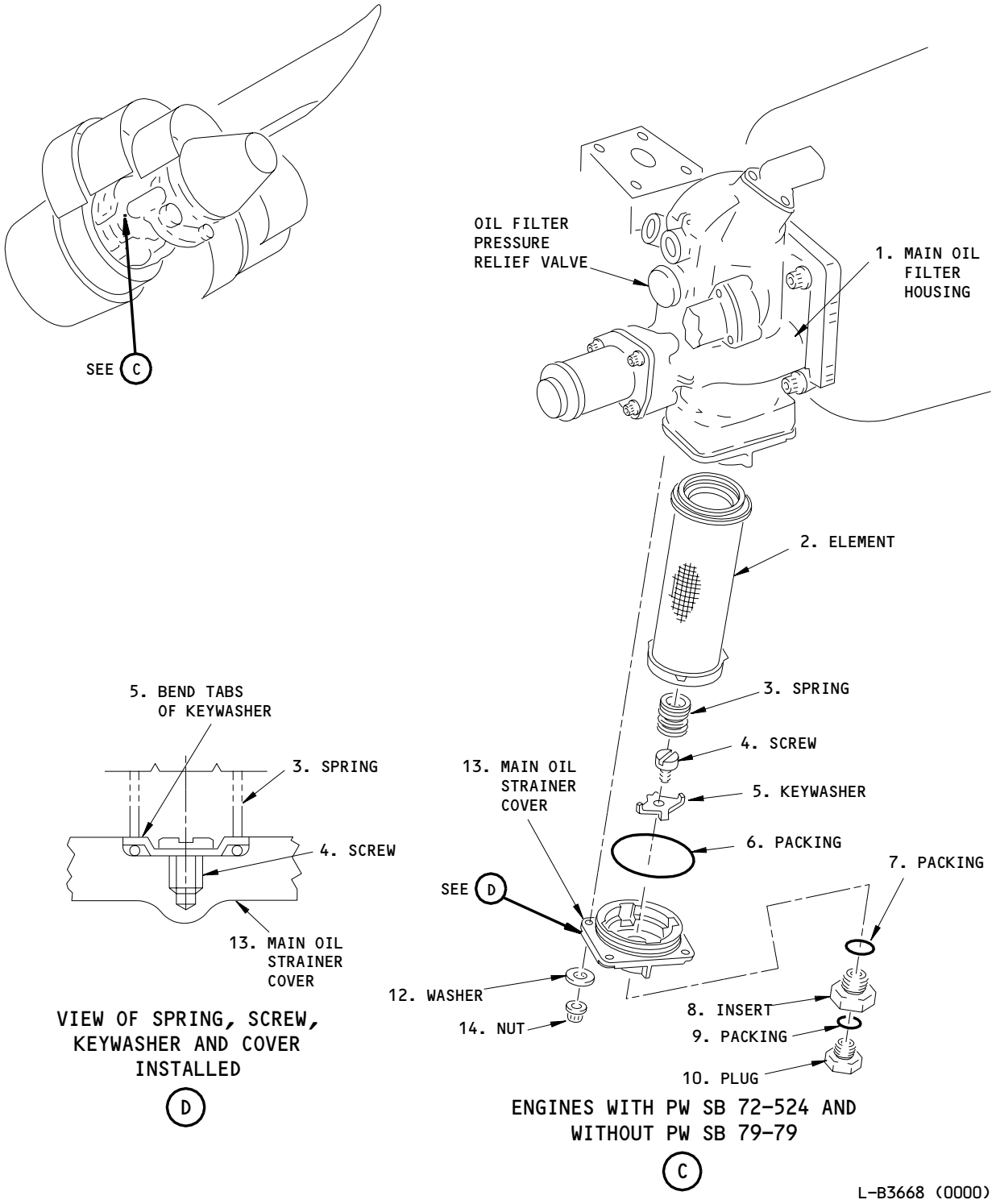
(4) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

(5) Do a test of the Main Oil Filter that is shown in the Power Plant Reference Table (AMM 71-00-00/501).

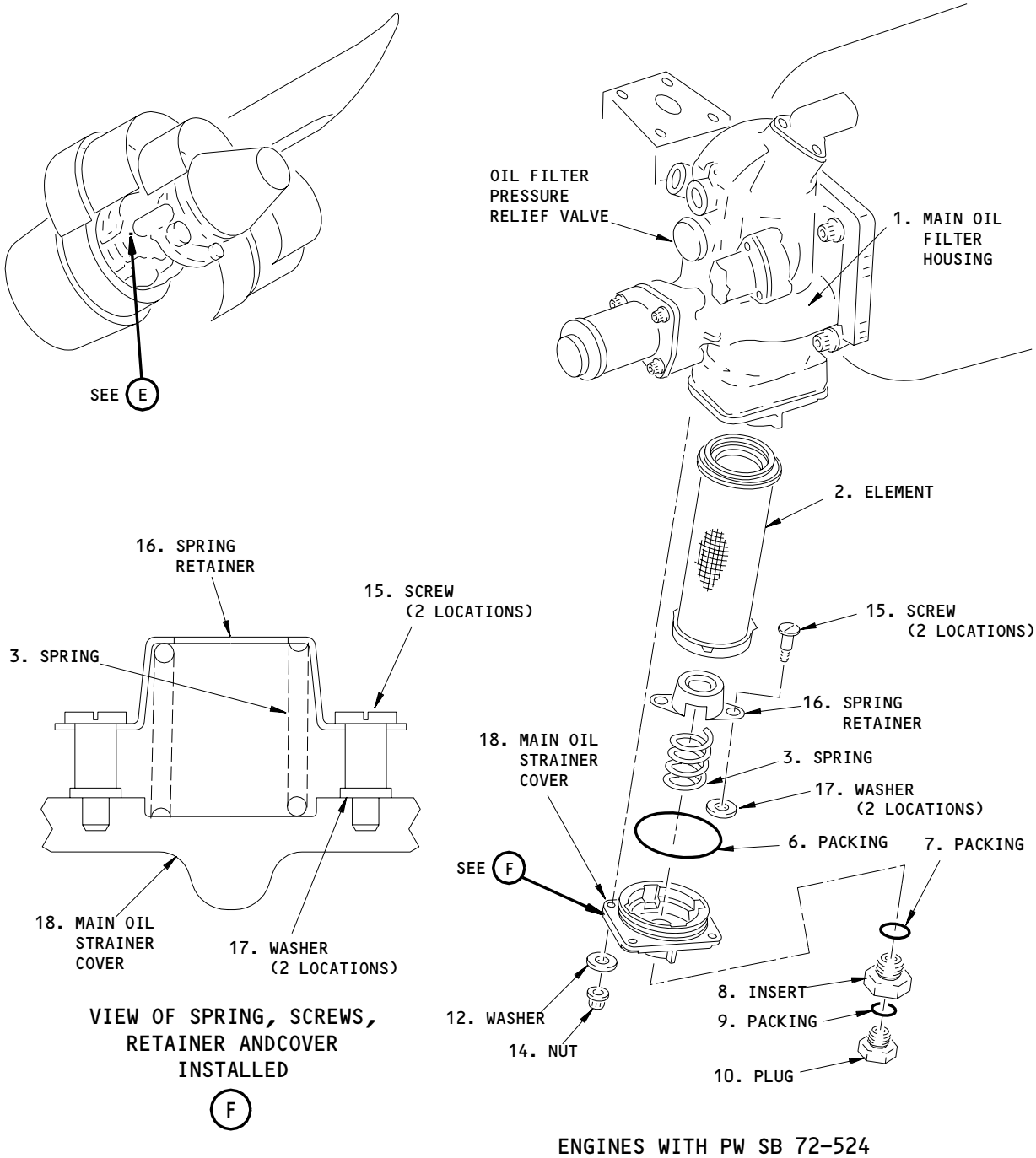


L-B3667 (0000)

Main Oil Filter Installation
Figure 401 (Sheet 1)



Main Oil Filter Installation
Figure 401 (Sheet 2)



VIEW OF SPRING, SCREWS, RETAINER ANDCOVER INSTALLED

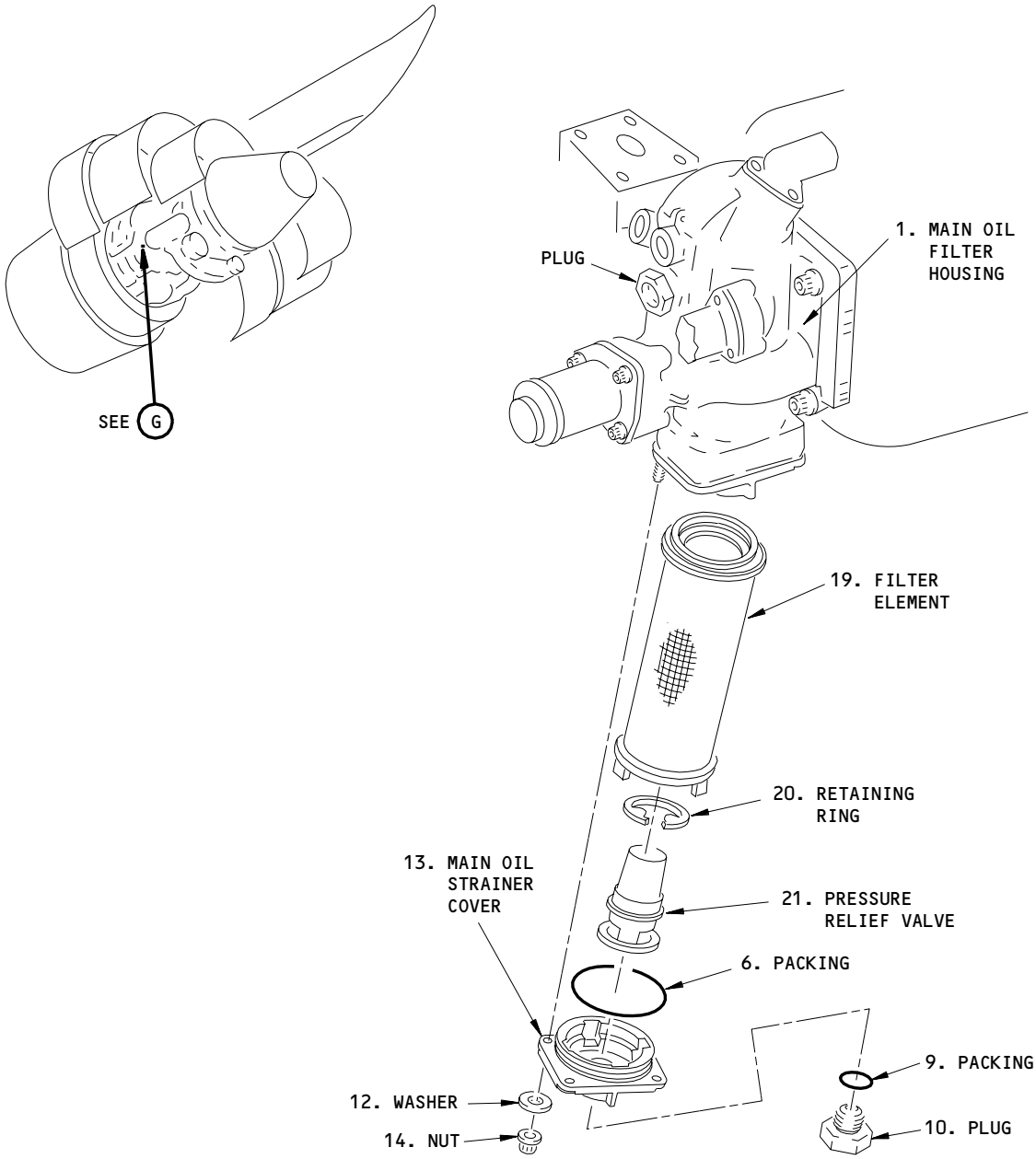
F

ENGINES WITH PW SB 72-524 AND PW SB 79-79

E

L-B3669 (0000)

Main Oil Filter Installation
Figure 401 (Sheet 3)



ENGINES WITH PW SB 72-525

G

L-B3670 (0000)

Main Oil Filter Installation
Figure 401 (Sheet 4)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-403-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		NOTE	99XXX	014	APR 22/06

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	ENGINE 2 MAIN OIL FILTER ELEMENT		ALL	4000

ZONES	ACCESS PANELS
421	423AL 425AL 427AL

MECH | INSP

MPD ITEM NUMBER

REPLACE THE ENGINE 2 MAIN OIL FILTER ELEMENT. N79-21-05-4A

INTERVAL NOTE:
FILTER REPLACEMENT INTERVAL IS DEPENDENT UPON CONFIGURATION AS FOLLOWS:

FOR THE SINGLE ELEMENT OIL FILTER CONFIGURATION:

1. INTERVAL: 500 HOURS.

2. INTERVAL: 2A
SB PW4ENG 72-552 OR SB PW4ENG 79-69 (PRATT & WHITNEY).
FOR PW4000 ENGINES THAT HAVE INCORPORATED ONE OR THE OTHER OF THE SERVICE BULLETINS.

FOR THE DUAL ELEMENT OIL FILTER CONFIGURATION (INCORPORATION OF PRATT AN WHITNEY SERVICE BULLETIN PW4ENG 72-525 OR EQUIVALENT)

1. INTERVAL: 500 HOURS.

2. INTERVAL: 2A
SB PWENG 79-73 (PRATT & WHITNEY).
FOR OPERATORS WHOSE ENTIRE FLEET FOR PW4000 ENGINES INCLUDING SPARES, HAVE INCORPORATED THE SERVICE BULLETINS OR EQUIVALENT BUT DO NOT HAVE THE -901 OR SUBSEQUENT EICAS SOFTWARE CONFIGURATION WITH THE "L/R ENG OIL FILTER" EICAS MESSAGE INHIBITED (OR REVISED AIRCRAFT PROCEDURE).

3. INTERVAL: 1600 HOURS
SBPW4ENG 79-73 (PRATT & WHITNEY).
FOR OPERATORS WHOSE ENTIRE FLEET OF PW4000 ENGINES INCLUDING SPARES, HAVE INCORPORATED THE SERVICE BULLETINS OR EQUIVALENT AND HAVE THE -901 OR SUBSEQUENT EICAS SOFTWARE CONFIGURATION WITH THE "L/R ENG OIL FILTER" EICAS MESSAGE INHIBITED (OR REVISED AIRCRAFT PROCEDURE).

MECH	INSP

NOTE: MRB FREQUENCY IS 2C.

MAIN OIL FILTER - REMOVAL/INSTALLATION

1. Remove the Main Oil Filter

A. Equipment

(1) Container - for engine oil - 5 U.S. gallons (19 liters) capacity

B. References

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

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

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

C. Prepare to Remove the Main Oil Filter

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

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

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

(3) Open the left core cowl panel (AMM 71-11-06/201).

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

(4) Open the left thrust reverser (AMM 78-31-00/201).

D. Remove the Main Oil Filter

MECH | INSP

WARNING: BEFORE YOU OPEN THE OIL TANK CAP, PERMIT A MINIMUM OF FIVE MINUTES AFTER ENGINE SHUTDOWN TO LET THE PRESSURE IN THE OIL TANK BLEED OFF. A FAST FLOW OF HOT OIL CAN OCCUR AND CAUSE INJURY TO YOU.

(1) Remove the lockwire which attaches the drain plug to the bottom of the insert.

(2) Put the container below the drain plug.

WARNING: DO NOT GET THE ENGINE OIL ON YOUR CLOTHES OR ON THE AIRPLANE. DO NOT KEEP THE ENGINE OIL ON YOUR SKIN FOR A LONG TIME. IF YOU DO NOT CLEAN THE ENGINE OIL OFF, THE ENGINE OIL CAN CAUSE INJURY.

CAUTION: IF YOU DO NOT CLEAN THE ENGINE OIL OFF, THE ENGINE OIL CAN CAUSE A STAIN ON YOUR CLOTHES AND THE PAINT WILL BECOME SOFT.

(3) ENGINES PRE-PW-SB 72-524;

Do the steps that follow (Fig. 401, View A):

(a) Hold the insert (8) in position with a wrench on the flats to remove the drain plug (10).

(b) Remove the drain plug (10) with the wrench.

1) Discard the packing (9) on the drain plug (10).

(c) Permit the housing of the main oil filter to drain.

WARNING: A TENSION FROM A SPRING IS ON THE FILTER COVER. HOLD THE FILTER COVER WITH YOUR HAND TO MAKE SURE THE FILTER COVER DOES NOT EJECT WHEN YOU REMOVE THE BOLTS.

(d) While you hold the filter cover in position with your hand, remove the bolts (11) and washers (12) which attach the filter cover (13).

(e) Remove the filter cover (13).

MECH | INSP

1) Discard the packing (6).

(f) Remove the main oil filter (2) from the filter housing (1).

1) Discard the main oil filter (2).

(4) ENGINES POST-PW-SB 72-524 AND PRE-PW-SB 79-79;

Do the steps that follow (Fig. 401, View C):

(a) Hold the insert (8) in position with a wrench on the flats to remove the drain plug (10).

(b) Remove the drain plug (10) with the wrench.

1) Discard the packing (9) on the drain plug (10).

(c) Permit the housing of the main oil filter to drain.

WARNING: A TENSION FROM A SPRING IS ON THE FILTER COVER. HOLD THE FILTER COVER WITH YOUR HAND TO MAKE SURE THE FILTER COVER DOES NOT EJECT WHEN YOU REMOVE THE BOLTS.

(d) While you hold the filter cover in position with your hand, remove the lockwire, nuts (14), and washers (12) which attach the filter cover (13).

1) If self-locking nuts were used, discard them.

(e) Remove the filter cover (13).

1) Discard the packing (6).

(f) Remove the main oil filter (2) from the filter housing (1).

1) Discard the main oil filter (2).

(5) ENGINES POST-PW-SB 72-524 AND POST-PW-SB 79-79;

Do the steps that follow (Fig. 401, View E):

(a) Hold the insert (8) in position with a wrench on the flats to remove the drain plug (10).

(b) Remove the drain plug (10) with the wrench.

MECH | INSP

1) Discard the packing (9) on the drain plug (10).

(c) Permit the housing of the main oil filter to drain.

WARNING: A TENSION FROM A SPRING IS ON THE FILTER COVER. HOLD THE FILTER COVER WITH YOUR HAND TO MAKE SURE THE FILTER COVER DOES NOT EJECT WHEN YOU REMOVE THE BOLTS.

(d) While you hold the filter cover in position with your hand, remove the lockwire, nuts (14), and washers (12) which attach filter cover (18).

(e) Remove the filter cover (18).

1) Discard the packing (6).

(f) Remove the main oil filter (2) from the filter housing (1).

1) Discard the main oil filter (2).

(6) ENGINES POST-PW-SB 72-525;

Do the steps that follow (Fig. 401, View G):

(a) Remove the drain plug (10) with the wrench.

1) Discard the packing (9) on the drain plug (10).

2) Permit the housing of the main oil filter to drain.

WARNING: A TENSION FROM A SPRING IS ON THE FILTER COVER. HOLD THE FILTER COVER WITH YOUR HAND TO MAKE SURE THE FILTER COVER DOES NOT EJECT WHEN YOU REMOVE THE BOLTS.

(b) While you hold the filter cover in position with your hand, remove the four self-locking nuts (14) and washers (12) on the main oil filter cover assembly (13).

NOTE: You can use plain nuts with wire holes as an alternate method.

(c) Remove the filter cover (13).

1) Discard the packing (6).

2) Discard the four self-locking nuts (14).

NOTE: Keep the nuts with the wire holes if they were used.

(d) Remove the main oil filter (19) from the filter housing (1).

(e) Remove the retaining ring (20) from the pressure relief valve (21).

(f) Remove the pressure relief valve (21) from the cover (13).

(7) Install protective caps into the housing of the main oil filter.

2. Install the Main Oil Filter

A. Equipment

(1) M303, M305, or M307 Bergen Mechanical Crimper
Bergen Cable Technologies Inc
170 Gregg St
P.O. Box 1300
Lodi, NJ 07644-9982

(2) D00137 Engine Oil - PWA 521

(3) G02332 Ferrule, Safety Cable (P05-292)

(4) G02334 Lockwire, (P05-289) 0.032 inch (0.813 mm) - AS3214-02

(5) G02335 Cable, Safety (P05-291)

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	2	Filter Element	79-21-06	01	60 62

C. References

MECH | INSP

(1) AMM 12-13-01/301, Engine - Oil Servicing

(2) AMM 71-00-00/501, Power Plant - General

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

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

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

D. Procedure (Fig. 401)

(1) Remove protective cap from the housing of the main oil filter.

(2) Clean the housing of any unwanted material.

CAUTION: THE MAIN OIL FILTERS HAVE A REMOVABLE PLUG WHICH YOU MUST INSTALL BEFORE YOU INSTALL THE MAIN OIL FILTER INTO THE HOUSING. IF YOU DO NOT INSTALL THE REMOVABLE PLUG, THE ENGINE OIL WILL NOT GO THROUGH THE MAIN OIL FILTER.

(3) ENGINES PRE-PW-SB 72-524;

Do the steps that follow (Fig. 401, View A):

(a) Install new packing (6), lubricated with engine oil, into groove in OD of main oil strainer cover (13).

(b) Install filter element (2) into opening in bottom of cover (13).

(c) Align bolt holes and install cover (13) with filter element (2) into main oil filter housing (1).

NOTE: The removable plug in the outboard end cap of the filter must be installed before you install the filter element into the cover.

MECH	INSP

CAUTION: MAKE SURE YOU INSTALL THIS PART CORRECTLY. IF YOU DO NOT INSTALL THE PART CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU INSTALL THE COVER CORRECTLY. DO NOT USE THE COVER RETAINING BOLTS TO PULL COVER INTO THE HOUSING. YOU CAN CAUSE DAMAGE TO THE PACKING.

(d) With the cover (13) in position on the housing (1), carefully push the cover on the housing until the flange of the cover touches the housing.

CAUTION: MAKE SURE YOU ATTACH THE COVER CORRECTLY. IF YOU DO NOT ATTACH THE COVER CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU TIGHTEN THE BOLTS CORRECTLY. MAKE SURE TO TIGHTEN THE COVER RETAINING BOLTS TO THE TORQUE SPECIFIED. IF YOU DO NOT TIGHTEN THE BOLTS AS SPECIFIED, AN INFLIGHT SHUTDOWN CAN OCCUR.

(e) Attach the cover (13) to the housing (1) with four washers (12) and bolts (11).

(f) Tighten the bolts (11) to 125-140 pound-inches (14.1-15.8 newton-meters).

CAUTION: THE MAIN OIL FILTERS HAVE A REMOVABLE PLUG WHICH YOU MUST INSTALL BEFORE YOU INSTALL THE MAIN OIL FILTER INTO THE HOUSING. IF YOU DO NOT INSTALL THE REMOVABLE PLUG, THE ENGINE OIL WILL NOT GO THROUGH THE MAIN OIL FILTER.

(4) ENGINES POST-PW-SB 72-524 AND PRE-PW-SB 79-79;

Do the steps that follow (Fig. 401, View C):

(a) Install new packing (6), lubricated with engine oil, into groove in OD of main oil strainer cover (13).

(b) Install filter element (2) into opening in bottom of cover (13).

MECH	INSP

(c) Align bolt holes and install cover (13) with filter element (2) into main oil filter housing (1).

NOTE: The removable plug in the outboard end cap of the filter must be installed before you install the filter element into the cover.

CAUTION: MAKE SURE YOU INSTALL THIS PART CORRECTLY. IF YOU DO NOT INSTALL THE PART CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU INSTALL THE COVER CORRECTLY. DO NOT USE THE COVER RETAINING NUTS TO PULL COVER INTO THE HOUSING. YOU CAN CAUSE DAMAGE TO THE PACKING.

(d) With the cover (13) in position over the studs in the housing, carefully push the cover on the housing until the flange of the cover touches the housing (1).

CAUTION: MAKE SURE YOU ATTACH THE COVER CORRECTLY. IF YOU DO NOT ATTACH THE COVER CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU TIGHTEN THE NUTS CORRECTLY. MAKE SURE TO TIGHTEN THE COVER RETAINING NUTS TO THE TORQUE SPECIFIED. IF YOU DO NOT TIGHTEN THE NUTS AS SPECIFIED, AN INFLIGHT SHUTDOWN CAN OCCUR.

CAUTION: DO NOT INSTALL THE REMOVED LOCK NUTS; USE NEW NUTS. THE LOCK PROPERTY OF THE NUT DECREASES WITH USE. IF THE NUT BACKS OUT BECAUSE OF THE DECREASED IN LOCK PROPERTY, OIL LOSS AND AN IN-FLIGHT-SHUTDOWN CAN OCCUR.

(e) Attach the cover (13) to the housing (1).

1) If self-locking nuts (14) are used:

a) Lubricate housing studs with engine oil.

b) Attach cover (13) to housing (1) with four washers (12) and nuts (14).

c) Tighten the nuts (14) to 150-170 pound-inches (16.9-19.2 newton-meters).

2) If hex nuts (14) with lockwire provisions are used:

a) Lubricate housing studs with engine oil.

b) Attach cover (13) to housing (1) with four washers (12) and nuts (14).

c) Tighten the nuts (14) to 125-150 pound-inches (14.1-16.9 newton-meters).

d) Attach the lockwire or safety cable and safety cable ferrule to the nuts (14).

CAUTION: THE MAIN OIL FILTERS HAVE A REMOVABLE PLUG WHICH YOU MUST REMOVE BEFORE YOU INSTALL THE MAIN OIL FILTER INTO THE HOUSING. IF YOU DO NOT REMOVE THE REMOVABLE PLUG, THE FILTER WILL NOT WORK CORRECTLY.

(5) ENGINES POST-PW-SB 72-524 AND POST-PW-SB 79-79;

Do the steps that follow (Fig. 401, View E):

(a) Install new packing (6), lubricated with engine oil, into groove in OD of main oil strainer cover (18).

(b) Install filter element (2) into opening in bottom of cover (18).

(c) Align bolt holes and install cover (18) with filter element (2) into main oil filter housing (1).

NOTE: The removable plug in the outboard end cap of the filter must be removed before you install the filter element into the cover.

MECH | INSP

CAUTION: MAKE SURE YOU INSTALL THIS PART CORRECTLY. IF YOU DO NOT INSTALL THE PART CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU INSTALL THE COVER CORRECTLY. DO NOT USE THE COVER RETAINING NUTS TO PULL COVER INTO THE HOUSING. YOU CAN CAUSE DAMAGE TO THE PACKING.

(d) With the cover (18) in position over the studs in the housing, carefully push the cover on the housing until the flange of the cover touches the housing (1).

CAUTION: MAKE SURE YOU ATTACH THE COVER CORRECTLY. IF YOU DO NOT ATTACH THE COVER CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU TIGHTEN THE NUTS CORRECTLY. MAKE SURE TO TIGHTEN THE COVER RETAINING NUTS TO THE TORQUE SPECIFIED. IF YOU DO NOT TIGHTEN THE NUTS AS SPECIFIED, AN INFLIGHT SHUTDOWN CAN OCCUR.

CAUTION: DO NOT INSTALL THE REMOVED LOCK NUTS; USE NEW NUTS. THE LOCK PROPERTY OF THE NUT DECREASES WITH USE. IF THE NUT BACKS OUT BECAUSE OF THE DECREASED IN LOCK PROPERTY, OIL LOSS AND AN IN-FLIGHT-SHUTDOWN CAN OCCUR.

(e) Attach the cover (18) to the housing (1).

1) If self-locking nuts (14) are used:

a) Lubricate housing studs with engine oil.

b) Attach cover (18) to housing (1) with four washers(12) and nuts (14).

c) Tighten the nuts (14) to 150-170 pound-inches (16.9-19.2 newton-meters).

2) If hex nuts (14) with lockwire provisions are used:

a) Lubricate housing studs with engine oil.

b) Attach cover (18) to housing (1) with four washers (12) and nuts (14).

c) Tighten the nuts (14) to 125-150 pound-inches (14.1-16.9 newton-meters).

d) Attach the lockwire or safety cable and safety cable ferrule to the nuts (14).

(6) Install new packing (7), lubricated with engine oil, on insert (8).

(7) Install insert (8), lubricated with engine oil, in opening in bottom of cover (13, 18).

(a) Tighten the insert (8) to 200-225 pound-inches (22.6-25.4 newton-meters).

(8) Install new packing (9), lubricated with engine oil, on plug (10).

(9) Install plug (10), lubricated with engine oil, into insert (8).

(a) Tighten the plug (10) to 110-120 pound-inches (12.4-13.6 newton-meters).

(b) Attach lockwire or safety cable and safety cable ferrule to plug (10).

(10) ENGINES POST-PW-SB 72-525;

Do the steps that follow (Fig. 401, View G):

(a) Install pressure relief valve (21) in center of cover (13).

(b) Attach retaining ring (20) to pressure relief valve (21).

(c) Install new packing (6), lubricated with engine oil, in groove in OD of main oil strainer cover (13).

(d) Remove the protective closure from the end of the filter element (19).

(e) Install the filter element (19) over the pressure relief valve (21) in cover (13).

MECH | INSP

1) Align bolt holes and dowel pin in cover (13) with studs and dowel pin hole in main oil filter housing (1), then install cover with filter element (19) into main oil filter housing.

NOTE: The removable plug in the outboard end cap of the filter must be removed before you install the filter element into the cover.

CAUTION: MAKE SURE YOU INSTALL THIS PART CORRECTLY. IF YOU DO NOT INSTALL THE PART CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU INSTALL THE COVER CORRECTLY. DO NOT USE THE COVER RETAINING NUTS TO PULL COVER INTO THE HOUSING. YOU CAN CAUSE DAMAGE TO THE PACKING.

(f) With the cover (13) in position over the studs and dowel pin hole in the housing (1), carefully push the cover on the housing until the flange of the cover touches the housing.

CAUTION: MAKE SURE YOU ATTACH THE COVER CORRECTLY. IF YOU DO NOT ATTACH THE COVER CORRECTLY, AN INFLIGHT ENGINE SHUTDOWN CAN OCCUR.

CAUTION: MAKE SURE YOU TIGHTEN THE NUTS CORRECTLY. MAKE SURE TO TIGHTEN THE COVER RETAINING NUTS TO THE TORQUE SPECIFIED. IF YOU DO NOT TIGHTEN THE NUTS AS SPECIFIED, AN INFLIGHT SHUTDOWN CAN OCCUR.

CAUTION: DO NOT INSTALL THE REMOVED LOCK NUTS; USE NEW NUTS. THE LOCK PROPERTY OF THE NUT DECREASES WITH USE. IF THE NUT BACKS OUT BECAUSE OF THE DECREASED IN LOCK PROPERTY, OIL LOSS AND AN IN-FLIGHT-SHUTDOWN CAN OCCUR.

(g) Attach the cover (13) with four washers (12) and nuts (14).

(h) Tighten the nuts (14) to 150-170 pound-inches (16.9-19.2 newton-meters).

(i) Install packing (9), lubricated with engine oil, on plug (10).

MECH | INSP

(j) Install plug (10), lubricated with engine oil, into threaded hole in bottom of cover (13).

(k) Tighten the plug (10) to 110-120 pound-inches (12.4-13.6 newton-meters).

(l) Attach lockwire or safety cable and safety cable ferrule to plug (10).

(11) Do the servicing procedure for the engine (AMM 12-13-01/301).

E. Put the airplane back to its initial condition

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

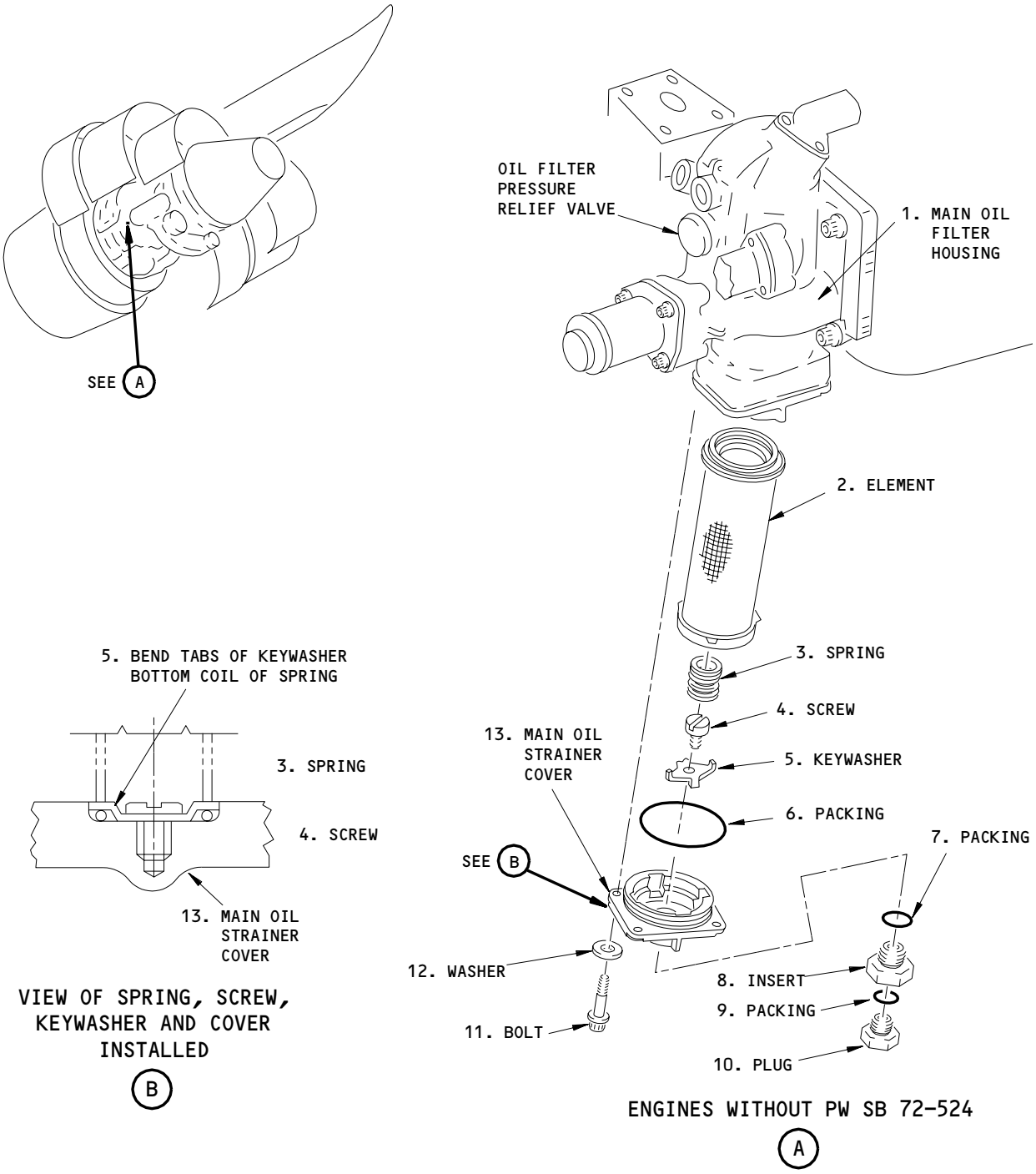
(1) Close the left thrust reverser (AMM 78-31-00/201).

(2) Close the left core cowl panel (AMM 71-11-06/201).

(3) Close the left fan cowl panel (AMM 71-11-04/201).

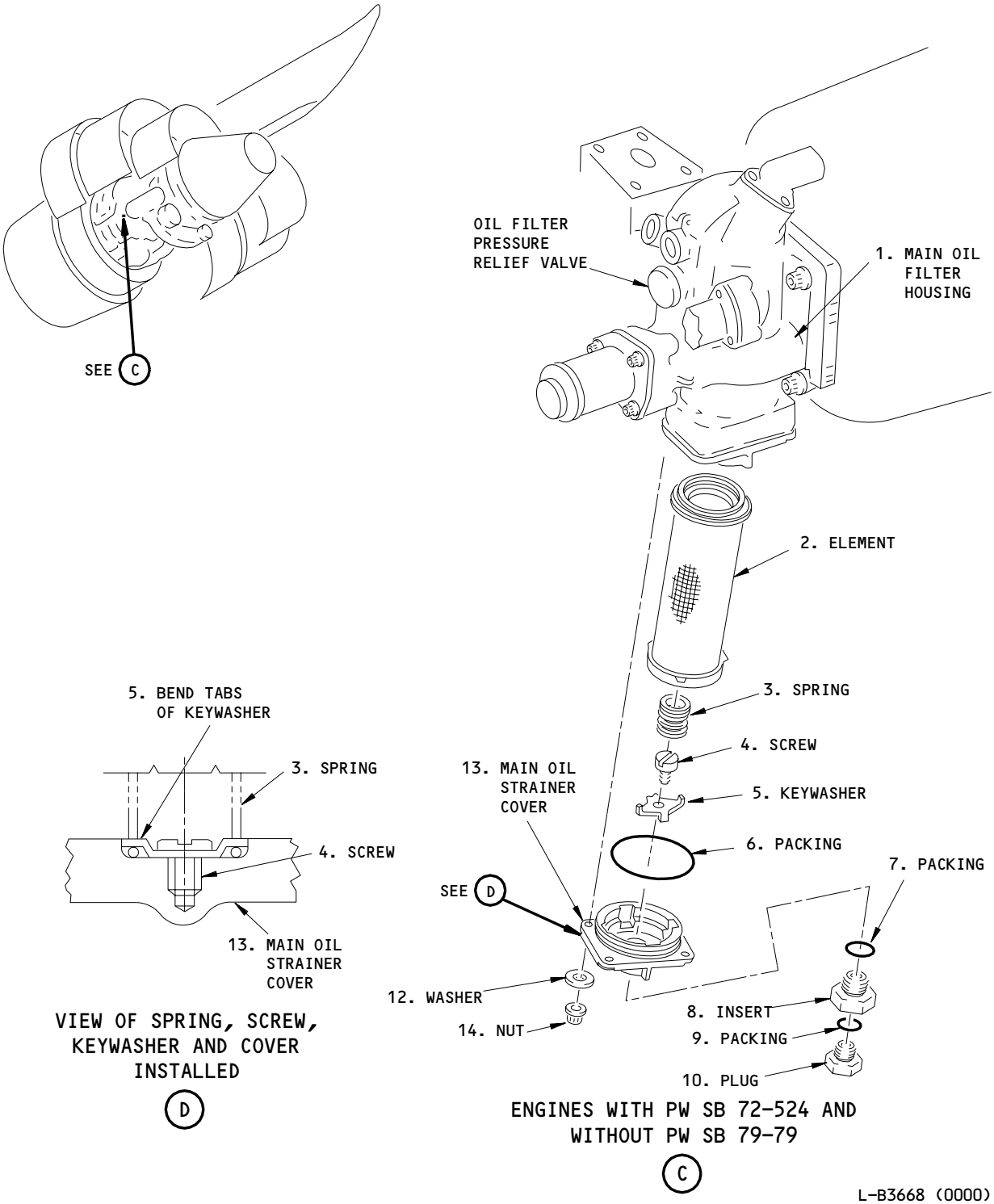
(4) Do the activation procedure for the thrust reverser (AMM 78-31-00/201).

(5) Do a test of the Main Oil Filter that is shown in the Power Plant Reference Table (AMM 71-00-00/501).

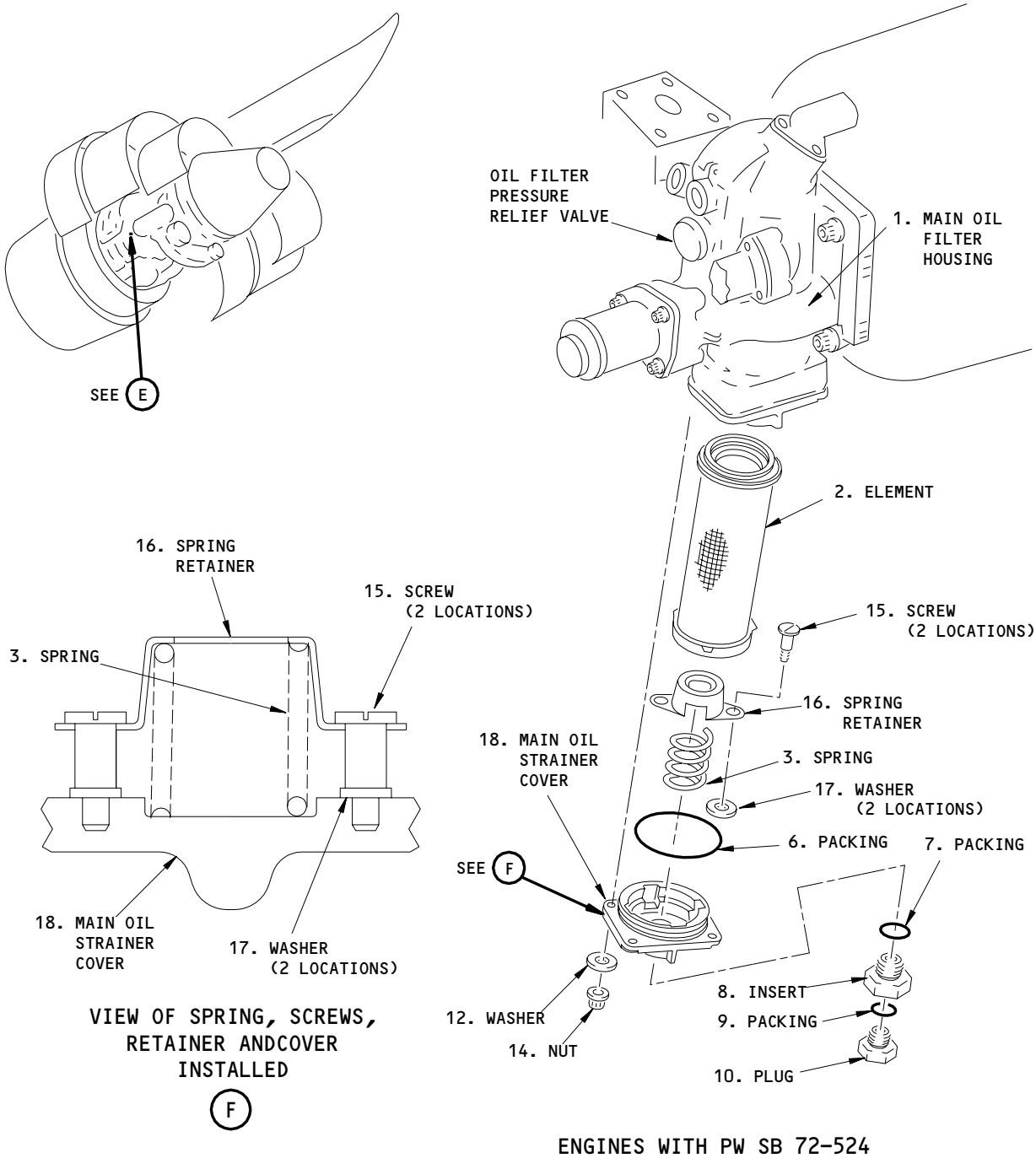


L-B3667 (0000)

Main Oil Filter Installation
Figure 401 (Sheet 1)



Main Oil Filter Installation
Figure 401 (Sheet 2)



VIEW OF SPRING, SCREWS, RETAINER ANDCOVER INSTALLED

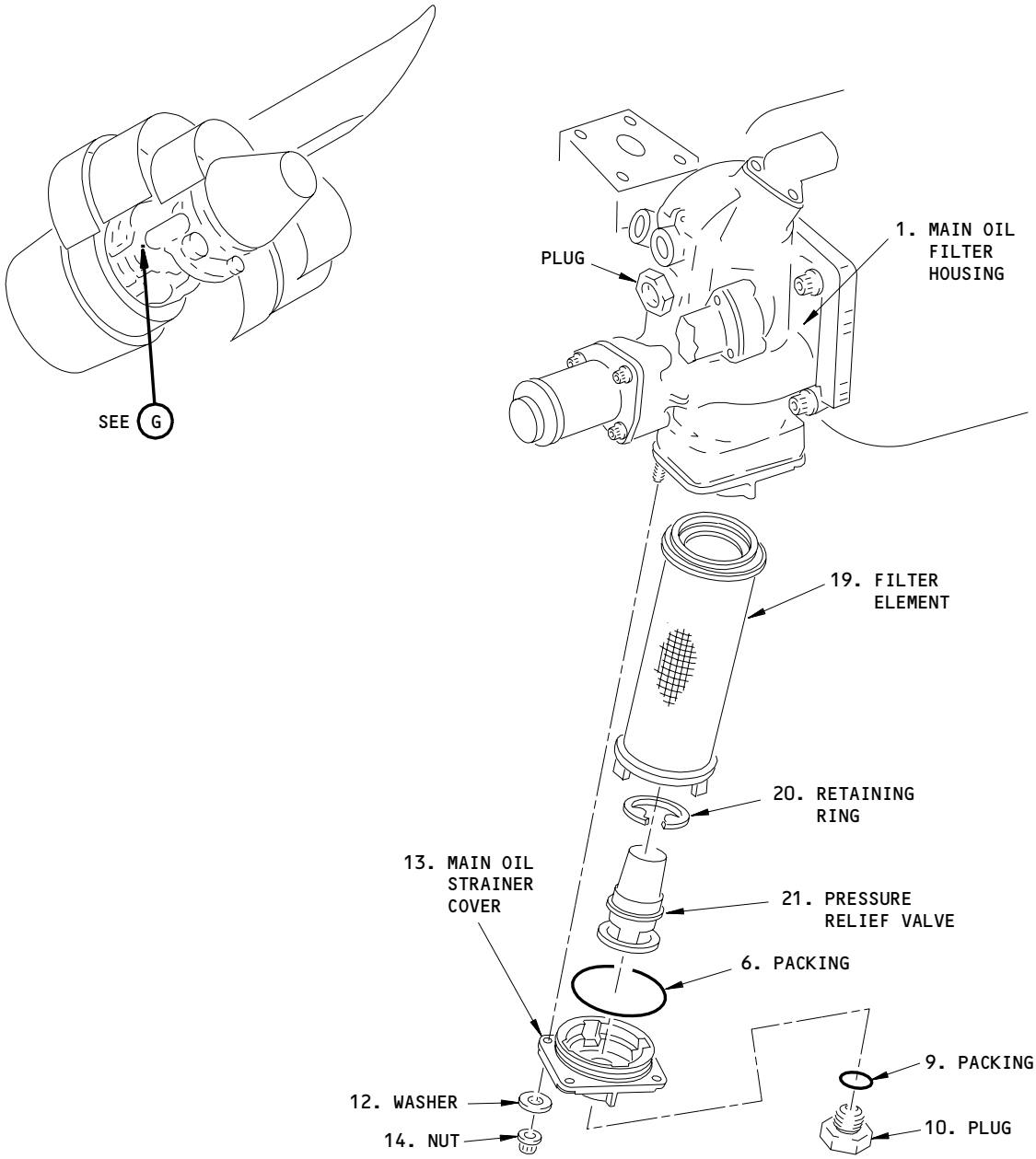
F

ENGINES WITH PW SB 72-524 AND PW SB 79-79

E

L-B3669 (0000)

Main Oil Filter Installation
Figure 401 (Sheet 3)



Main Oil Filter Installation
Figure 401 (Sheet 4)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-409-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		00048 HRS	NOTE	002DY	010	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
SERVICE	ENGINE 1 OIL LEVEL		ALL	4000

ZONES	ACCESS PANELS
411	417BL

MECH | INSP

MPD ITEM NUMBER

CHECK THE ENGINE 1 OIL LEVEL AND SERVICE AS NECESSARY. 12-13-01-3A

INTERVAL NOTE: 48 ELAPSED CLOCK HOURS.

1. General

A. This procedure includes two tasks to fill the engine oil tank. The first task is for the engines that have not incorporated PW Service Bulletins 79-47 and 79-65 (engines with the cutaway oil tank end). The second task is for the engines that have incorporated PW Service Bulletins 79-47 and 79-65.

B. Refer to PW SB 238 for information on approved oil brands, oil types, and instructions for changeover to a different brand or type of oil.

C. ENGINES PRE-PW-SB 79-47;
The oil tank have a filler neck connector between the oil tank boss and the filler neck valve.

D. ENGINES POST-PW-SB 79-47 AND POST-PW-79-65;
(ENGINES WITH THE CUTAWAY OIL TANK END);
The oil tanks do not have a filler neck connector.

E. You can get access to the oil tank cap through the oil access door on the left core cowl panel.

2. Engine Oil Servicing (Fig. 301)

A. Equipment

(1) Adapter - PWA 86018, Oil Sampler (Optional)

(2) Container - 5 U.S. gallons (19 liters) for oil

B. Consumable Materials

MECH | INSP

(1) D00390 Oil - Engine

C. References

(1) AMM 71-00-00/201, Power Plant

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

(3) AMM 79-11-03/201, Engine Oil Tank Cap

(4) AMM 79-21-10/401, Magnetic Chip Detectors

D. Prepare for Engine Oil Servicing

CAUTION: YOU MUST OBEY THE TIME LIMITS IN THE STEPS THAT FOLLOW WHEN YOU FILL THE ENGINE WITH ENGINE OIL. A FAILURE TO DO THIS CAN CAUSE AN INCORRECT SERVICING OF THE ENGINE OIL TANK AND DAMAGE TO THE ENGINE.

(1) Examine the oil level.

NOTE: You must fill the engine oil tank from (15) fifteen minutes to two (2) hours after the engine is shut down.

NOTE: If you see "black oil" in the oil system, refer to AMM 72-00-00/601. Black oil can be an indication of a serious problem or it can be a condition that requires no maintenance action.

(2) If the engine was stopped for more than two (2) hours, dry motor the engine for approximately two (2) minutes (AMM 71-00-00/201).

NOTE: Do this until the oil quantity is stable.

(3) After the dry motor procedure is done, do the steps that follow:

(a) Wait for a minimum of fifteen (15) minutes but not more than two (2) hours before servicing engine oil system.

MECH | INSP

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

(4) Do the deactivation procedure for the thrust reverser for ground maintenance (AMM 78-31-00/201).

(5) Open the access door to the oil tank on the left core cowl panel.

E. ENGINES PRE-PW-SB 79-47, OR 79-65;

Do a check of the oil level for the left engine:

WARNING: DO NOT OPEN THE OIL TANK CAP FOR FIVE MINUTES AFTER SHUTDOWN OF THE ENGINE. A MINIMUM OF FIVE MINUTES IS NECESSARY TO LET PRESSURE IN THE OIL TANK BLEED OFF. IF YOU DO NOT DO THIS, A FAST FLOW OF HOT OIL CAN OCCUR AND CAUSE INJURY TO YOU.

WARNING: DO NOT KEEP THE OIL ON YOUR SKIN FOR A LONG TIME. IF YOU DO NOT CLEAN THE OIL OFF, THE OIL CAN CAUSE INJURY.

CAUTION: DO NOT MIX THE NAME BRAND OILS UNLESS YOU ARE SURE THEY AGREE. SOME OILS WILL CHEMICALLY CHANGE WHEN YOU MIX THEM. THIS CAN CAUSE DAMAGE TO THE ENGINE.

CAUTION: IF YOU DO NOT CLEAN THE OIL OFF, THE OIL CAN CAUSE A STAIN ON YOUR CLOTHES AND DAMAGE TO PAINT CAN OCCUR.

(1) Remove the oil tank cap from the filler neck (AMM 79-11-03/201).

(2) Examine the oil level.

NOTE: The correct level of oil is at the bottom of the "V" made by the valve of the filler neck valve.

(3) If the oil level is too high, do the steps that follow:

(a) Put a container below the magnetic chip detector.

MECH | INSP

(b) Remove the magnetic chip detector to drain the oil from the oil tank (AMM 79-21-10/401).

NOTE: You can use the PWA 86018 Adapter to drain the oil from the oil tank. If you use the PWA 86018 Adapter, remove only the magnetic chip detector probe.

(c) If you do not use the PWA 86018 Adapter, permit 10 quarts of oil to drain from the opening at the location of the magnetic chip detector.

(d) If you use the PWA 86018 Adapter, do the steps that follow:

1) Install the PWA 86018 Adapter in the location of the magnetic chip detector probe.

2) Permit 10 quarts of oil to drain from the oil tank.

3) Remove the PWA 86018 Adapter.

WARNING: USE AMM 71-00-00 TO OPERATE THE POWER PLANT. IF YOU DO NOT USE THIS PROCEDURE, YOU CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONS.

(e) Use the Power Plant Dry-Motor procedure to motor the engine (AMM 71-00-00/201).

(f) Use the Power Plant Dry-Motor procedure to do the engine shutdown (AMM 71-00-00/201).

(g) Install the magnetic chip detector (AMM 79-21-10/401).

(4) Fill the engine oil tank to the bottom of the filler neck valve:

NOTE: If the engine oil was fully drained from the engine, fill the engine oil tank. Fill the oil tank until the oil starts to flow into the scupper drain.

F. ENGINES PRE-PW-SB 79-47 OR 79-65;

MECH	INSP

Do a check of the oil level for the right engine:

NOTE: Fill the oil tank in the steps that follow.

CAUTION: FOR THE RIGHT ENGINE, IF THE OIL FLOWS OUT WHEN THE OIL TANK CAP IS OPENED, THIS IS AN OVERSERVICING CONDITION. DO NOT TRY TO ADD MORE OIL TO REPLACE THE OIL THAT HAS FLOWED OUT.

(1) Remove the oil tank cap from the filler neck valve (AMM 79-11-03/201).

(2) Put the engine oil into the oil tank until the oil starts to go over the top of the filler neck valve and in the scupper drain.

G. ENGINES POST-PW-SB 79-47 OR 79-65;
Do a check of the oil level:

WARNING: DO NOT OPEN THE OIL TANK CAP FOR FIVE MINUTES AFTER SHUTDOWN OF THE ENGINE. A MINIMUM OF FIVE MINUTES IS NECESSARY TO LET PRESSURE IN THE OIL TANK BLEED OFF. IF YOU DO NOT DO THIS, A FAST FLOW OF HOT ENGINE OIL CAN OCCUR AND CAUSE INJURY TO YOU.

WARNING: DO NOT LET THE ENGINE OIL TOUCH YOUR SKIN FOR A LONG TIME. YOU CAN ABSORB TOXIC MATERIALS THROUGH YOUR SKIN IF YOU LET THE ENGINE OIL TOUCH YOUR SKIN FOR A LONG TIME.

WARNING: DO NOT TOUCH THE ENGINE OIL SYSTEM PARTS IF THE ENGINE IS HOT. THE OIL SYSTEM STAYS HOT FOR MORE TIME THAN THE OTHER ENGINE PARTS. YOU CAN INJURE YOURSELF IF YOU TOUCH A HOT OIL SYSTEM.

CAUTION: DO NOT MIX THE DIFFERENT TYPES OF ENGINE OILS UNLESS YOU ARE SURE THEY AGREE. SOME OILS WILL CHEMICALLY CHANGE WHEN YOU MIX THEM. THIS CAN CAUSE DAMAGE TO THE ENGINE.

CAUTION: DO NOT LET THE ENGINE OIL TOUCH PARTS WHICH DO NOT USUALLY TOUCH THE ENGINE OIL. THE ENGINE OIL CAN CAUSE DAMAGE TO THE RUBBER, PAINT, AND OTHER ENGINE PARTS.

CAUTION: DO NOT LET THE ALKALINE CLEANING FLUIDS TOUCH THE ENGINE OIL WHICH WILL GO INTO THE ENGINE. VERY SMALL QUANTITIES OF THE ALKALINE CLEANING FLUIDS WILL CAUSE DAMAGE TO THE ENGINE OIL.

MECH	INSP

(1) Remove the oil tank cap from the filler neck (AMM 79-11-03/201).

(2) Examine the oil level.

NOTE: Fill the oil tank with the steps that follow.

(3) Put the engine oil into the oil tank until the engine oil starts to go over the top of the filler neck valve.

H. If the oil system is empty when you fill the oil tank, do the steps that follow:

WARNING: USE AMM 71-00-00 TO OPERATE THE POWER PLANT. IF YOU DO NOT USE THIS PROCEDURE, YOU CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONS.

(1) Use the Power Plant Dry-Motor procedure to motor the engine (AMM 71-00-00/201).

(2) Use the Power Plant Dry-Motor procedure to do the engine shutdown (AMM 71-00-00/201).

(3) Examine the oil level again.

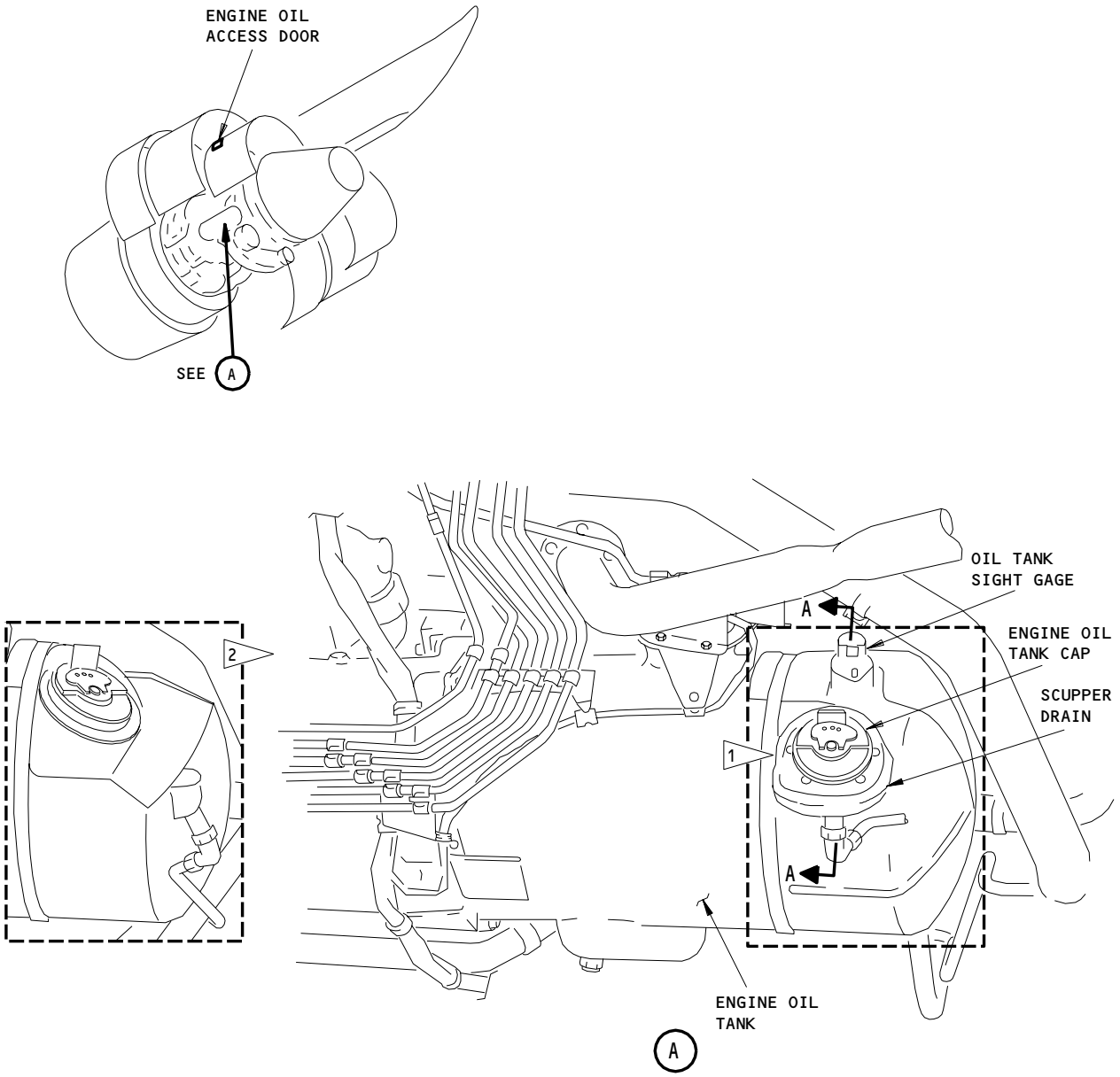
I. Put the airplane back to its initial condition

(1) Examine the packing of the oil tank cap to make sure there is no sign of deterioration.

(2) Install the oil tank cap (AMM 79-11-03/203).

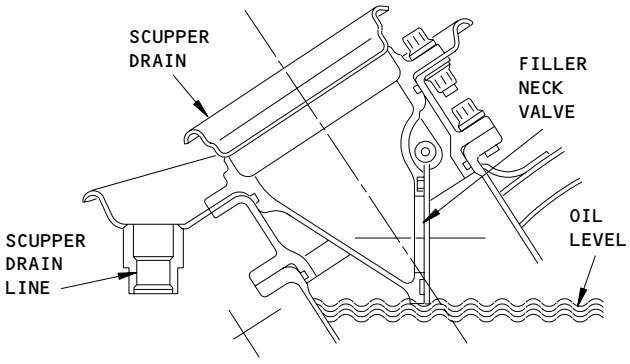
(3) Close the access door to the oil tank.

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

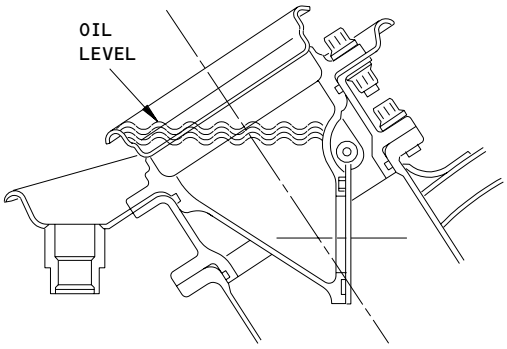


1 ENGINES PRE-PW-SB 79-65
2 ENGINES POST-PW-SB 79-65

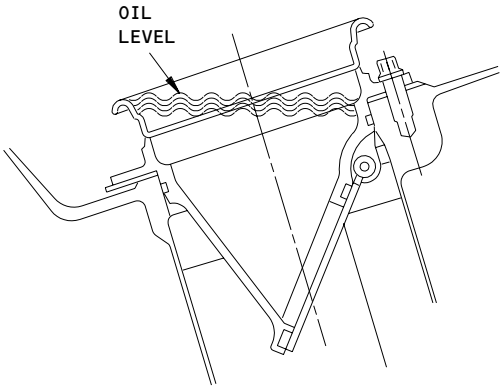
Engine Oil Servicing
Figure 301 (Sheet 1)



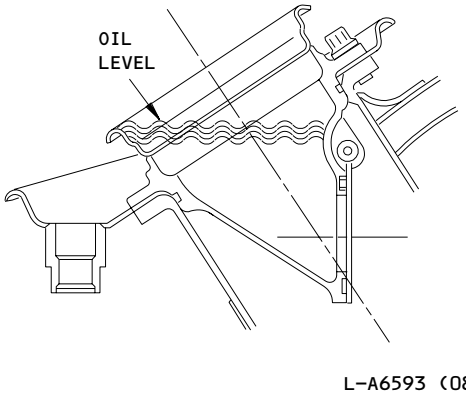
MAXIMUM FILL LEVEL ON ENGINES
PRE-PW-SB 79-47
(LEFT ENGINE)
A-A



MAXIMUM FILL LEVEL ON ENGINES
PRE-PW-SB 79-47
(RIGHT ENGINE)
A-A



MAXIMUM FILL LEVEL ON ENGINES
POST-PW-SB 79-65
A-A



L-A6593 (0893)

MAXIMUM FILL LEVEL ON ENGINES
POST-PW-SB 79-47
A-A

Engine Oil Servicing
Figure 301 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-409-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		00048 HRS	NOTE	002DY	010	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
SERVICE	ENGINE 2 OIL LEVEL		ALL	4000

ZONES	ACCESS PANELS
421	427BL

MECH	INSP	MPD ITEM NUMBER

CHECK THE ENGINE 2 OIL LEVEL AND SERVICE AS NECESSARY. 12-13-01-3A

INTERVAL NOTE: 48 ELAPSED CLOCK HOURS.

1. General

A. This procedure includes two tasks to fill the engine oil tank. The first task is for the engines that have not incorporated PW Service Bulletins 79-47 and 79-65 (engines with the cutaway oil tank end). The second task is for the engines that have incorporated PW Service Bulletins 79-47 and 79-65.

B. Refer to PW SB 238 for information on approved oil brands, oil types, and instructions for changeover to a different brand or type of oil.

C. ENGINES PRE-PW-SB 79-47;
The oil tank have a filler neck connector between the oil tank boss and the filler neck valve.

D. ENGINES POST-PW-SB 79-47 AND POST-PW-79-65;
(ENGINES WITH THE CUTAWAY OIL TANK END);
The oil tanks do not have a filler neck connector.

E. You can get access to the oil tank cap through the oil access door on the left core cowl panel.

2. Engine Oil Servicing (Fig. 301)

A. Equipment

(1) Adapter - PWA 86018, Oil Sampler (Optional)

(2) Container - 5 U.S. gallons (19 liters) for oil

B. Consumable Materials

MECH | INSP

(1) DOO390 Oil - Engine

C. References

(1) AMM 71-00-00/201, Power Plant

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

(3) AMM 79-11-03/201, Engine Oil Tank Cap

(4) AMM 79-21-10/401, Magnetic Chip Detectors

D. Prepare for Engine Oil Servicing

CAUTION: YOU MUST OBEY THE TIME LIMITS IN THE STEPS THAT FOLLOW WHEN YOU FILL THE ENGINE WITH ENGINE OIL. A FAILURE TO DO THIS CAN CAUSE AN INCORRECT SERVICING OF THE ENGINE OIL TANK AND DAMAGE TO THE ENGINE.

(1) Examine the oil level.

NOTE: You must fill the engine oil tank from (15) fifteen minutes to two (2) hours after the engine is shut down.

NOTE: If you see "black oil" in the oil system, refer to AMM 72-00-00/601. Black oil can be an indication of a serious problem or it can be a condition that requires no maintenance action.

(2) If the engine was stopped for more than two (2) hours, dry motor the engine for approximately two (2) minutes (AMM 71-00-00/201).

NOTE: Do this until the oil quantity is stable.

(3) After the dry motor procedure is done, do the steps that follow:

(a) Wait for a minimum of fifteen (15) minutes but not more than two (2) hours before servicing engine oil system.

MECH | INSP

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

(4) Do the deactivation procedure for the thrust reverser for ground maintenance (AMM 78-31-00/201).

(5) Open the access door to the oil tank on the left core cowl panel.

E. ENGINES PRE-PW-SB 79-47, OR 79-65;

Do a check of the oil level for the left engine:

WARNING: DO NOT OPEN THE OIL TANK CAP FOR FIVE MINUTES AFTER SHUTDOWN OF THE ENGINE. A MINIMUM OF FIVE MINUTES IS NECESSARY TO LET PRESSURE IN THE OIL TANK BLEED OFF. IF YOU DO NOT DO THIS, A FAST FLOW OF HOT OIL CAN OCCUR AND CAUSE INJURY TO YOU.

WARNING: DO NOT KEEP THE OIL ON YOUR SKIN FOR A LONG TIME. IF YOU DO NOT CLEAN THE OIL OFF, THE OIL CAN CAUSE INJURY.

CAUTION: DO NOT MIX THE NAME BRAND OILS UNLESS YOU ARE SURE THEY AGREE. SOME OILS WILL CHEMICALLY CHANGE WHEN YOU MIX THEM. THIS CAN CAUSE DAMAGE TO THE ENGINE.

CAUTION: IF YOU DO NOT CLEAN THE OIL OFF, THE OIL CAN CAUSE A STAIN ON YOUR CLOTHES AND DAMAGE TO PAINT CAN OCCUR.

(1) Remove the oil tank cap from the filler neck (AMM 79-11-03/201).

(2) Examine the oil level.

NOTE: The correct level of oil is at the bottom of the "V" made by the valve of the filler neck valve.

(3) If the oil level is too high, do the steps that follow:

(a) Put a container below the magnetic chip detector.

MECH | INSP

(b) Remove the magnetic chip detector to drain the oil from the oil tank (AMM 79-21-10/401).

NOTE: You can use the PWA 86018 Adapter to drain the oil from the oil tank. If you use the PWA 86018 Adapter, remove only the magnetic chip detector probe.

(c) If you do not use the PWA 86018 Adapter, permit 10 quarts of oil to drain from the opening at the location of the magnetic chip detector.

(d) If you use the PWA 86018 Adapter, do the steps that follow:

1) Install the PWA 86018 Adapter in the location of the magnetic chip detector probe.

2) Permit 10 quarts of oil to drain from the oil tank.

3) Remove the PWA 86018 Adapter.

WARNING: USE AMM 71-00-00 TO OPERATE THE POWER PLANT. IF YOU DO NOT USE THIS PROCEDURE, YOU CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONS.

(e) Use the Power Plant Dry-Motor procedure to motor the engine (AMM 71-00-00/201).

(f) Use the Power Plant Dry-Motor procedure to do the engine shutdown (AMM 71-00-00/201).

(g) Install the magnetic chip detector (AMM 79-21-10/401).

(4) Fill the engine oil tank to the bottom of the filler neck valve:

NOTE: If the engine oil was fully drained from the engine, fill the engine oil tank. Fill the oil tank until the oil starts to flow into the scupper drain.

F. ENGINES PRE-PW-SB 79-47 OR 79-65;

MECH | INSP

Do a check of the oil level for the right engine:

NOTE: Fill the oil tank in the steps that follow.

CAUTION: FOR THE RIGHT ENGINE, IF THE OIL FLOWS OUT WHEN THE OIL TANK CAP IS OPENED, THIS IS AN OVERSERVICING CONDITION. DO NOT TRY TO ADD MORE OIL TO REPLACE THE OIL THAT HAS FLOWED OUT.

(1) Remove the oil tank cap from the filler neck valve (AMM 79-11-03/201).

(2) Put the engine oil into the oil tank until the oil starts to go over the top of the filler neck valve and in the scupper drain.

G. ENGINES POST-PW-SB 79-47 OR 79-65;
Do a check of the oil level:

WARNING: DO NOT OPEN THE OIL TANK CAP FOR FIVE MINUTES AFTER SHUTDOWN OF THE ENGINE. A MINIMUM OF FIVE MINUTES IS NECESSARY TO LET PRESSURE IN THE OIL TANK BLEED OFF. IF YOU DO NOT DO THIS, A FAST FLOW OF HOT ENGINE OIL CAN OCCUR AND CAUSE INJURY TO YOU.

WARNING: DO NOT LET THE ENGINE OIL TOUCH YOUR SKIN FOR A LONG TIME. YOU CAN ABSORB TOXIC MATERIALS THROUGH YOUR SKIN IF YOU LET THE ENGINE OIL TOUCH YOUR SKIN FOR A LONG TIME.

WARNING: DO NOT TOUCH THE ENGINE OIL SYSTEM PARTS IF THE ENGINE IS HOT. THE OIL SYSTEM STAYS HOT FOR MORE TIME THAN THE OTHER ENGINE PARTS. YOU CAN INJURE YOURSELF IF YOU TOUCH A HOT OIL SYSTEM.

CAUTION: DO NOT MIX THE DIFFERENT TYPES OF ENGINE OILS UNLESS YOU ARE SURE THEY AGREE. SOME OILS WILL CHEMICALLY CHANGE WHEN YOU MIX THEM. THIS CAN CAUSE DAMAGE TO THE ENGINE.

CAUTION: DO NOT LET THE ENGINE OIL TOUCH PARTS WHICH DO NOT USUALLY TOUCH THE ENGINE OIL. THE ENGINE OIL CAN CAUSE DAMAGE TO THE RUBBER, PAINT, AND OTHER ENGINE PARTS.

CAUTION: DO NOT LET THE ALKALINE CLEANING FLUIDS TOUCH THE ENGINE OIL WHICH WILL GO INTO THE ENGINE. VERY SMALL QUANTITIES OF THE ALKALINE CLEANING FLUIDS WILL CAUSE DAMAGE TO THE ENGINE OIL.

MECH | INSP

(1) Remove the oil tank cap from the filler neck (AMM 79-11-03/201).

(2) Examine the oil level.

NOTE: Fill the oil tank with the steps that follow.

(3) Put the engine oil into the oil tank until the engine oil starts to go over the top of the filler neck valve.

H. If the oil system is empty when you fill the oil tank, do the steps that follow:

WARNING: USE AMM 71-00-00 TO OPERATE THE POWER PLANT. IF YOU DO NOT USE THIS PROCEDURE, YOU CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONS.

(1) Use the Power Plant Dry-Motor procedure to motor the engine (AMM 71-00-00/201).

(2) Use the Power Plant Dry-Motor procedure to do the engine shutdown (AMM 71-00-00/201).

(3) Examine the oil level again.

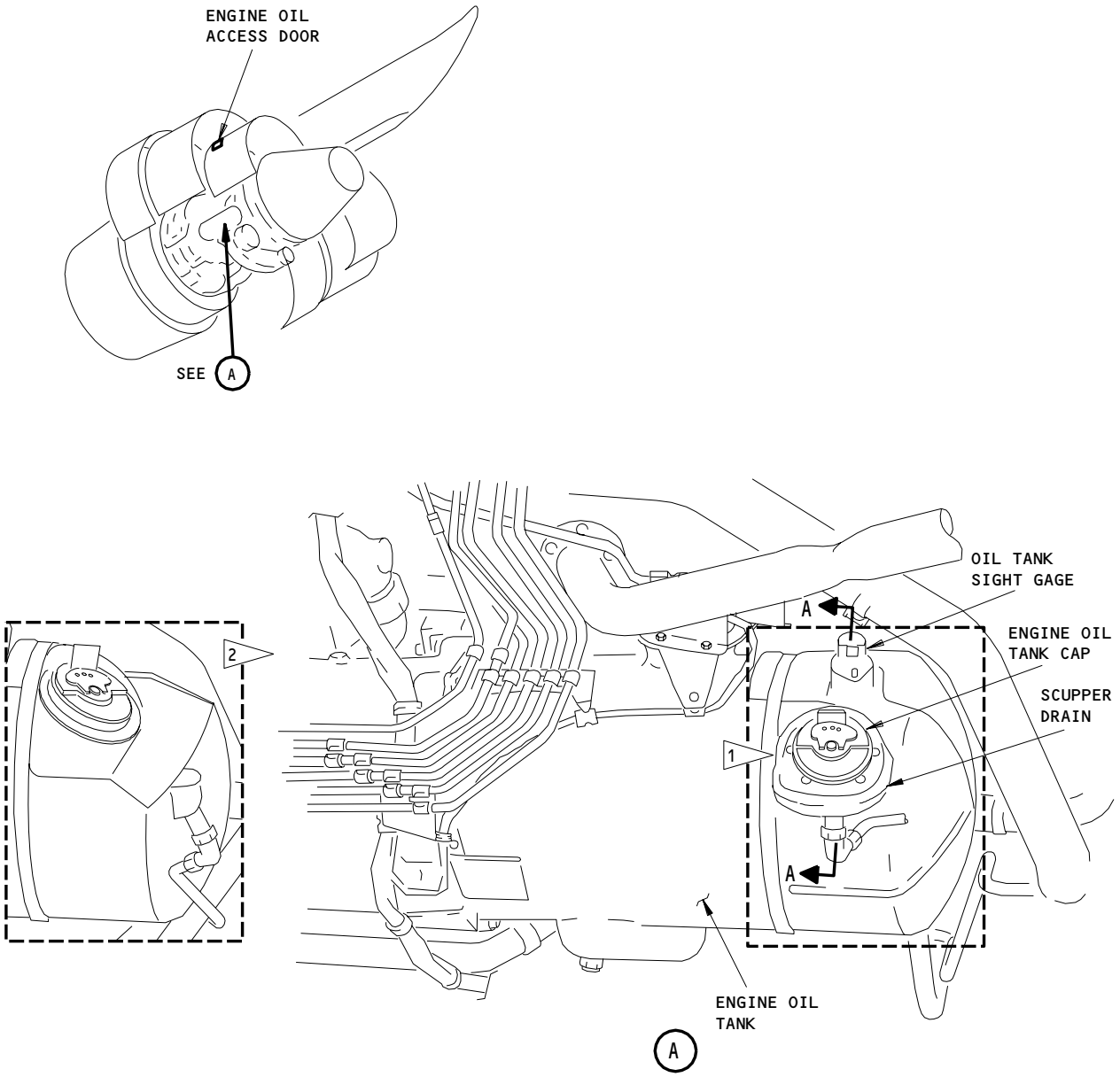
I. Put the airplane back to its initial condition

(1) Examine the packing of the oil tank cap to make sure there is no sign of deterioration.

(2) Install the oil tank cap (AMM 79-11-03/203).

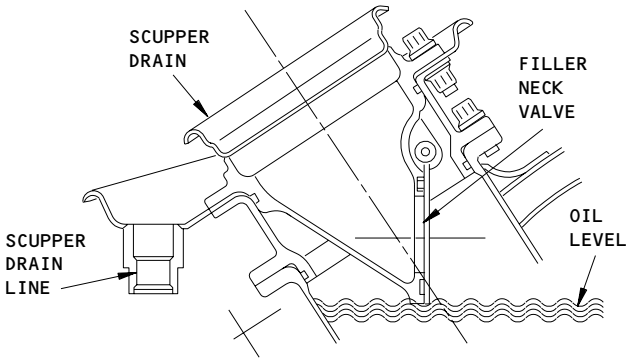
(3) Close the access door to the oil tank.

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

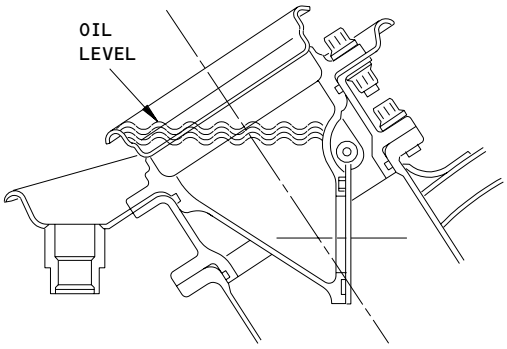


1 ENGINES PRE-PW-SB 79-65
2 ENGINES POST-PW-SB 79-65

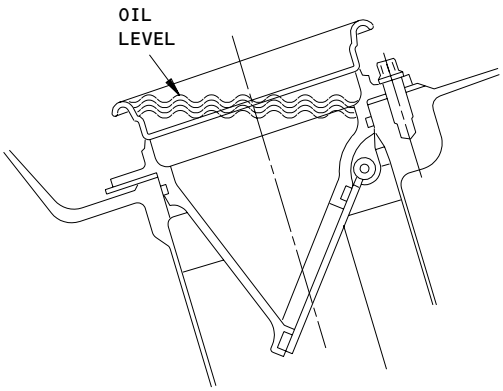
Engine Oil Servicing
Figure 301 (Sheet 1)



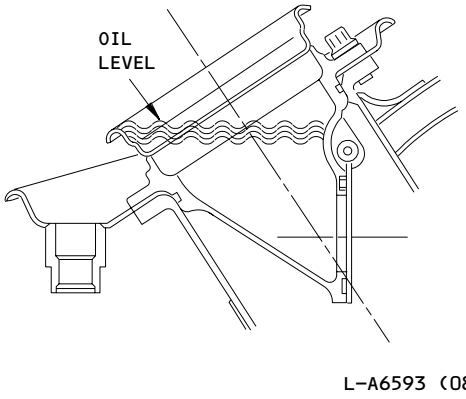
MAXIMUM FILL LEVEL ON ENGINES
PRE-PW-SB 79-47
(LEFT ENGINE)
A-A



MAXIMUM FILL LEVEL ON ENGINES
PRE-PW-SB 79-47
(RIGHT ENGINE)
A-A



MAXIMUM FILL LEVEL ON ENGINES
POST-PW-SB 79-65
A-A



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MAXIMUM FILL LEVEL ON ENGINES
POST-PW-SB 79-47
A-A

Engine Oil Servicing
Figure 301 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-409-51-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		1C	11212	010	APR 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	OIL FILTER BYPASS WARNING SYSTEM		ALL	4000

ZONES	ACCESS PANELS
211 411	413AL 415AL 417AL

MECH | INSP

MPD ITEM NUMBER

FUNCTIONALLY CHECK THE ENGINE 1 OIL FILTER BYPASS WARNING SYSTEM. N79-35-00-5A

1. System Test - Oil Filter Bypass Warning System (Fig. 501)

A. Equipment

(1) Air pressure source - adjustable from 0 to 100 psi, accurate to ±1 psi

B. References

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

(2) AMM 32-09-02/201, Air/Ground Relay System

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

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

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

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

C. Access

(1) Location Zones
410 L Power Plant
420 R Power Plant

(2) Access Panels
413AL Fan Cowl Panel (Left)
423AL Fan Cowl Panel (Left)

MECH	INSP

D. Prepare to Do the Test

(1) Supply electrical power (AMM 24-22-00/201).

(2) Airplanes incorporating the optional L(R) OIL FILTER Advisory level EICAS message inhibit, perform the following steps:

(a) Push the ECS/MSG switch on the EICAS MAINT panel to make sure this Status level EICAS message, L(R) OIL FILTER, does not show on the bottom display.

(b) If the L(R) OIL FILTER Status level EICAS message does show on the bottom display, push and hold the ERASE button on the EICAS MAINT panel until the Status level EICAS message, L(R) OIL FILTER, does not show.

(3) Put the Air/Ground Relay System in the air mode (AMM 32-09-02/201).

(4) Open the left fan cowl panel (AMM 71-11-04/201).

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

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

(6) Open the left core cowl panel (AMM 71-11-06/201).

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

(7) Open the left thrust reverser (AMM 78-31-00/201).

E. Do the Test of the Bypass Warning System

(1) Disconnect the inlet pressure tube of the main oil filter from the differential pressure switch.

(2) Connect the line from the air pressure source to the differential pressure switch.

MECH	INSP

(3) Apply a pressure of 54 ±1 psig to the differential pressure switch.

(a) For airplanes with the L(R) OIL FILTER Advisory level EICAS message active:

1) Make sure the Advisory level EICAS message, L(R) OIL FILTER, shows on the top display.

(b) For airplanes incorporating the optional L(R) OIL FILTER Advisory level EICAS message inhibit, perform the following steps:

1) Make sure STATUS shows on the bottom EICAS display in the top, left corner.

2) Push the STATUS button on the select panel of the EICAS display to make sure this Status level EICAS message, L(R) OIL FILTER, shows on the bottom display.

(4) Decrease the pressure to 38 ±1 psig.

(a) For airplanes with the L(R) OIL FILTER Advisory level EICAS message active:

1) Make sure the Advisory level EICAS message goes off and stays off while you decrease the pressure to zero psig.

(b) For airplanes incorporating the optional L(R) OIL FILTER Advisory level EICAS message inhibit, perform the following steps:

1) Put the MAINT ENABLE BYPASS switch, S612, to the BYPASS position or put the Air/Ground Relay System in the ground mode (AMM 32-09-02/201).

2) Push the AUTO-EVENT READ switch on the EICAS MAINT panel.

3) Push and hold the ERASE button on the EICAS MAINT panel until the Status level EICAS message, L(R) OIL FILTER, does not appear.

4) Put the MAINT ENABLE BYPASS switch, S612, to the NORMAL position or put the Air/Ground Relay System in the air mode (AMM 32-09-02/201).

5) Wait 1 minute, and make sure the Status level EICAS message, L(R) OIL FILTER does not return.

MECH | INSP

(5) Decrease the pressure to zero.

(6) Remove the air pressure line from the differential pressure switch.

(7) Connect the inlet pressure tube to the differential pressure switch.

(a) ENGINES PRE-PW-SB 79-70 OR PRE-PW-SB 79-77;
Tighten the tube nut to 135-145 pound-inches
(15.253-16.383 newton-meters).

(b) ENGINES POST-PW-SB 79-70 OR POST-PW-SB 79-77;
Tighten the tube nuts to 65-75 pound-inches
(7.344-8.474 newton-meters).

(c) Attach lockwire or safety cable and safety cable ferrule to the tube nuts.

(8) Do the test of the oil filter differential pressure switch that is shown in the Power Plant Test Reference Table (AMM 71-00-00/501).

(a) Examine for leaks and repair the leaks as necessary.

F. Put the Airplane Back to Its Usual Condition.

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

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

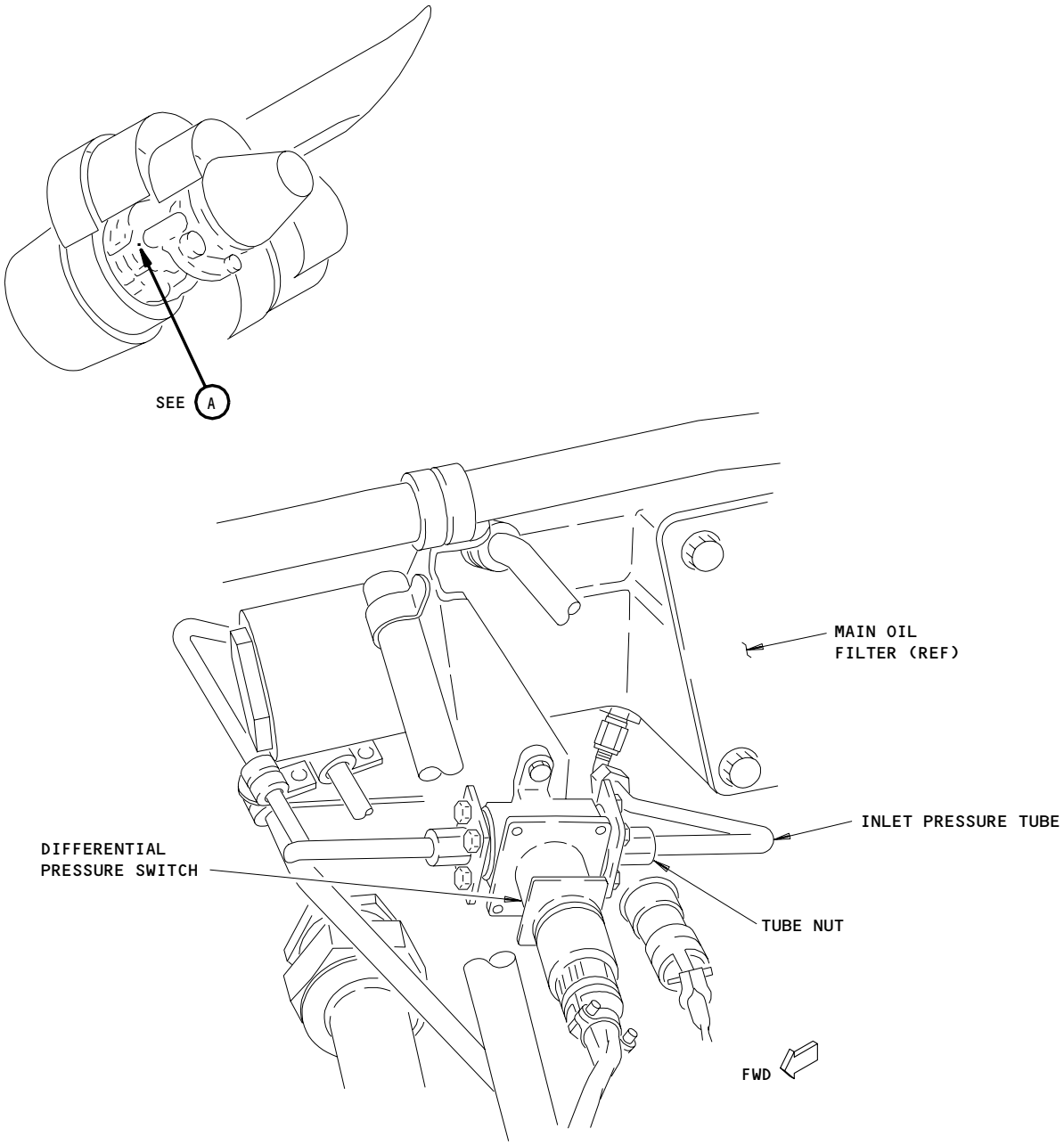
(2) Close the left core cowl panel (AMM 71-11-06/201).

(3) Close the left fan cowl panel (AMM 71-11-04/201).

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

(5) Put the Air/Ground Relay System in the ground mode (AMM 32-09-02/201).

(6) Remove electrical power, if it is not necessary (AMM 24-22-00/201).

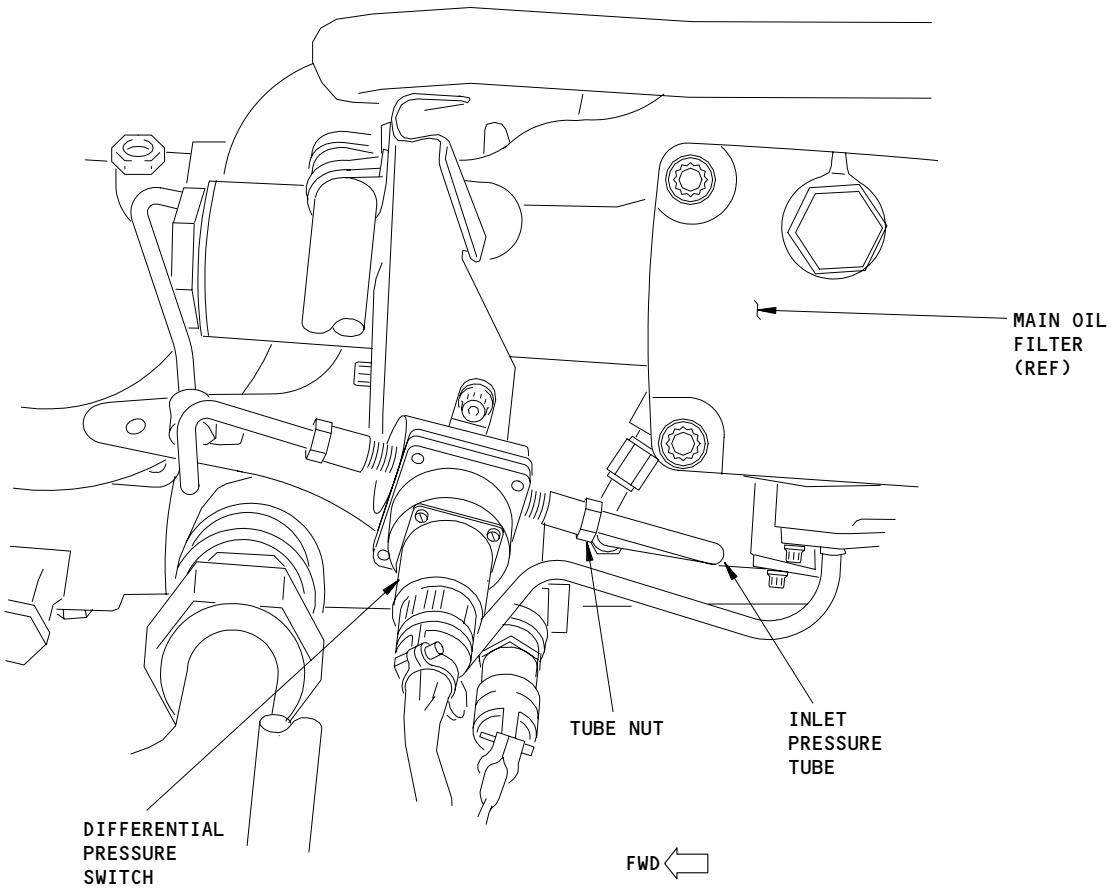


(VIEW IN THE UP DIRECTION)

A 1

1 ENGINES PRE-PW-SB 79-70
2 ENGINES POST-PW-SB 79-70

Oil Filter Bypass Warning System Test
Figure 501 (Sheet 1)



VIEW IN THE UP DIRECTION

A 2

Oil Filter Bypass Warning System Test
Figure 501 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-409-51-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		1C	11212	005	APR 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	OIL FILTER BYPASS WARNING SYSTEM		ALL	4000

ZONES	ACCESS PANELS
211 421	423AL 425AL 427AL

MECH | INSP

MPD ITEM NUMBER

FUNCTIONALLY CHECK THE ENGINE 2 OIL FILTER BYPASS WARNING SYSTEM. N79-35-00-5A

1. System Test - Oil Filter Bypass Warning System (Fig. 501)

A. Equipment

(1) Air pressure source - adjustable from 0 to 100 psi, accurate to ±1 psi

B. References

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

(2) AMM 32-09-02/201, Air/Ground Relay System

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

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

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

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

C. Access

(1) Location Zones
410 L Power Plant
420 R Power Plant

(2) Access Panels
413AL Fan Cowl Panel (Left)
423AL Fan Cowl Panel (Left)

MECH	INSP

D. Prepare to Do the Test

(1) Supply electrical power (AMM 24-22-00/201).

(2) Airplanes incorporating the optional L(R) OIL FILTER Advisory level EICAS message inhibit, perform the following steps:

(a) Push the ECS/MSG switch on the EICAS MAINT panel to make sure this Status level EICAS message, L(R) OIL FILTER, does not show on the bottom display.

(b) If the L(R) OIL FILTER Status level EICAS message does show on the bottom display, push and hold the ERASE button on the EICAS MAINT panel until the Status level EICAS message, L(R) OIL FILTER, does not show.

(3) Put the Air/Ground Relay System in the air mode (AMM 32-09-02/201).

(4) Open the left fan cowl panel (AMM 71-11-04/201).

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

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

(6) Open the left core cowl panel (AMM 71-11-06/201).

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

(7) Open the left thrust reverser (AMM 78-31-00/201).

E. Do the Test of the Bypass Warning System

(1) Disconnect the inlet pressure tube of the main oil filter from the differential pressure switch.

(2) Connect the line from the air pressure source to the differential pressure switch.

MECH	INSP

(3) Apply a pressure of 54 ±1 psig to the differential pressure switch.

(a) For airplanes with the L(R) OIL FILTER Advisory level EICAS message active:

1) Make sure the Advisory level EICAS message, L(R) OIL FILTER, shows on the top display.

(b) For airplanes incorporating the optional L(R) OIL FILTER Advisory level EICAS message inhibit, perform the following steps:

1) Make sure STATUS shows on the bottom EICAS display in the top, left corner.

2) Push the STATUS button on the select panel of the EICAS display to make sure this Status level EICAS message, L(R) OIL FILTER, shows on the bottom display.

(4) Decrease the pressure to 38 ±1 psig.

(a) For airplanes with the L(R) OIL FILTER Advisory level EICAS message active:

1) Make sure the Advisory level EICAS message goes off and stays off while you decrease the pressure to zero psig.

(b) For airplanes incorporating the optional L(R) OIL FILTER Advisory level EICAS message inhibit, perform the following steps:

1) Put the MAINT ENABLE BYPASS switch, S612, to the BYPASS position or put the Air/Ground Relay System in the ground mode (AMM 32-09-02/201).

2) Push the AUTO-EVENT READ switch on the EICAS MAINT panel.

3) Push and hold the ERASE button on the EICAS MAINT panel until the Status level EICAS message, L(R) OIL FILTER, does not appear.

4) Put the MAINT ENABLE BYPASS switch, S612, to the NORMAL position or put the Air/Ground Relay System in the air mode (AMM 32-09-02/201).

5) Wait 1 minute, and make sure the Status level EICAS message, L(R) OIL FILTER does not return.

MECH	INSP

(5) Decrease the pressure to zero.

(6) Remove the air pressure line from the differential pressure switch.

(7) Connect the inlet pressure tube to the differential pressure switch.

(a) ENGINES PRE-PW-SB 79-70 OR PRE-PW-SB 79-77;
Tighten the tube nut to 135-145 pound-inches
(15.253-16.383 newton-meters).

(b) ENGINES POST-PW-SB 79-70 OR POST-PW-SB 79-77;
Tighten the tube nuts to 65-75 pound-inches
(7.344-8.474 newton-meters).

(c) Attach lockwire or safety cable and safety cable ferrule to the tube nuts.

(8) Do the test of the oil filter differential pressure switch that is shown in the Power Plant Test Reference Table (AMM 71-00-00/501).

(a) Examine for leaks and repair the leaks as necessary.

F. Put the Airplane Back to Its Usual Condition.

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

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

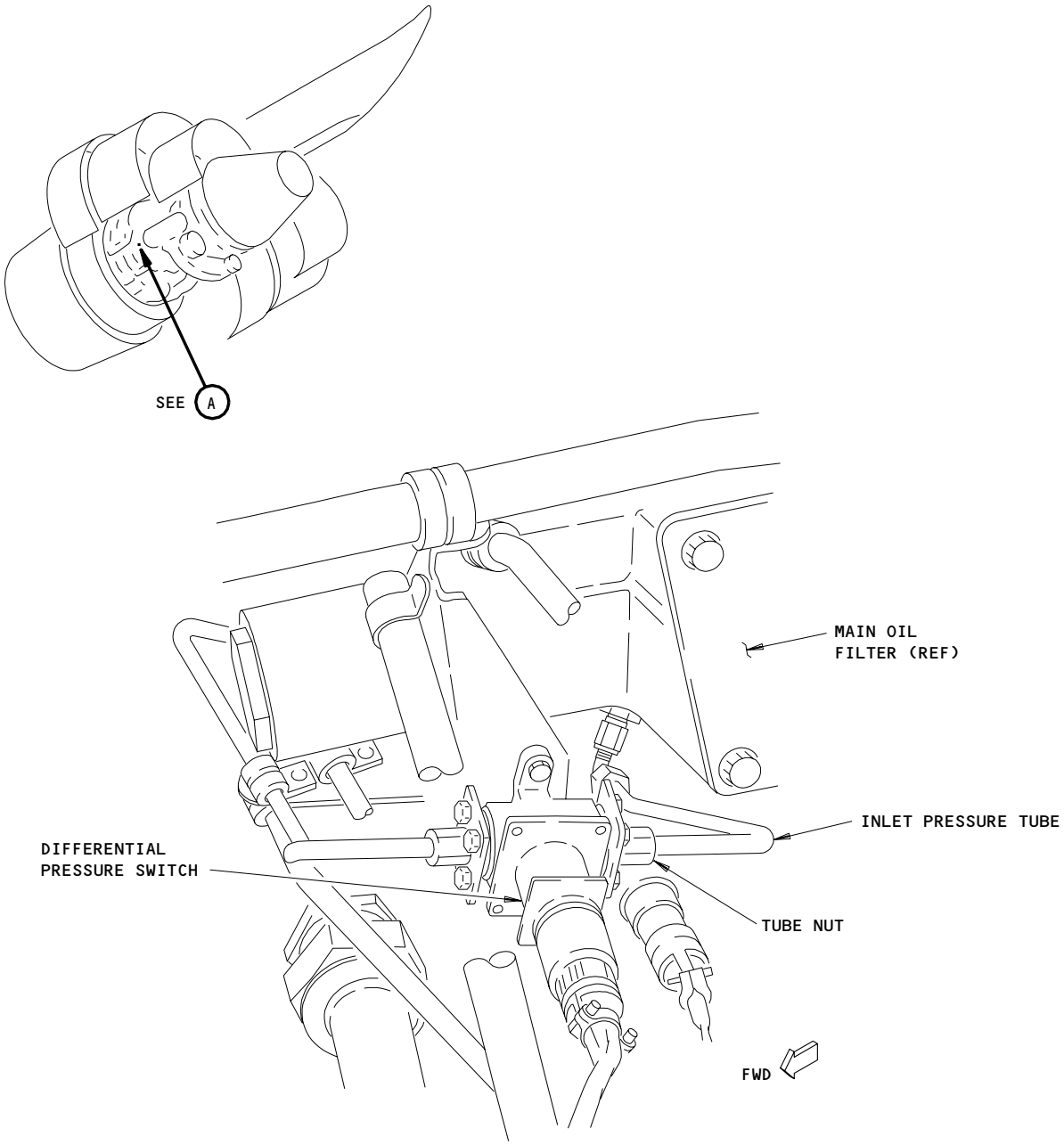
(2) Close the left core cowl panel (AMM 71-11-06/201).

(3) Close the left fan cowl panel (AMM 71-11-04/201).

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

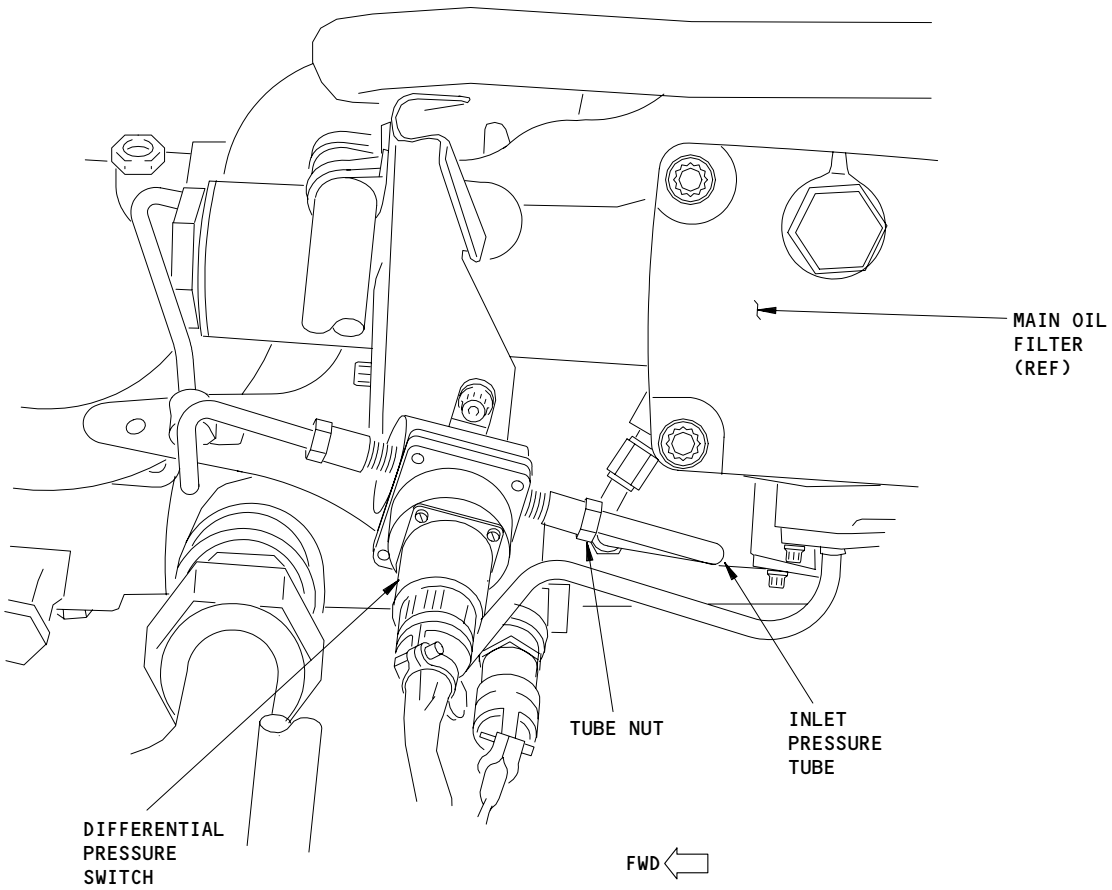
(5) Put the Air/Ground Relay System in the ground mode (AMM 32-09-02/201).

(6) Remove electrical power, if it is not necessary (AMM 24-22-00/201).



1 ENGINES PRE-PW-SB 79-70
2 ENGINES POST-PW-SB 79-70

Oil Filter Bypass Warning System Test
Figure 501 (Sheet 1)



VIEW IN THE UP DIRECTION

A 2

Oil Filter Bypass Warning System Test
Figure 501 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-411-C1-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		00500 HRS	10101	005	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 1 MAGNETIC CHIP DETECTORS		ALL	4000

ZONES	ACCESS PANELS
411	413AL 414AR 415AL 416AR 417AL 418AR

MECH | INSP

MPD ITEM NUMBER

CHECK THE FOLLOWING MAGNETIC CHIP DETECTORS (IF INSTALLED): N79-21-10-6A N79-21-10-6B

1. ANGLE GEARBOX,	79-21-10-6A	N79-21-10-6C
2. NO. 1, 1.5 AND 2 BEARING,	79-21-10-6B	N79-21-10-6D
3. NO. 3 BEARING,	79-21-10-6C	N79-21-10-6E
4. NO. 4 BEARING,	79-21-10-6D	N79-21-10-6F
5. MAIN GEARBOX,	79-21-10-6E	
6. OIL TANK.	79-21-10-6F	

1. Do the Inspection of the Magnetic Chip Detectors

A. General

(1) This procedure gives the instructions to examine and interpret the contamination found on the magnetic chip detectors (MCD).

(2) There are four main types of contamination: build debris or residual debris (contamination from the assembly of the engine) fines, flakes, and chips.

(3) It is necessary to keep a record of all the debris contamination that is found on the probes and in the oil filter.

(4) You must examine the debris contamination with suitable magnification. It is recommended that you use a magnifiying glass that has 20X magnification.

(5) The PWA 107014 Photo Aid can be used as an aid to show actual photos of conditions which can be found during inspection.

(6) If the engine or gearbox can not continue in service, you must send the debris contamination and/or analysis of the debris contamination with the engine or gearbox to the repair facility.

B. References

MECH | INSP

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

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

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

(4) AMM 79-21-10/401, Magnetic Chip Detectors

(5) AMM 79-21-05/401, Main Oil Filter

C. Equipment

D. Prepare to Do the Inspection

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

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

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

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

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

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

E. Do the Inspection of the Magnetic Chip Detectors

CAUTION: DO NOT PERMIT THE MAGNETS ON THE PROBES TO TOUCH EACH OTHER OR THEY CAN BECOME DEMAGNETIZED.

(1) Remove the magnetic chip detector (MCD) probe from the valve (AMM 79-21-10/401).

(a) Make a record of the position of each probe.

MECH	INSP

(b) If oil leaks from the valve, replace the valve packing.

(c) If the valve still leaks with the new valve packing, replace the valve (AMM 79-21-10/401).

(2) Inspect the Magnetic Chip Detector Valve Body.

(a) Inspect the three retention grooves on the valve bodies with Part Numbers 5OR499 or 5OR501.

1) Examine the bottom of the three retention grooves in the valve body wall for wear (Fig. 603).

2) If wear is found, measure the thickness of metal at the bottom of the three retention grooves. See Dimension A on Figure 603. Minimum serviceable thickness is 0.130 inch (3.302 mm).

NOTE: You can measure the thickness of the metal at the bottom of the three detents with a caliper that can measure up to 0.150 in (3.810 mm).

3) If the valve body has less than the minimum thickness of material at the bottom of the retention grooves, you must replace the magnetic chip detector valve and probe as specified below.

a) If dimension A is less than 0.100 inch (2.540 mm) the magnetic chip detector valve body and probe are not serviceable. You must replace the magnetic chip detector.

b) If dimension A is more than 0.100 inch (2.540 mm) but less than 0.130 inch (3.302 mm), and if a new magnetic chip detector is not available, replace the magnetic chip detector at the next A-check.

c) Do this procedure if you replace the magnetic chip detector valve and probe: (AMM 79-21-10/401).

(3) If the probe is covered by a drop of oil, apply a few drops of isopropyl alcohol to the probe tip.

(4) Find the type of contamination that is found on the MCD probe (Fig. 601):

MECH | INSP

Build (residual) debris

NOTE: The PWA 107014 Photo Aid (see condition A) can be used to see actual photos of different conditions.

Magnetic fines

NOTE: The PWA 107014 Photo Aid (see conditions B and E) can be used to see actual photos of different conditions.

(a) Description: Shown as very small particles less than 0.010 inch (0.254 mm) in length and with different widths. They can show as a black or gray sludge or fuzz on the magnetic probe. When the oil on the probe is removed, they show as dull hairlike slivers.
Fines are typical of low-time engines and small quantities are serviceable.

(b) Source: When the engine components wear, they can usually cause a small quantity of fines. You can keep the engine in operation with this condition. Fines can also be caused by bearing skid and the spinning of parts such as spacers, seal plates, and shaft plugs. Bearing skid and spinning make fines at a higher rate than usual wear. You can not keep the engine in operation in this condition. Service experience shows that only the bearing for the deoiler idler gear in the main gearbox has bearing skid that will make fines.

(c) Action: If fines are collected on the probe tip, do the steps that follow:

1) If the fines collected on the probe tip make up less than 25 percent of the probe tip's perimeter (see PWA 10714 Photo Aid Condition B) the engine can continue in service. Obey the usual magnetic chip detector inspection interval.

2) If the fines collected on the probe tip make up more than 25 percent of the probe tip's perimeter (see PWA 10714 Photo Aid Condition E) examine the individual compartment chip collectors for debris.

3) If there is debris on more than 25 percent of any of the individual probe tip's perimeter (see PWA Photo Aid, Condition E) and less than 100 percent surface coverage, do the steps that follow:

MECH	INSP

a) Remove the main oil filter (AMM 79-21-05/401).

b) Keep the oil which you drain from the housing of the main oil filter.

c) Flush the main oil filter with the petroleum solvent.

d) Put the petroleum solvent through a filter paper or a clean cloth.

e) Keep the debris contamination for the identification.

f) Install a new main oil filter (AMM 79-21-05/401).

g) Examine the main oil filter and the oil in the housing for metallic contamination.

h) If there is metallic debris contamination which is not build debris in the main oil filter and the filter housing oil, and the quantity is sufficient to make a circle which has a minimum diameter of 0.50 inch (12.700 mm), do the steps that follow:

1. Remove the engine from operation.

2. Disassemble the engine and find the source of the debris contamination.

i) If there is metallic debris contamination which is not build debris, and the quantity is not sufficient to make a circle which has a minimum diameter of 0.50 inch (12.700 mm), do the steps that follow:

1. Continue the engine in service, and examine the MCD probe each 25 hours of operation for the subsequent 200 hours.

2. Collect the contamination from the MCD probe, and do an analysis of the material within 200 hours of operation.

3. If there is contamination from the bearings or gear material, remove the engine from operation. disassemble the engine, and find the source of the material.

4. If the debris contamination is the same or increases in consecutive magnetic probe inspections during the 200 flight hour inspection interval, remove the engine from service. Disassemble the engine to find the source of the debris contamination.

5. If you do not find bearing or gear material, and if the quantity of the contamination decreases in each consecutive inspection of the probes during the 200 hours, put the engine back into operation.

4) If any individual MCD probe has 100 percent coverage of fines, the engine must be removed from service.

Chips or flakes

NOTE: The PWA 107014 Photo Aid (see conditions D and F) can be used to see actual photos of different conditions.

(d) Description of chips: Chips are very thick pieces of metal where one surface is usually smooth and the other surface is rough or irregular.

(e) Source of chips: The chips from ball and roller bearings are usually smooth and shiny on one side. This side can show the initial manufacture process. The opposite side is not as shiny and looks like a fracture has occurred. The chips from gearteeth have one shiny side with machine marks and one side that is smooth and not shiny.

(f) Description of Flakes: Flakes have an irregular shape, but are usually flat and shiny on the two sides. You must do an analysis of the flakes to know their source.

(g) Source of flakes: The flakes come from ball bearings, roller bearings, and gearteeth. The flakes from the ball bearings and the roller bearings are usually between 0.002-0.010 inch (0.051-0.254 mm) in thickness. They usually have an irregular, plate-like shape and have radial cracks. When you clean the flake, it is more shiny than other types of debris contamination. The flakes from the gearteeth are shiny, long, thin, and can have an irregular shape. They are usually thicker and not as shiny as the flakes from the ball or roller bearing.

MECH	INSP

(h) If there are five or more flakes or chips on a MCD probe, the engine is not serviceable. Disassemble the engine and find the source of the debris contamination.

1) Do a spectrographic analysis of the debris contamination. Disassemble the engine and find the source of the debris contamination.

(i) Combination of chips/flakes and fines: If a combination of both chips/flakes and fines are found on a probe, follow the chip/flakes path shown in the Evaluation Chart, Fig. 602.

(j) If there are less than five chips or flakes on a probe, do the steps that follow:

1) Remove the main oil filter (AMM 79-21-05/401).

2) Keep the oil which you drain from the housing of the main oil filter.

3) Flush the main oil filter with the petroleum solvent.

4) Put the petroleum solvent through a filter paper or a clean cloth.

a) Keep the debris contamination for the identification.

5) Install a new main oil filter (AMM 79-21-05/401).

6) Examine the (used) main oil filter and the oil in the housing for metallic contamination.

a) If there is metallic debris contamination which is not build debris in the main oil filter and the filter housing oil, and the quantity is sufficient to make a circle which has a minimum diameter of 0.50 inch (12.700 mm), do the steps that follow:

1. Remove the engine from operation.

2. Disassemble the engine and find the source of the debris contamination.

b) If there is metallic debris contamination which is not build debris, and the quantity is not sufficient to make a circle which has a minimum diameter of 0.50 inch (12.700 mm), do the steps that follow:

1. Continue the engine in service, and examine the MCD probe each 25 hours of operation for the subsequent 200 hours.

2. Collect the contamination from the MCD probe, and do an analysis of the material within 200 hours of operation.

3. If there is contamination from the bearings or gear material, remove the engine from operation. Disassemble the engine, and find the source of the material.

4. If the debris contamination is the same or increases in consecutive magnetic probe inspections during the 200 flight hour inspection interval, remove the engine from service. Disassemble the engine to find the source of the debris contamination.

5. If you do not find bearing or gear material, and if the quantity of the contamination decreases in each consecutive inspection of the probes during the 200 hours, put the engine back into operation.

(5) Do a check of the magnetic strength of the MCD Probe with one of the steps that follow:

CAUTION: DO NOT LET THE MAGNETS ON THE MCD PROBE TOUCH EACH OTHER. IF THE MAGNETS TOUCH EACH OTHER, THEY CAN BECOME DEMAGNETIZED AND MUST BE REPLACED.

(a) Preferred method -
Have the magnetic probe pick up a 1.00 inch (25.400 mm) diameter carbon steel ball bearing (if the ball is not available, do the optional method below).

MECH | INSP

(b) Optional method -
Hang the MCD probe from a horizontal steel surface so that the magnet has to fully support the weight of the probe.

NOTE: This is not the preferred strength test but can be used at locatons that do not have a 1.00 inch (25.400 mm) diameter carbon steel bearing to perform the preferred method.

(6) If the MCD probe does not operate correctly, replace the MCD probe (AMM 79-21-10/401).

(7) Clean the MCD probe with the solvent.

(a) Make the MCD probe dry with a clean cloth.

(b) Make sure you remove all the debris contamination.

(8) Replace the packing on the probes.

NOTE: The shape of the grip and the quantity of packings can be different from what is shown in the figure.

(9) Install the MCD probe into the applicable valve (AMM 79-21-10/401).

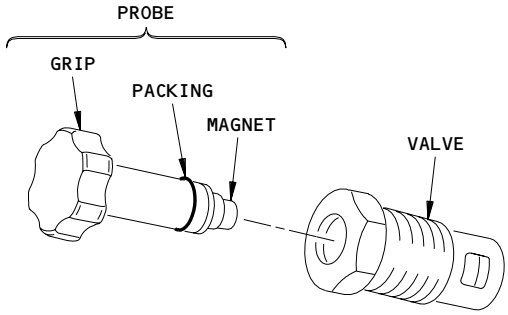
WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 HWEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURY TO PERSONS OR DAMAGE TO EQUIMENT CAN OCCUR.

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

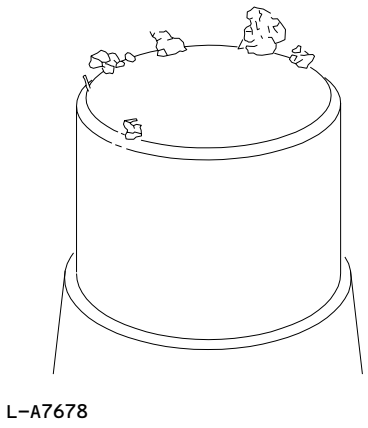
(11) Close the core cowl panels (AMM 71-11-06/201).

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

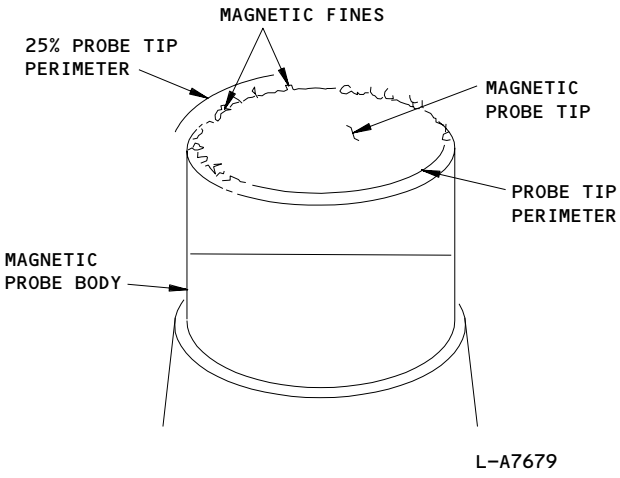
(13) Do the activation procedure for the thrust reversers (AMM 78-31-00/201).



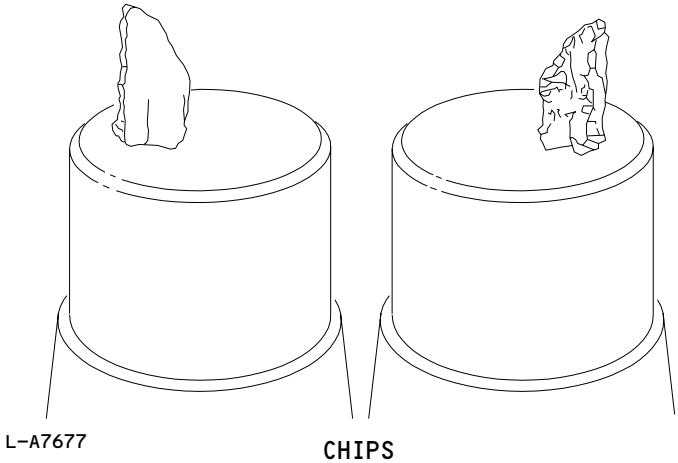
MAGNETIC CHIP DETECTOR ASSEMBLY



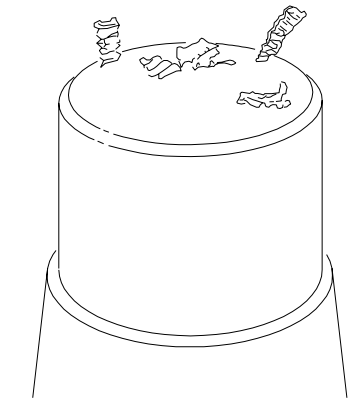
FLAKES



MAGNETIC FINES

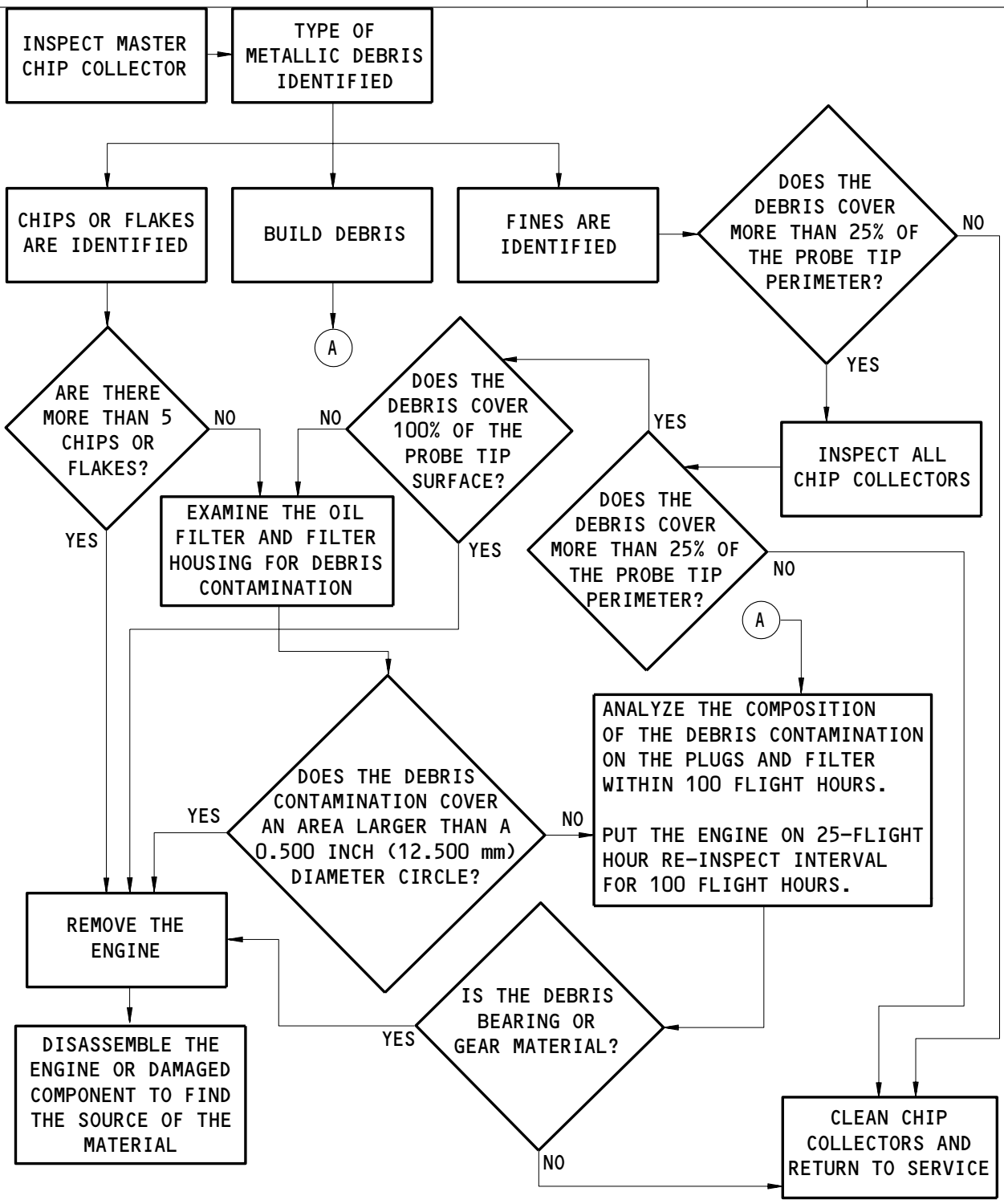


CHIPS

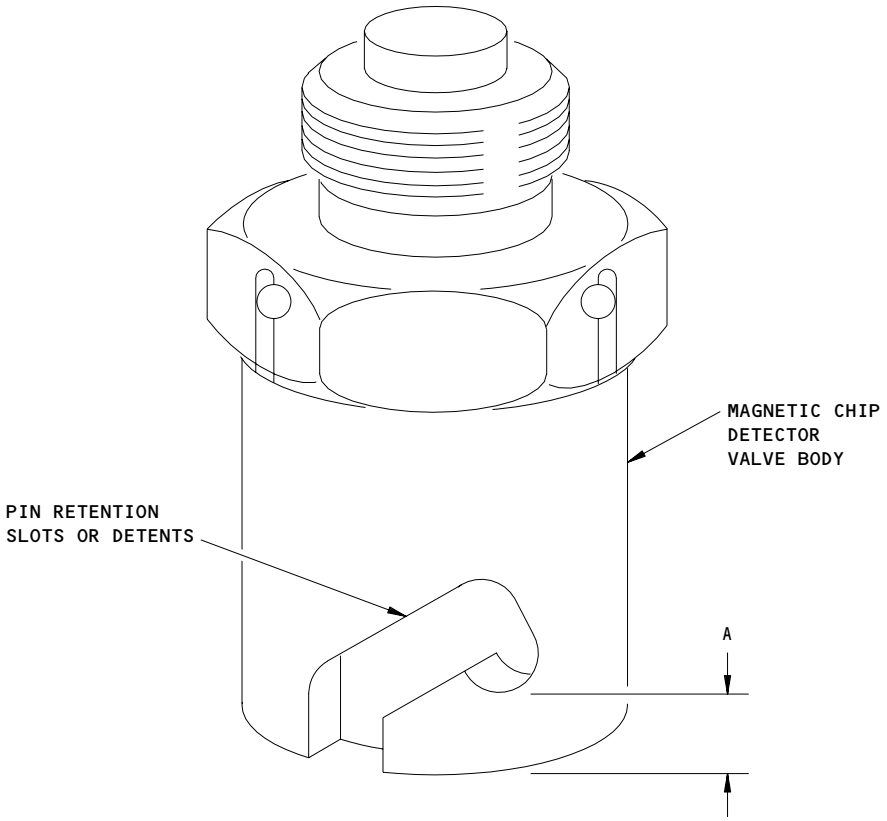


BUILD DEBRIS

Magnetic Chip Detector Assembly
Figure 601



Evaluation Chart for Magnetic Fines, Chips and Flakes
Figure 602



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Magnetic Chip Detector Valve Body Inspection
Figure 603

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-411-C1-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		00500 HRS	10101	005	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	ENGINE 2 MAGNETIC CHIP DETECTORS		ALL	4000

ZONES	ACCESS PANELS
421	423AL 424AR 425AL 426AR 427AL 428AR

MECH | INSP

MPD ITEM NUMBER

CHECK THE FOLLOWING MAGNETIC CHIP DETECTORS (IF INSTALLED): N79-21-10-6A N79-21-10-6B

1. ANGLE GEARBOX,	79-21-10-6A	N79-21-10-6C
2. NO. 1, 1.5 AND 2 BEARING,	79-21-10-6B	N79-21-10-6D
3. NO. 3 BEARING,	79-21-10-6C	N79-21-10-6E
4. NO. 4 BEARING,	79-21-10-6D	N79-21-10-6F
5. MAIN GEARBOX,	79-21-10-6E	
6. OIL TANK.	79-21-10-6F	

1. Do the Inspection of the Magnetic Chip Detectors

A. General

(1) This procedure gives the instructions to examine and interpret the contamination found on the magnetic chip detectors (MCD).

(2) There are four main types of contamination: build debris or residual debris (contamination from the assembly of the engine) fines, flakes, and chips.

(3) It is necessary to keep a record of all the debris contamination that is found on the probes and in the oil filter.

(4) You must examine the debris contamination with suitable magnification. It is recommended that you use a magnifiying glass that has 20X magnification.

(5) The PWA 107014 Photo Aid can be used as an aid to show actual photos of conditions which can be found during inspection.

(6) If the engine or gearbox can not continue in service, you must send the debris contamination and/or analysis of the debris contamination with the engine or gearbox to the repair facility.

B. References

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

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

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

(4) AMM 79-21-10/401, Magnetic Chip Detectors

(5) AMM 79-21-05/401, Main Oil Filter

C. Equipment

D. Prepare to Do the Inspection

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

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

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

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

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

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

E. Do the Inspection of the Magnetic Chip Detectors

CAUTION: DO NOT PERMIT THE MAGNETS ON THE PROBES TO TOUCH EACH OTHER OR THEY CAN BECOME DEMAGNETIZED.

(1) Remove the magnetic chip detector (MCD) probe from the valve (AMM 79-21-10/401).

(a) Make a record of the position of each probe.

MECH | INSP

(b) If oil leaks from the valve, replace the valve packing.

(c) If the valve still leaks with the new valve packing, replace the valve (AMM 79-21-10/401).

(2) Inspect the Magnetic Chip Detector Valve Body.

(a) Inspect the three retention grooves on the valve bodies with Part Numbers 5OR499 or 5OR501.

1) Examine the bottom of the three retention grooves in the valve body wall for wear (Fig. 603).

2) If wear is found, measure the thickness of metal at the bottom of the three retention grooves. See Dimension A on Figure 603. Minimum serviceable thickness is 0.130 inch (3.302 mm).

NOTE: You can measure the thickness of the metal at the bottom of the three detents with a caliper that can measure up to 0.150 in (3.810 mm).

3) If the valve body has less than the minimum thickness of material at the bottom of the retention grooves, you must replace the magnetic chip detector valve and probe as specified below.

a) If dimension A is less than 0.100 inch (2.540 mm) the magnetic chip detector valve body and probe are not serviceable. You must replace the magnetic chip detector.

b) If dimension A is more than 0.100 inch (2.540 mm) but less than 0.130 inch (3.302 mm), and if a new magnetic chip detector is not available, replace the magnetic chip detector at the next A-check.

c) Do this procedure if you replace the magnetic chip detector valve and probe: (AMM 79-21-10/401).

(3) If the probe is covered by a drop of oil, apply a few drops of isopropyl alcohol to the probe tip.

(4) Find the type of contamination that is found on the MCD probe (Fig. 601):

Build (residual) debris

NOTE: The PWA 107014 Photo Aid (see condition A) can be used to see actual photos of different conditions.

Magnetic fines

NOTE: The PWA 107014 Photo Aid (see conditions B and E) can be used to see actual photos of different conditions.

(a) Description: Shown as very small particles less than 0.010 inch (0.254 mm) in length and with different widths. They can show as a black or gray sludge or fuzz on the magnetic probe. When the oil on the probe is removed, they show as dull hairlike slivers.
Fines are typical of low-time engines and small quantities are serviceable.

(b) Source: When the engine components wear, they can usually cause a small quantity of fines. You can keep the engine in operation with this condition. Fines can also be caused by bearing skid and the spinning of parts such as spacers, seal plates, and shaft plugs. Bearing skid and spinning make fines at a higher rate than usual wear. You can not keep the engine in operation in this condition. Service experience shows that only the bearing for the deoiler idler gear in the main gearbox has bearing skid that will make fines.

(c) Action: If fines are collected on the probe tip, do the steps that follow:

1) If the fines collected on the probe tip make up less than 25 percent of the probe tip's perimeter (see PWA 10714 Photo Aid Condition B) the engine can continue in service. Obey the usual magnetic chip detector inspection interval.

2) If the fines collected on the probe tip make up more than 25 percent of the probe tip's perimeter (see PWA 10714 Photo Aid Condition E) examine the individual compartment chip collectors for debris.

3) If there is debris on more than 25 percent of any of the individual probe tip's perimeter (see PWA Photo Aid, Condition E) and less than 100 percent surface coverage, do the steps that follow:

MECH	INSP

a) Remove the main oil filter (AMM 79-21-05/401).

b) Keep the oil which you drain from the housing of the main oil filter.

c) Flush the main oil filter with the petroleum solvent.

d) Put the petroleum solvent through a filter paper or a clean cloth.

e) Keep the debris contamination for the identification.

f) Install a new main oil filter (AMM 79-21-05/401).

g) Examine the main oil filter and the oil in the housing for metallic contamination.

h) If there is metallic debris contamination which is not build debris in the main oil filter and the filter housing oil, and the quantity is sufficient to make a circle which has a minimum diameter of 0.50 inch (12.700 mm), do the steps that follow:

   1. Remove the engine from operation.

   2. Disassemble the engine and find the source of the debris contamination.

i) If there is metallic debris contamination which is not build debris, and the quantity is not sufficient to make a circle which has a minimum diameter of 0.50 inch (12.700 mm), do the steps that follow:

   1. Continue the engine in service, and examine the MCD probe each 25 hours of operation for the subsequent 200 hours.

   2. Collect the contamination from the MCD probe, and do an analysis of the material within 200 hours of operation.

   3. If there is contamination from the bearings or gear material, remove the engine from operation. disassemble the engine, and find the source of the material.

4. If the debris contamination is the same or increases in consecutive magnetic probe inspections during the 200 flight hour inspection interval, remove the engine from service. Disassemble the engine to find the source of the debris contamination.

5. If you do not find bearing or gear material, and if the quantity of the contamination decreases in each consecutive inspection of the probes during the 200 hours, put the engine back into operation.

4) If any individual MCD probe has 100 percent coverage of fines, the engine must be removed from service.

Chips or flakes

NOTE: The PWA 107014 Photo Aid (see conditions D and F) can be used to see actual photos of different conditions.

(d) Description of chips: Chips are very thick pieces of metal where one surface is usually smooth and the other surface is rough or irregular.

(e) Source of chips: The chips from ball and roller bearings are usually smooth and shiny on one side. This side can show the initial manufacture process. The opposite side is not as shiny and looks like a fracture has occurred. The chips from gearteeth have one shiny side with machine marks and one side that is smooth and not shiny.

(f) Description of Flakes: Flakes have an irregular shape, but are usually flat and shiny on the two sides. You must do an analysis of the flakes to know their source.

(g) Source of flakes: The flakes come from ball bearings, roller bearings, and gearteeth. The flakes from the ball bearings and the roller bearings are usually between 0.002-0.010 inch (0.051-0.254 mm) in thickness. They usually have an irregular, plate-like shape and have radial cracks. When you clean the flake, it is more shiny than other types of debris contamination. The flakes from the gearteeth are shiny, long, thin, and can have an irregular shape. They are usually thicker and not as shiny as the flakes from the ball or roller bearing.

MECH	INSP

(h) If there are five or more flakes or chips on a MCD probe, the engine is not serviceable. Disassemble the engine and find the source of the debris contamination.

1) Do a spectrographic analysis of the debris contamination. Disassemble the engine and find the source of the debris contamination.

(i) Combination of chips/flakes and fines: If a combination of both chips/flakes and fines are found on a probe, follow the chip/flakes path shown in the Evaluation Chart, Fig. 602.

(j) If there are less than five chips or flakes on a probe, do the steps that follow:

1) Remove the main oil filter (AMM 79-21-05/401).

2) Keep the oil which you drain from the housing of the main oil filter.

3) Flush the main oil filter with the petroleum solvent.

4) Put the petroleum solvent through a filter paper or a clean cloth.

a) Keep the debris contamination for the identification.

5) Install a new main oil filter (AMM 79-21-05/401).

6) Examine the (used) main oil filter and the oil in the housing for metallic contamination.

a) If there is metallic debris contamination which is not build debris in the main oil filter and the filter housing oil, and the quantity is sufficient to make a circle which has a minimum diameter of 0.50 inch (12.700 mm), do the steps that follow:

1. Remove the engine from operation.

2. Disassemble the engine and find the source of the debris contamination.

b) If there is metallic debris contamination which is not build debris, and the quantity is not sufficient to make a circle which has a minimum diameter of 0.50 inch (12.700 mm), do the steps that follow:

1. Continue the engine in service, and examine the MCD probe each 25 hours of operation for the subsequent 200 hours.

2. Collect the contamination from the MCD probe, and do an analysis of the material within 200 hours of operation.

3. If there is contamination from the bearings or gear material, remove the engine from operation. Disassemble the engine, and find the source of the material.

4. If the debris contamination is the same or increases in consecutive magnetic probe inspections during the 200 flight hour inspection interval, remove the engine from service. Disassemble the engine to find the source of the debris contamination.

5. If you do not find bearing or gear material, and if the quantity of the contamination decreases in each consecutive inspection of the probes during the 200 hours, put the engine back into operation.

(5) Do a check of the magnetic strength of the MCD Probe with one of the steps that follow:

CAUTION: DO NOT LET THE MAGNETS ON THE MCD PROBE TOUCH EACH OTHER. IF THE MAGNETS TOUCH EACH OTHER, THEY CAN BECOME DEMAGNETIZED AND MUST BE REPLACED.

(a) Preferred method -
Have the magnetic probe pick up a 1.00 inch (25.400 mm) diameter carbon steel ball bearing (if the ball is not available, do the optional method below).

MECH | INSP

(b) Optional method -
Hang the MCD probe from a horizontal steel surface so that the magnet has to fully support the weight of the probe.

NOTE: This is not the preferred strength test but can be used at locatons that do not have a 1.00 inch (25.400 mm) diameter carbon steel bearing to perform the preferred method.

(6) If the MCD probe does not operate correctly, replace the MCD probe (AMM 79-21-10/401).

(7) Clean the MCD probe with the solvent.

(a) Make the MCD probe dry with a clean cloth.

(b) Make sure you remove all the debris contamination.

(8) Replace the packing on the probes.

NOTE: The shape of the grip and the quantity of packings can be different from what is shown in the figure.

(9) Install the MCD probe into the applicable valve (AMM 79-21-10/401).

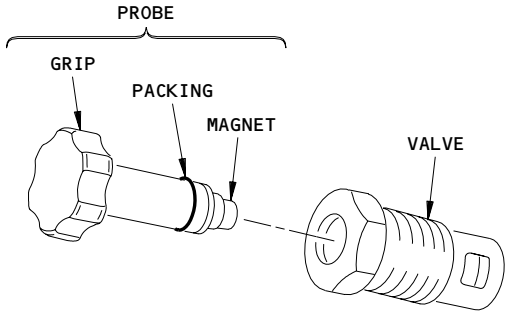
WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 HWEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURY TO PERSONS OR DAMAGE TO EQUIMENT CAN OCCUR.

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

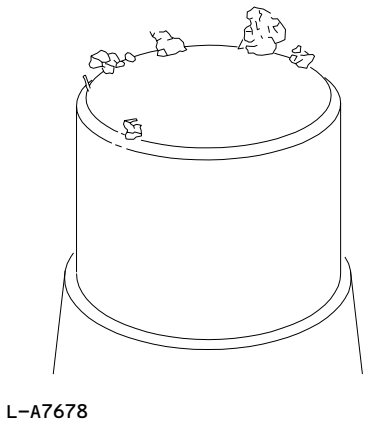
(11) Close the core cowl panels (AMM 71-11-06/201).

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

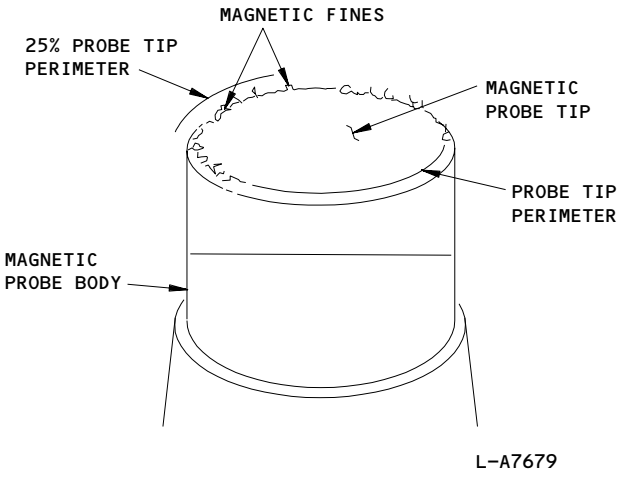
(13) Do the activation procedure for the thrust reversers (AMM 78-31-00/201).



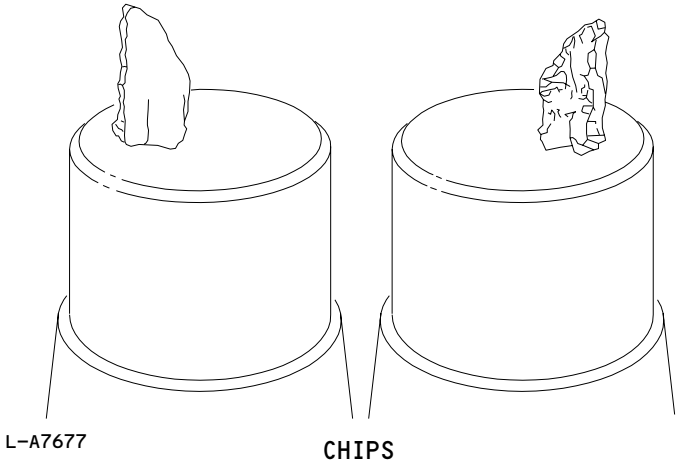
MAGNETIC CHIP DETECTOR ASSEMBLY



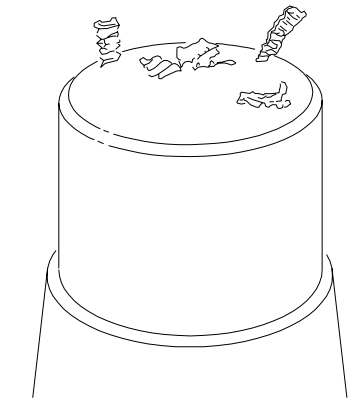
FLAKES



MAGNETIC FINES

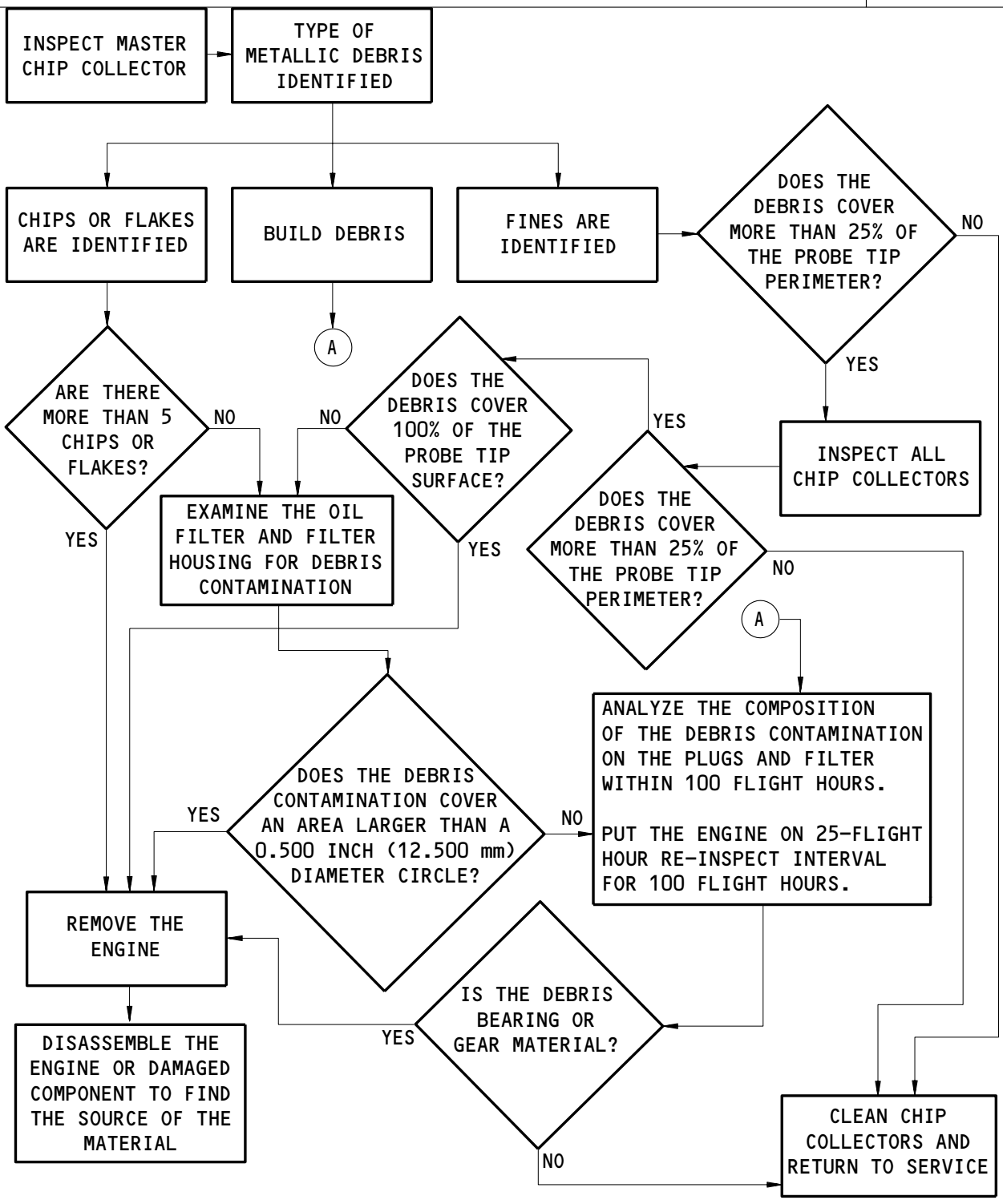


CHIPS

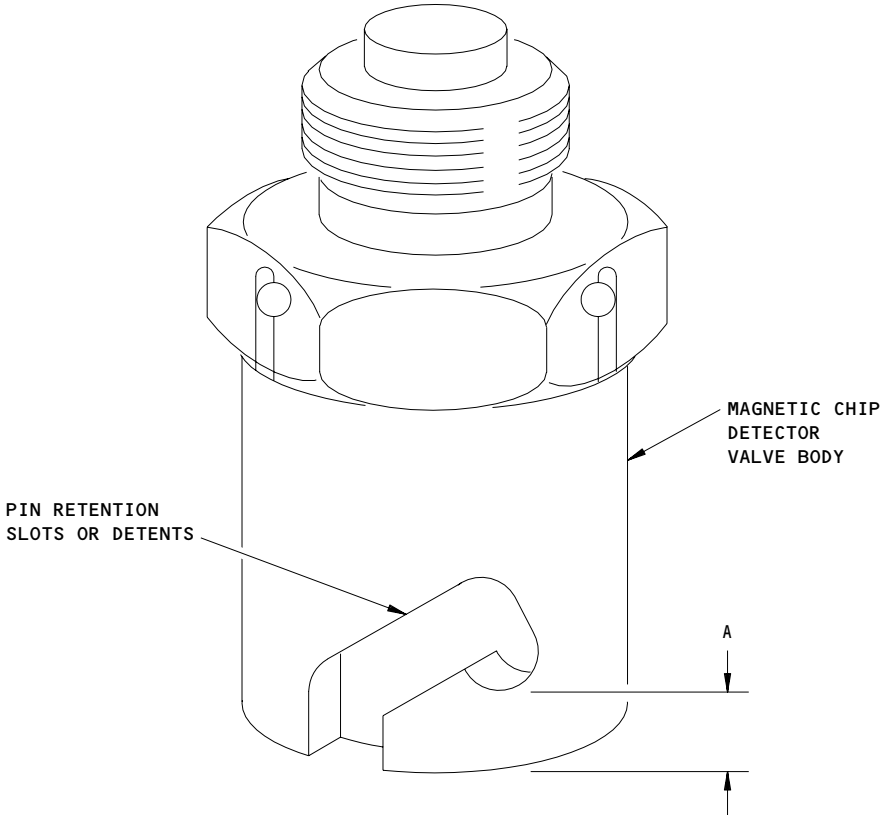


BUILD DEBRIS

Magnetic Chip Detector Assembly
Figure 601



Evaluation Chart for Magnetic Fines, Chips and Flakes
Figure 602



L-D3990 (0308)

Magnetic Chip Detector Valve Body Inspection
Figure 603

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-412-01-1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 1		10000 HRS	12020	009	DEC 22/00

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
DISCARD	ENG OIL FILTER DIFF PRESS SWITCH		ALL	NOTE

ZONES	ACCESS PANELS
411	415AL

MECH | INSP

MPD ITEM NUMBER

REPLACE THE ENGINE 1 ENGINE OIL FILTER DIFFERENTIAL PRESSURE SWITCH PART NUMBER S332T004-23 WITH A NEW SWITCH AS DEFINED IN FAA AD 91-09-15. N79-35-01-4A

NOTE: REWORKING, MODIFYING, OR OVERHAULING A USED SWITCH DOES NOT ZERO TIME THE SWITCH. SWITCHES REMOVED FOLLOWING THE ACCUMULATION OF 10,000 TOTAL SERVICE HOURS SHALL NOT BE RE-INSTALLED ON ANY AIRPLANE.

ENGINE NOTE: PW4000 ENGINES WITH ENGINE OIL FILTER DIFFERENTIAL PRESSURE SWITCHES P/N S332T004-23.

1. Remove the Oil Filter Differential Pressure Switch

A. References

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

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

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

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

B. Prepare to Remove the Differential Pressure Switch for the Oil Filter

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

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

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

MECH | INSP

(3) Open the left core cowl panel (AMM 71-11-06/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Open the left thrust reverser (AMM 78-31-00/201).

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

C. Remove the Differential Pressure Switch for the Oil Filter (Fig. 401)

(1) Disconnect the electrical connector from the differential pressure switch.

(a) Install the protection cap on the electrical connector.

(2) ENGINES PRE-PW-SB 79-77;
Do the steps that follow:

WARNING: DO NOT KEEP THE OIL ON YOUR SKIN FOR A LONG TIME. IF YOU DO NOT CLEAN THE OIL OFF, THE OIL CAN CAUSE INJURY.

(a) Disconnect the two oil pressure tubes from the differential pressure switch.

1) Install the protection caps on the two oil pressure tubes.

(b) Remove the bolts, washers and nuts which attach the differential pressure switch to the bracket.

(c) Remove the differential pressure switch from the engine.

(3) ENGINES POST-PW-SB 79-77;
Do the steps that follow:

(a) Remove the bolt and clamp that attach the oil filter pressure tube to the mount bracket.

(b) Disengage and remove the two oil filter pressure tubes (LP45, LP46) and elbow from the oil filter housing outlet and inlet ports.

(c) Remove the three bolts that attach the differential pressure switch to the mount bracket.

(d) Remove the differential pressure switch.

(e) Install protective plugs in the oil filter housing oulet and inlet ports as necessary.

2. Install the Oil Filter Differential Pressure Switch

A. Equipment

(1) M303, M305, or M307 Bergen Mechanical Crimper
Bergen Cable Technologies Inc
170 Gregg St
P.O. Box 1300
Lodi, NJ 07644-9982

B. Consumable Materials

(1) G02332 Ferrule, Safety Cable (P05-292)

(2) G02334 Lockwire, (P05-289) 0.032 inch (0.813 mm) - AS3214-02

(3) G02335 Cable, Safety (P05-291)

C. References

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

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

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

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

(5) AMM 79-35-00/501, Oil Filter Bypass Warning System

D. Install the Differential Pressure Switch for the Oil Filter (Fig. 401)

(1) ENGINES PRE-PW-SB 79-77;
Do the steps that follow:

(a) Install the differential pressure switch on the bracket with the bolts, washers and nuts.

1) ENGINES PRE-PW-SB 79-70;
Tighten the bolts to 32-38 pound-inches (3.6-4.3 newton-meters).

2) ENGINES POST-PW-SB 79-70;
Tighten the bolts to 23-26 pound-inches (2.6-2.9 newton-meters).

(b) Remove the protection caps from the oil pressure tubes.

(c) Connect the oil pressure tubes to the differential pressure switch.

1) ENGINES PRE-PW-SB 79-70;
Tighten the tube nuts to 135-145 pound-inches (15.3-16.4 newton-meters).

2) ENGINES POST-PW-SB 79-70;
Tighten the tube nuts to 65-75 pound-inches (7.3-8.5 newton-meters).

3) Attach lockwire or safety cable and safety cable ferrule to the tube nuts.

(2) ENGINES POST-PW-SB 79-77;
Do the steps that follow:

(a) Install the differential pressure switch on the bracket with the bolts, washers and nuts.

1) Lubricate the threads of the bolts, which attach the differential pressure switch, with engine oil.

2) Tighten the bolts to 36-40 pounds-inches (4.1-4.5 newton-meters).

(b) Install the elbow, threads lubricated with Engine Oil, to the connector installed in the left pressure port of the main oil filter housing (as viewed from the front).

1) Tighten the elbow to elbow to 65-75 pounds-inches (7.3-8.5 newton-meters).

(c) Install oil filter pressure tube (LP45):

1) Install the oil filter pressure tube (LP45), threads lubricated with Engine Oil, to the forward connector on the pressure switch and to the front connector installed in the main oil filter housing.

2) Attach the oil filter pressure tube (LP45) to the mount bracket with the clamp and bolt.

NOTE: The clamp is attached to the middle hole of the mount bracket to attach the oil filter pressure tube (LP45).

3) Tighten the clamp bolt to 36-40 pound-inches (4.1-4.5 newton-meters).

(d) Install the oil filter pressure tube (LP46), threads lubricated with Engine Oil, to the rear connector on the pressure switch and to the elbow installed in the main oil filter housing.

(e) Tighten the tube nuts of both oil filter pressure tubes (LP45, LP46) to 65-75 pound-inches (7.3-8.5 newton-meters).

(f) Attach lockwire or safety cable and safety cable ferrule to the tube nuts.

(3) Remove the protection cap from the electrical connector.

(4) Connect the electrical connector to the differential pressure switch.

E. Put the Airplane Back to Its Usual Condition

(1) Supply electrical power (AMM 24-22-00/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

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

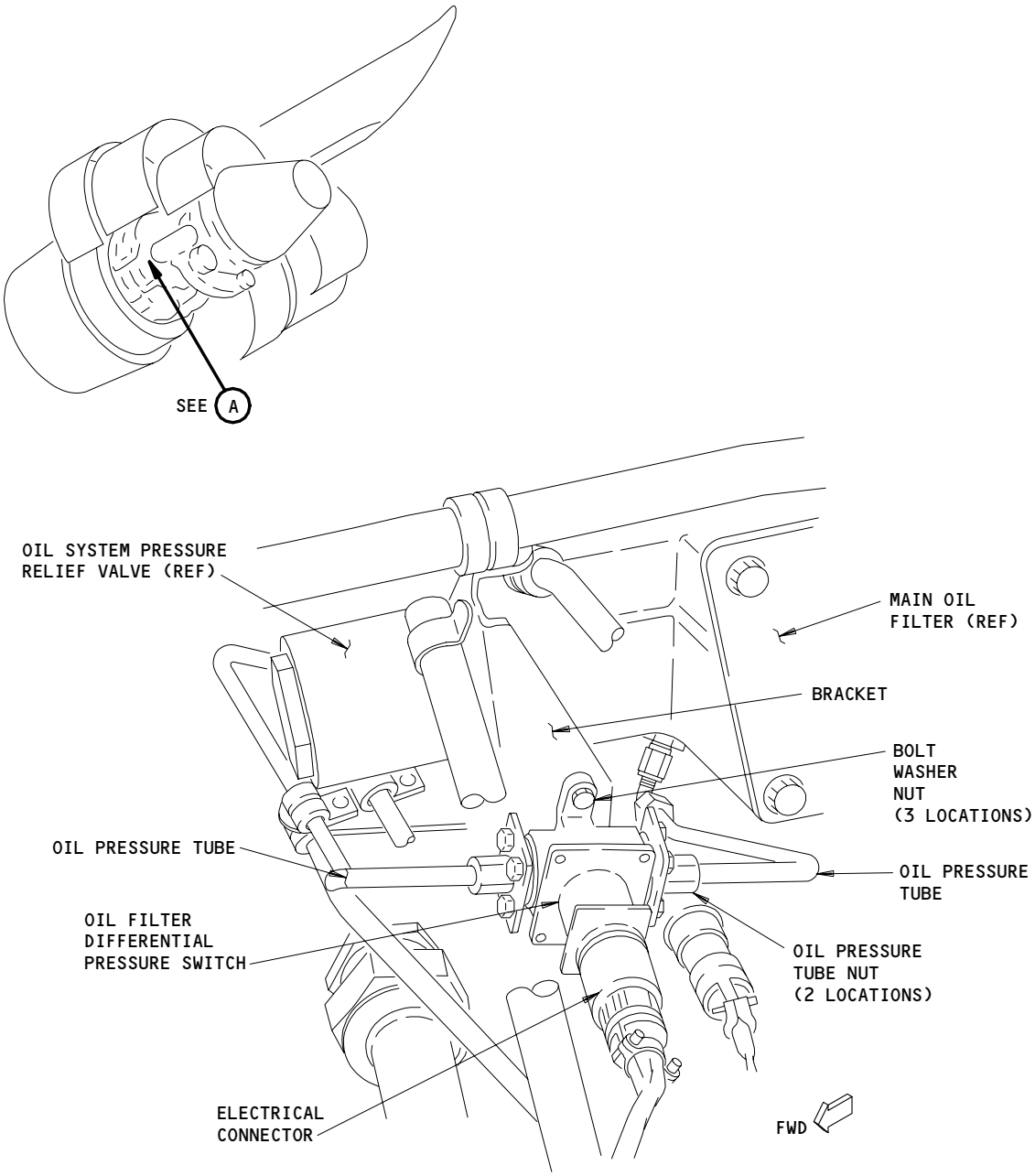
(3) Close the left core cowl panel (AMM 71-11-06/201).

(4) Close the left fan cowl panel (AMM 71-11-04/201).

MECH	INSP

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

(6) Do the adjustment procedure for the warning system of the oil filter bypass (AMM 79-35-00/501).



VIEW IN THE UP DIRECTION

A 1

1 ENGINES WITHOUT PW SB 79-70

2 ENGINES WITH PW SB 79-70

Oil Filter Differential Pressure Switch Installation
Figure 401 (Sheet 1)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	79-412-01-2
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	ENGINE 2		10000 HRS	12020	009	DEC 22/00

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
DISCARD	ENG OIL FILTER DIFF PRESS SWITCH		ALL	NOTE

ZONES	ACCESS PANELS
421	425AL

MECH | INSP

MPD ITEM NUMBER

REPLACE THE ENGINE 2 ENGINE OIL FILTER DIFFERENTIAL PRESSURE SWITCH PART NUMBER S332T004-23 WITH A NEW SWITCH AS DEFINED IN FAA AD 91-09-15. N79-35-01-4A

NOTE: REWORKING, MODIFYING, OR OVERHAULING A USED SWITCH DOES NOT ZERO TIME THE SWITCH. SWITCHES REMOVED FOLLOWING THE ACCUMULATION OF 10,000 TOTAL SERVICE HOURS SHALL NOT BE RE-INSTALLED ON ANY AIRPLANE.

ENGINE NOTE: PW4000 ENGINES WITH ENGINE OIL FILTER DIFFERENTIAL PRESSURE SWITCHES P/N S332T004-23.

1. Remove the Oil Filter Differential Pressure Switch

A. References

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

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

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

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

B. Prepare to Remove the Differential Pressure Switch for the Oil Filter

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

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

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

MECH | INSP

(3) Open the left core cowl panel (AMM 71-11-06/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU OPEN THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Open the left thrust reverser (AMM 78-31-00/201).

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

C. Remove the Differential Pressure Switch for the Oil Filter (Fig. 401)

(1) Disconnect the electrical connector from the differential pressure switch.

(a) Install the protection cap on the electrical connector.

(2) ENGINES PRE-PW-SB 79-77;
Do the steps that follow:

WARNING: DO NOT KEEP THE OIL ON YOUR SKIN FOR A LONG TIME. IF YOU DO NOT CLEAN THE OIL OFF, THE OIL CAN CAUSE INJURY.

(a) Disconnect the two oil pressure tubes from the differential pressure switch.

1) Install the protection caps on the two oil pressure tubes.

(b) Remove the bolts, washers and nuts which attach the differential pressure switch to the bracket.

(c) Remove the differential pressure switch from the engine.

(3) ENGINES POST-PW-SB 79-77;
Do the steps that follow:

(a) Remove the bolt and clamp that attach the oil filter pressure tube to the mount bracket.

(b) Disengage and remove the two oil filter pressure tubes (LP45, LP46) and elbow from the oil filter housing outlet and inlet ports.

(c) Remove the three bolts that attach the differential pressure switch to the mount bracket.

(d) Remove the differential pressure switch.

(e) Install protective plugs in the oil filter housing oulet and inlet ports as necessary.

2. Install the Oil Filter Differential Pressure Switch

A. Equipment

(1) M303, M305, or M307 Bergen Mechanical Crimper
Bergen Cable Technologies Inc
170 Gregg St
P.O. Box 1300
Lodi, NJ 07644-9982

B. Consumable Materials

(1) G02332 Ferrule, Safety Cable (P05-292)

(2) G02334 Lockwire, (P05-289) 0.032 inch (0.813 mm) - AS3214-02

(3) G02335 Cable, Safety (P05-291)

C. References

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

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

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

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

(5) AMM 79-35-00/501, Oil Filter Bypass Warning System

D. Install the Differential Pressure Switch for the Oil Filter (Fig. 401)

(1) ENGINES PRE-PW-SB 79-77;
Do the steps that follow:

(a) Install the differential pressure switch on the bracket with the bolts, washers and nuts.

1) ENGINES PRE-PW-SB 79-70;
Tighten the bolts to 32-38 pound-inches (3.6-4.3 newton-meters).

2) ENGINES POST-PW-SB 79-70;
Tighten the bolts to 23-26 pound-inches (2.6-2.9 newton-meters).

(b) Remove the protection caps from the oil pressure tubes.

(c) Connect the oil pressure tubes to the differential pressure switch.

1) ENGINES PRE-PW-SB 79-70;
Tighten the tube nuts to 135-145 pound-inches (15.3-16.4 newton-meters).

2) ENGINES POST-PW-SB 79-70;
Tighten the tube nuts to 65-75 pound-inches (7.3-8.5 newton-meters).

3) Attach lockwire or safety cable and safety cable ferrule to the tube nuts.

(2) ENGINES POST-PW-SB 79-77;
Do the steps that follow:

(a) Install the differential pressure switch on the bracket with the bolts, washers and nuts.

1) Lubricate the threads of the bolts, which attach the differential pressure switch, with engine oil.

2) Tighten the bolts to 36-40 pounds-inches (4.1-4.5 newton-meters).

(b) Install the elbow, threads lubricated with Engine Oil, to the connector installed in the left pressure port of the main oil filter housing (as viewed from the front).

1) Tighten the elbow to elbow to 65-75 pounds-inches (7.3-8.5 newton-meters).

(c) Install oil filter pressure tube (LP45):

1) Install the oil filter pressure tube (LP45), threads lubricated with Engine Oil, to the forward connector on the pressure switch and to the front connector installed in the main oil filter housing.

2) Attach the oil filter pressure tube (LP45) to the mount bracket with the clamp and bolt.

NOTE: The clamp is attached to the middle hole of the mount bracket to attach the oil filter pressure tube (LP45).

3) Tighten the clamp bolt to 36-40 pound-inches (4.1-4.5 newton-meters).

(d) Install the oil filter pressure tube (LP46), threads lubricated with Engine Oil, to the rear connector on the pressure switch and to the elbow installed in the main oil filter housing.

(e) Tighten the tube nuts of both oil filter pressure tubes (LP45, LP46) to 65-75 pound-inches (7.3-8.5 newton-meters).

(f) Attach lockwire or safety cable and safety cable ferrule to the tube nuts.

(3) Remove the protection cap from the electrical connector.

(4) Connect the electrical connector to the differential pressure switch.

E. Put the Airplane Back to Its Usual Condition

(1) Supply electrical power (AMM 24-22-00/201).

WARNING: OBEY THE INSTRUCTIONS IN AMM 78-31-00/201 WHEN YOU CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THE INSTRUCTIONS, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

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

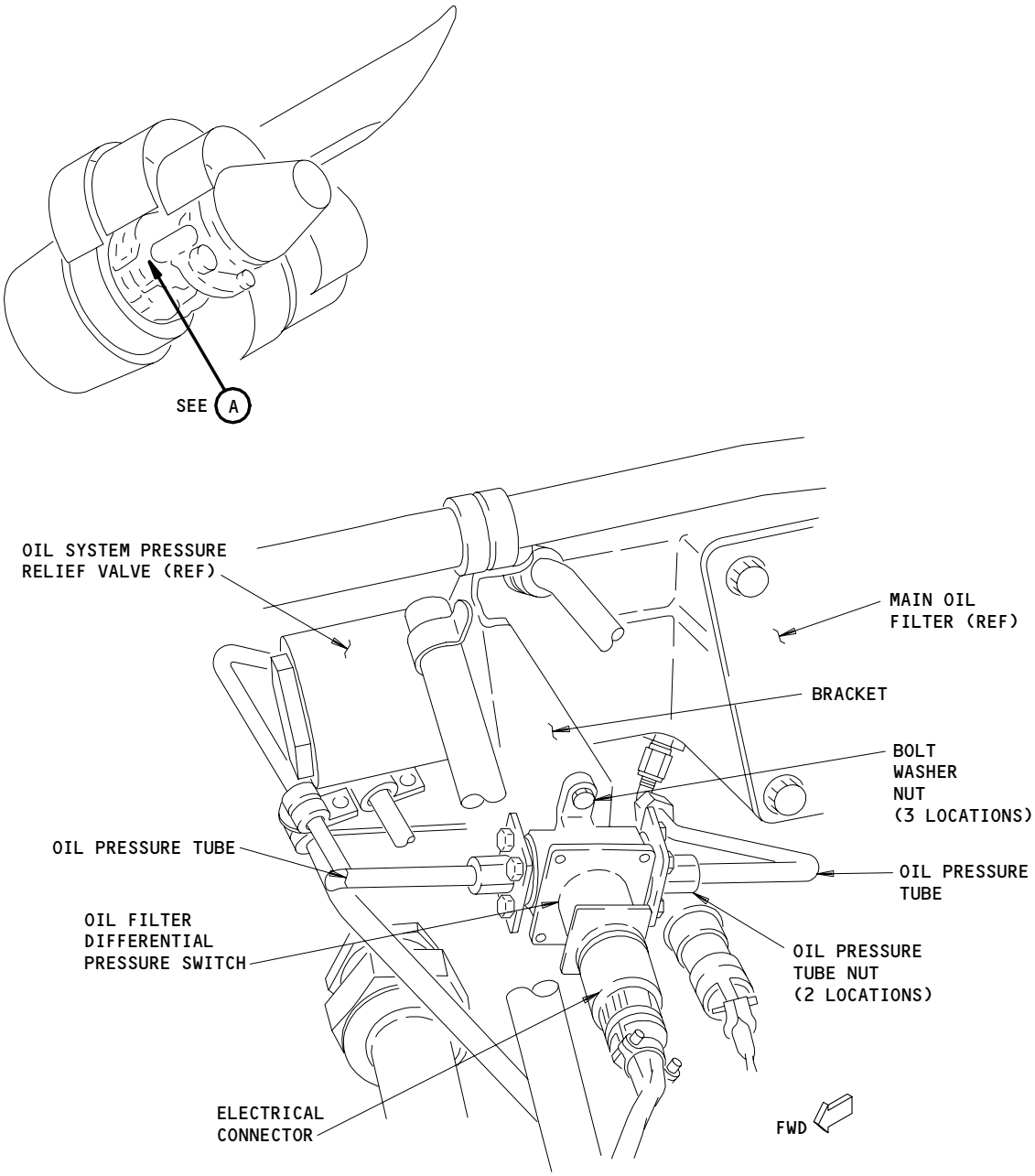
(3) Close the left core cowl panel (AMM 71-11-06/201).

(4) Close the left fan cowl panel (AMM 71-11-04/201).

MECH	INSP

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

(6) Do the adjustment procedure for the warning system of the oil filter bypass (AMM 79-35-00/501).



VIEW IN THE UP DIRECTION

A 1

1 ENGINES WITHOUT PW SB 79-70

2 ENGINES WITH PW SB 79-70

Oil Filter Differential Pressure Switch Installation
Figure 401 (Sheet 1)