STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-R01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT				003	AUG 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	AUXILIARY POWER UNIT (APU)		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP	MPD ITEM NUMBER

REPLACE THE AUXILIARY POWER UNIT (APU). 49-11-01-4A

AIRPLANE NOTE: APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER. THIS CARD IS NOT A SCHEDULED MAINTENANCE TASK. IT IS A COMPONENT CHANGE CARD AND IT IS PROVIDED FOR OPERATOR CONVENIENCE DURING UNSCHEDULED MAINTENANCE ACTIVITIES. SEE APPENDIX A OF THE 767 MAINTENANCE PLANNING DATA (MPD) DOCUMENT,D622T001, FOR A DESCRIPTION OF THE COMPONENT CHANGE CARDS.

1. General

   A. There are four tasks in this procedure. The first task is to remove the APU with the two fishpole hoists. The second task is to install the APU with the two fishpole hoists. The third task is to remove the APU with the hydraulic jack. The fourth task is to install the APU with the hydraulic jack.

   B. There are two procedures available for the removal and installation of the APU. Each procedure is optional to the other. The procedure that is used is determined by the ground equipment that is available.

2. APU Removal (Fishpole Hoist Procedure) (Fig. 401, Fig. 402, Fig. 403, Fig. 404)

   A. References

      (1) AMM 21-00-21/201, Air Conditioning System Oil Smoke/Fume Contamination (Removal)

      (2) AMM 36-11-01/701, Pneumatic Duct

   B. Special Tools and Equipment

      (1) APU Cradle Hoist Equip - A49001-78 or A49001-84

(2) APU Cradle Ballast - A49001-3 or A49001-17

(3) APU Transportation Dolly - A49003-1 or A49003-12

(4) APU Support Equip (includes support retainers, thread protectors, and exhaust duct support saddle) - A49004-1

(5) One set of these fishpole hoists is required:

(a) PF51-011 or PF51 Series Hoist - Fishpole, Manual Powered or Air-Driven Powered (500 Pound Capacity) (Quantity of 2)
06714 P. F. Industries Inc.
151 S. Michigan St., Seattle, WA 98108-3225 or

(b) 10/3641 Hoist - Fishpole, Manual Powered (Quantity of 2)
Didsbury Engineering Co. Ltd,
Manor Road, Levenshulme, Manchester M19 3EJ or

(c) AP6108 Hoist - Fishpole, Advanced Chain-Driven (Quantity of 2)
Morgan Aero Products
2719 Pacific Avenue, Everett, WA 98201

C. Standard Tools and Equipment

(1) Container - 1.5 U.S. Gallon (5.7 Liter) capacity, for fuel

D. Prepare for the APU Removal

(1) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

E. APU Removal

(1) Remove the electrical connections from the generator (Fig. 401).

(a) Remove the terminal block cover (17) from the generator.

(b) Remove the terminal nuts (18) and the washers (14), or the lock nut as applicable.

(c) Remove the four power leads and identify for installation.

(d) Install the terminal nuts (18) and the washers (14), or the lock nut on the terminal studs.

(e) Install the terminal block cover (17) with the washers (15) and the screws (16).

(2) Disconnect the APU harness, generator cables, and the starter motor cables from the supports on the APU.

MECH | INSP

(3) Disconnect the APU harness and starter motor cables at the firewall (Fig. 401).

NOTE: The starter motor cables can be disconnected at the starter motor or at the firewall.

(4) Remove the nuts (9) and washers (8) to disconnect the bonding jumper (7) from the fuselage (Fig. 401).

(5) Disconnect the generator control connector from the generator (Fig. 401).

(6) Remove the clamps (1), flex ducts (2, 4), and discharge duct (3).

(7) Loosen the clamps (6) on the air supply duct (5) at the left side of the APU (Fig. 401).

(a) Disengage the clamps (6) from the flange on the air supply duct (5).

(b) Remove the air supply duct (5).

(8) Put caps on all of the openings of the air supply and oil-cooler-discharge ducts.

(9) Install the exhaust duct support saddle and tighten the buckles (Fig. 402).

(10) Loosen the V-band clamp and slide the exhaust duct aft (Fig. 402).

(11) Put the container below the fuel control unit.

(12) Disconnect the fuel hose at the fuel control unit (Fig. 401).

(a) Let the fuel drain from the fuel hose.

(b) Put caps on the openings of the fuel hose and the fuel control unit.

MECH | INSP

WARNING: MAKE SURE THE TWO FISHPOLE HOISTS ARE IN A SERVICEABLE CONDITION. THE TWO CABLES OR CHAINS OF THE TWO FISHPOLE HOISTS MUST SHOW NO SIGNS OF DAMAGE. YOU CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

CAUTION: FISHPOLE HOISTS WITH A CABLE AND DRUM ASSEMBLY; MAKE SURE THE TWO CABLES OF THE TWO FISHPOLE HOISTS ARE EQUALLY WOUND AROUND THE DRUM ASSEMBLY BEFORE YOU USE THE TWO FISHPOLE HOISTS TO HOLD THE APU.

(13) Install the two fishpole hoists (Fig. 403):

(a) Install the hoist beam from the bracket on the plenum to the fuselage (Fig. 403).

NOTE: The hoist beam is part of the hoist equipment.

(b) Examine the keyhole slot area for any damage before you install the fishpole hoist.

(c) Install the fishpole hoists in the keyhole slot on plenum (left side) and in the hoist beam (right side) (Fig. 403).

(d) Make sure the fishpole hoists are correctly installed.

NOTE: If the fishpole hoists do not correctly install in the keyhole slots, refer to the Service Letter 49-12 and the SB 49-18.

(e) Extend the fishpole hoists to a length that is easy to use.

(f) Install the cradle on the APU (Fig. 403):

1) Extend the fishpole hoist cables or chains and attach the cables or chains to the cradle on the ground.

2) Lift the cradle to the APU.

3) Align the cradle on the APU and attach the lockpins.

WARNING: INSTALL THE BALLAST ON THE CRADLE IF THE GENERATOR IS REMOVED. WITHOUT THE GENERATOR, THE APU IS NOT BALANCED AND CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONS.

4) Install the ballast on the cradle if the generator is removed (Fig. 404).

(g) Tighten the hoist cables a sufficient amount to take the weight off of the APU mounts (Fig. 403).

NOTE: The weight of an APU with oil in it and the support equipment is approximately 700 pounds (320 kg).

(14) Remove the cone bolt nuts (2) and washers (1) from the forward and aft mounts (Fig. 403).

NOTE: Use an open end wrench on the shaft flats between the mount bracket and the shockmount. This holds the shaft while you remove the cone bolt nuts.

(15) Lower the APU (10) until the mount brackets are free of the cone bolts.

(16) Move the aft shockmounts on the right side outboard and install the retainer on the supports (Fig. 404).

(17) Lower the APU (10) onto the APU dolly (Fig. 404):

(18) Disconnect the fishpole hoist cables from the cradle.

(a) If you do not install a new APU immediately, remove the fishpole hoists from the airplane.

(19) Visually examine the air supply duct (5) for signs of oil and other contamination.

(a) If you find signs of oil and other contamination, then do these tasks:

1) Clean the air supply duct (5). To clean it, do this task: Cleaning the Bare Titanium Ducts (AMM 36-11-01/701).

2) Remove the oil contamination from the air conditioning and pneumatic systems. To remove it, do this task: Removal of Oil Contamination from the Air Conditioning and Pneumatic Systems (AMM 21-00-21/201).

3. APU Installation (Fishpole Hoist Procedure) (Fig. 401, Fig. 402, Fig. 403, Fig. 404)

NOTE: If you install a new APU, install the bonding jumper (7) and the starter motor cables (12) with the APU on the ground. Also, do the APU - Servicing procedure (AMM 12-13-04/301) before you install the APU.

A. Equipment

(1) APU Cradle Hoist Equip - A49001-78 or A49001-84

(2) APU Cradle Ballast - A49001-3 or A49001-17

(3) APU Transportation Dolly - A49003-1 or A49003-12

(4) APU Support Equip (includes support retainers, thread protectors, and exhaust duct support saddle) - A49004-1

(5) One set of these fishpole hoists is required:

(a) PF51-011 or PF51 Series Hoist - Fishpole, Manual Powered or Air-Driven Powered (500 Pound Capacity) (Quantity of 2)
06714 P. F. Industries Inc.
151 S. Michigan St., Seattle, WA 98108-3225 or

(b) 10/3641 Hoist - Fishpole, Manual Powered (Quantity of 2)
Didsbury Engineering Co. Ltd,
Manor Road, Levenshulme, Manchester M19 3EJ or

(c) AP6108 Hoist - Fishpole, Advanced Chain-Driven (Quantity of 2)
Morgan Aero Products
2719 Pacific Avenue, Everett, WA 98201

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	10	Auxiliary Power Unit	49-11-00	01	80, 81 or 82

C. References

(1) AMM 12-13-04/301, Servicing (Oil Fill)

(2) AMM 24-21-01/401, APU Generator

(3) AMM 49-11-00/201, Auxiliary Power Unit

(4) AMM 49-13-00/601, APU Mounts

(5) AMM 49-61-05/201, APU Control Unit

(6) AMM 49-94-04/401, Oil Quantity Transmitter

D. APU Installation

(1) Before you install the APU, visually examine both the airplane and the APU mount assemblies for cracks, wear, or damage (AMM 49-13-00/601).

(2) If it is necessary, remove the covers from the APU inlet plenum and from the APU exhaust duct.

(3) Examine the APU inlet plenum and air inlet ducts for foreign objects, chips and cracks.

(4) Do a check for the oil quantity transmitter on the new APU (AMM 49-94-04/401):

NOTE: The part number for the oil quantity transmitter is 8TJ99GGE1 (Boeing part number S351N101-1).

MECH | INSP

(a) If the oil quantity transmitter is not installed, then do these steps to replace with an oil quantity transmitter:

NOTE: The low oil level switch can be installed on the new APU. It is necessary to replace it with an oil quantity transmitter.

1) Remove the low oil level switch from the new APU.

2) Do this task: Oil Quantity Transmitter Installation (AMM 49-94-04/401).

WARNING: MAKE SURE THE TWO FISHPOLE HOISTS ARE IN A SERVICEABLE CONDITION. THE TWO CABLES OR CHAINS OF THE TWO FISHPOLE HOISTS MUST SHOW NO SIGNS OF DAMAGE. YOU CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

CAUTION: FISHPOLE HOISTS WITH A CABLE AND DRUM ASSEMBLY; MAKE SURE THE TWO CABLES OF THE TWO FISHPOLE HOISTS ARE EQUALLY WOUND AROUND THE DRUM ASSEMBLY BEFORE YOU USE THE TWO FISHPOLE HOISTS TO HOLD THE APU.

(5) Install the fishpole hoists (Fig. 403):

(a) Examine the keyhole slot area for any damage before you install the fishpole hoist.

(b) Install the fishpole hoists in the keyhole slots (Fig. 403).

(c) Make sure the fishpole hoists are correctly installed.

NOTE: If the fishpole hoists do not correctly install in the keyhole slots, refer to the Service Letter 49-12 and the SB 49-18.

(6) Align the APU and cradle below the APU compartment.

(7) Attach the hoist cables to the cradle (Fig. 403).

MECH | INSP

WARNING: INSTALL THE BALLAST ON THE CRADLE IF THE GENERATOR IS REMOVED. WITHOUT THE GENERATOR, THE APU IS NOT BALANCED AND CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONS.

(8) Install the ballast on the cradle if the generator is removed.

(9) Lift the APU with the fishpole hoists until the mount brackets are just below the cone bolts.

NOTE: The weight of an APU with oil and the support equipment is approximately 700 pounds (320 Kg).

(10) Remove the support retainers from the support rods (Fig. 404).

CAUTION: MAKE SURE YOU OPERATE THE HOIST MANUALLY AND CAREFULLY LIFT THE APU SO YOU DO NOT DAMAGE THE CONE SURFACE ON THE MOUNT BRACKET.

(11) If the hoist has a pneumatic motor, set the hoist to manual operation.

(12) Lift the APU until the cone bolts are engaged.

(13) Remove the thread protectors from the cone bolts.

(14) Install new cone bolt washers (1) and nuts (2) or use washers and nuts that had a dye penetrant inspection (Fig. 403).

(a) Do the torque limit test for the three nuts (2):

1) Tighten the three nuts (2)to a run-on torque of not more than 100 inch-pounds (11.3 newton-meters) until you can see one to two full threads and the cone bolt chamfer extends below each nut.

NOTE: Use an open-end wrench on the shaft between the APU mounting bracket and the shockmount to hold the shaft.

2) Make sure the three washers (1) do not touch the bottom surface of the three APU mounting brackets.

3) Make sure the break-away torque necessary to turn the three nuts (2) from this position is more than 14 inch-pounds (1.6 newton-meters).

4) Replace any nuts that do not meet the torque limits in the above steps.

(b) Tighten the nuts completely to 475-525 inch-pounds (53.68-59.33 newton meters).

(15) Remove the cradle from the APU (Fig. 403).

(a) Remove the lockpins from the mount brackets.

(b) Lower the cradle to the ground.

(c) Remove the hoist cables from the cradle.

(16) Remove the fishpole hoists and the hoist beam from the airplane (Fig. 403).

(17) Attach the bonding jumper (7) to the fuselage with the washers (8) and nuts (9) (Fig. 401).

(18) Remove the dust caps from all of the air ducts.

(19) Install the air supply duct (5).

(a) Tighten the clamps (6) to 50-70 inch-pounds (5.65-7.91 newton meters) (Fig. 401).

NOTE: If necessary, use a washer under the clamp nut to get the torque above.

CAUTION: MAKE SURE THE COOLING AIR DUCT IS ALIGNED CORRECTLY AND IS NOT DAMAGED. THE COOLING AIR DUCT MUST BE CORRECTLY INSTALLED OR THE OIL TEMPERATURE CAN NOT BE SUFFICIENTLY DECREASED.

(20) Put the oil cooling air duct assembly (1, 2, 3, 4) in position (Fig. 401)

(a) Make sure the clamps (1) are a minimum of 0.06 inches in from the edge of the flex duct (2).

MECH | INSP

(b) Tighten the clamps (1) to 10-20 inch-pounds (1.13-2.26 newton meters).

CAUTION: DO NOT TWIST THE FUEL TUBE OR YOU CAN CAUSE A BLOCKAGE AND THE APU CANNOT GET ENOUGH FUEL.

(21) Remove the caps from the fuel hose and the fuel control unit (Fig. 401).

(22) Install the fuel tube (Fig. 401).

(23) Connect the generator control to the APU (Fig. 401).

(a) Install a lockwire on the generator control.

(24) Remove the caps from the electrical connectors and receptacles.

(25) Connect the APU harness and starter motor cables at the firewall (Fig. 401).

NOTE: Connect the starter motor cables at the starter motor if necessary.

(26) Install the harness fasteners on the supports and on the firewall.

(27) If the generator is installed on the APU, connect the electrical connections.

(a) Remove the terminal block cover (17) from the generator.

(b) Make sure that the terminals on the APU generator are properly assembled. Square washers go under the through lead straps.

CAUTION: ENSURE MATCHING OF CONDUCTORS AND TERMINALS. INCORRECT INSTALLATION WILL RESULT IN CIRCUIT MALFUNCTION AND/OR DAMAGED EQUIPMENT.

CAUTION: INSTALL ROUND WASHERS BETWEEN TERMINAL NUT AND PHASE LEAD. DO NOT INSTALL ANY WASHERS BENEATH PHASE LEADS. TO DO SO WILL RESULT IN LOCALIZED RESISTANCE HEATING WHICH COULD CAUSE BURNING OF THE TERMINAL BLOCK.

(c) Install the washers (14) and the terminal nuts (18) or the lock nuts as applicable.

(d) Tighten the terminal nuts to 144-168 inch-pounds (16.2-18.9 newton meters).

CAUTION: DO NOT APPLY RTV MATERIAL TO GENERATOR TERMINALS. USE OF RTV MATERIAL WILL MAKE TERMINAL BLOCK COVER DIFFICULT TO REMOVE.

1) Install the terminal block cover (17). Tighten the screws (16) to 20-22 inch-pounds (2.25-2.48 newton meters).

(28) Put the exhaust duct and the V-band clamp in position on the APU (Fig. 402).

(a) Tighten the V-band clamp to 70-90 inch-pounds (7.91-10.17 newton meters) (Fig. 402).

(29) Remove the exhaust duct saddle (Fig. 402).

(30) Make sure the protective cover on the oil cooler vent is removed.

NOTE: The oil cooler vent is downstream of the APU oil cooler.

(31) Do the APU - Servicing procedure if it is necessary (AMM 12-13-04/301).

(32) Make sure the drain tubes are in the center of the drain mast assembly.

(33) If necessary, install the generator (AMM 24-21-01/401).

(34) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(b) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(35) Remove the DO-NOT-OPERATE tag from the APU control switch on the overhead panel P5.

(36) Erase the BITE memory (AMM 49-61-05/201).

(37) Use the APU Operation procedure to start the APU (AMM 49-11-00/201).

(38) Make sure the APU operates correctly.

(a) Examine the APU for leakage.

(39) Use the APU Operation procedure to do the APU shutdown (AMM 49-11-00/201).

(40) Do the APU Control Unit BITE procedure (AMM 49-61-05/201).

(41) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Manually unlock the two hold-open struts from the two APU access doors.

NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.

4. APU Removal (Hydraulic Jack Procedure) (Fig. 405, Fig. 406, Fig. 407, Fig. 408, Fig. 409)

A. References

(1) AMM 21-00-21/201, Air Conditioning System Oil Smoke/Fume Contamination (Removal)

(2) AMM 36-11-01/701, Pneumatic Duct

MECH | INSP

B. Special Tools and Equipment

(1) APU Cradle Jack Equip - A49001-73 or A49001-83

(2) APU Cradle Ballast - A49001-3 or A49001-17

(3) APU Transportation Dolly - A49003-1 or A49003-12

(4) APU Support Equip (includes support retainers, thread protectors, and exhaust duct support saddle) - A49004-1

C. Standard Tools and Equipment

(1) Container - 1.5 U.S. Gallon (5.7 Liter) capacity, for fuel

D. Prepare for the APU Removal

(1) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

MECH | INSP

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

E. APU Removal

(1) Remove the electrical connections from the generator (Fig. 405).

(a) Remove the terminal block cover (17) from the generator.

(b) Remove the terminal nuts (18) and the washers (14), or the lock nut as applicable.

(c) Remove the four power leads and identify for installation.

(d) Install the terminal nuts (18) and the washers (14), or the lock nut on the terminal studs.

(e) Install the terminal block cover (17) with the washers (15) and the screws (16).

(2) Disconnect the APU harness, generator cables and starter motor cables from the supports on the APU (Fig. 405).

(3) Disconnect the APU harness and starter motor cables at the firewall.

NOTE: The starter motor cables can be disconnected at the starter motor or at the firewall.

(4) Remove the nuts (9) and washers (8) to disconnect the bonding jumper (7) from the fuselage.

(5) Disconnect the generator control connector from the generator.

(6) Remove the clamps (1), flex ducts (2, 4), and discharge duct (3).

(7) Loosen the clamps (6) on the air supply duct (5) at the left side of the APU.

MECH | INSP

(a) Disengage the clamps (6) from the flange on the air supply duct (5).

(b) Remove the air supply duct (5).

(8) Put caps on all of the openings of the air supply and oil-cooler-discharge ducts.

(9) Install the exhaust duct support saddle and tighten the buckles (Fig. 406).

(10) Loosen the V-band clamp and slide the exhaust duct aft (Fig. 406).

(11) Put the container below the fuel control unit.

(12) Disconnect the fuel hose at the fuel control unit (Fig. 405).

(a) Let the fuel drain from the fuel hose.

(b) Put caps on the openings of the fuel hose and the fuel control unit.

(13) Install the Hydraulic Jack (Fig. 409):

(a) Put the hydraulic jack on the height adjustable stand.

(b) Use a forklift to set the APU cradle assembly on the hydraulic jack.

(c) Attach the APU cradle to the hydraulic jack with four bolts and nuts.

(d) Turn the crank-down grips for the hydraulic jack stabilizers clockwise until the stabilizers touch the height adjustable stand. The hydraulic jack is now stable on the height adjustable stand.

(e) Disconnect the yoke from the cradle.

(f) Attach the yoke to the forward mounts on the APU.

(g) Make sure the cradle correctly engages the saddle.

(h) Install the safety pins.

(i) Connect the rear part of the cradle to the lugs on the sides of the APU.

MECH | INSP

(j) Raise the APU a sufficient amount to take the weight off of the APU mounts (Fig. 407).

NOTE: The weight of an APU with oil in it and the support equipment is approximately 700 pounds (320 kg).

(14) Remove the cone bolt nuts (2) and washers (1) from the forward and aft mounts.

NOTE: Use an open end wrench on the shaft flats between the mount bracket and the shockmount. This holds the shaft while you remove the cone bolt nuts.

(15) Lower the APU (10) until the mount brackets are free of the cone bolts.

(16) Move the aft shockmounts on the right side outboard and install the retainer on the supports (Fig. 408).

(a) With the APU secured to the APU cradle, lower the height adjustable stand. Use a forklift to remove the APU from the hydraulic jack and place the APU on the APU dolly.

(17) Visually examine the air supply duct (5) for signs of oil and other contamination.

(a) If you find signs of oil and other contamination, then do these tasks:

1) Clean the air supply duct (5). To clean it, do this task: Cleaning the Bare Titanium Ducts (AMM 36-11-01/701).

2) Remove the oil contamination from the air conditioning and pneumatic systems. To remove it, do this task: Removal of Oil Contamination from the Air Conditioning and Pneumatic Systems (AMM 21-00-21/201).

5. APU Installation (Hydraulic Jack Procedure) (Fig. 405, Fig. 406, Fig. 407, Fig. 408, Fig. 409)

NOTE: If you install a new APU, install the bonding jumper (7) and the starter motor cables (12) with the APU on the ground. Also, do the APU - Servicing procedure (AMM 12-13-04/301) before you install the APU.

A. Equipment

(1) APU Cradle Jack Equip - A49001-73 or A49001-83

(2) APU Cradle Ballast - A49001-3 or A49001-17

(3) APU Transportation Dolly - A49003-1 or A49003-12

(4) APU Support Equip (includes support retainers, thread protectors, and exhaust duct support saddle) - A49004-1

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
405	10	Auxiliary Power Unit	49-11-00	01	80, 81 or 82

C. References

(1) AMM 12-13-04/301, Servicing (Oil Fill)

(2) AMM 24-21-01/401, APU Generator

(3) AMM 49-11-00/201, Auxiliary Power Unit

(4) AMM 49-13-00/601, APU Mounts

(5) AMM 49-61-05/201, APU Control Unit

(6) AMM 49-94-04/401, Oil Quantity Transmitter

D. APU Installation

(1) Before you install the APU, visually examine both the airplane and the APU mount assemblies for cracks, wear, or damage (AMM 49-13-00/601).

(2) If it is necessary, remove the covers from the APU inlet plenum and from the APU exhaust duct.

MECH | INSP

(3) Examine the APU inlet plenum and air inlet ducts for foreign objects, chips and cracks.

(4) Do a check for the oil quantity transmitter on the new APU (AMM 49-94-04/401):

NOTE: The part number for the oil quantity transmitter is 8TJ99GGE1 (Boeing part number S351N101-1).

(a) If the oil quantity transmitter is not installed, then do these steps to replace with an oil quantity transmitter:

NOTE: The low oil level switch can be installed on the new APU. It is necessary to replace it with an oil quantity transmitter.

1) Remove the low oil level switch from the new APU.

2) Do this task: Oil Quantity Transmitter Installation (AMM 49-94-04/401).

WARNING: INSTALL THE BALLAST ON THE CRADLE IF THE GENERATOR IS REMOVED. WITHOUT THE GENERATOR, THE APU IS NOT BALANCED AND CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONS.

(5) Install the ballast on the cradle if the generator is removed.

(6) Install the Hydraulic Jack (Fig. 409):

(a) Put the hydraulic jack on the height adjustable stand.

(b) Use a forklift to set the APU and the APU cradle assembly on the hydraulic jack.

(c) Attach the APU and the APU cradle to the hydraulic jack with four bolts and nuts.

(d) Turn the crank-down grips for the hydraulic jack stabilizers clockwise until the stabilizers touch the height adjustable stand. The hydraulic jack is now stable on the height adjustable stand.

(e) Disconnect the yoke from the cradle.

(f) Attach the yoke to the forward mounts on the APU.

(g) Make sure the cradle correctly engages the saddle.

(h) Install the safety pins.

(i) Connect the rear part of the cradle to the lugs on the sides of the APU.

(7) Lift the APU until the cone bolts are engaged.

(8) Remove the thread protectors from the cone bolts.

(9) Install new cone bolt washers (1) and nuts (2) or use washers and nuts that had a dye penetrant inspection (Fig. 407).

(a) Do the torque limit test for the three nuts (2):

1) Tighten the three nuts (2) to a run-on torque of not more than 100 inch-pounds (11.3 newton-meters) until you can see one to two full threads and the cone bolt chamfer extends below each nut.

NOTE: Use an open-end wrench on the shaft flats between the APU mounting bracket and the shockmount to hold the shaft.

2) Make sure the three washers (1) do not touch the bottom surface of the three APU mounting brackets.

3) Make sure the break-away torque necessary to turn the three nuts from this position is more than 14 inch-pounds (1.6 newton-meters).

4) Replace the nut(s) that do not meet the torque limits in the above steps.

(b) Tighten the nuts completely to 475-525 inch-pounds (53.68-59.33 newton meters).

(10) Remove the cradle from the APU (Fig. 407).

(a) Remove the lockpins from the mount brackets.

(b) Lower the cradle and the hydraulic jack away from the airplane.

MECH | INSP

(11) Attach the bonding jumper (7) to the fuselage with the washers (8) and nuts (9) (Fig. 405).

(12) Remove the dust caps from all of the air ducts.

(13) Install the air supply duct (5).

(a) Tighten the clamps (6) to 50-70 inch-pounds (5.65-7.91 newton meters).

NOTE: If necessary, use a washer under the clamp nut to get the torque above.

CAUTION: MAKE SURE THE COOLING AIR DUCT IS ALIGNED CORRECTLY AND IS NOT DAMAGED. THE COOLING AIR DUCT MUST BE CORRECTLY INSTALLED OR THE OIL TEMPERATURE CAN NOT BE SUFFICIENTLY DECREASED.

(14) Put the oil cooling air duct assembly (1, 2, 3, 4) in position.

(a) Make sure the clamps (1) are a minimum of 0.06 inches in from the edge of the flex duct (2).

(b) Tighten the clamps (1) to 10-20 inch-pounds (1.13-2.26 newton meters).

CAUTION: DO NOT TWIST THE FUEL TUBE OR YOU CAN CAUSE A BLOCKAGE AND THE APU CANNOT GET ENOUGH FUEL.

(15) Remove the caps from the fuel hose and the fuel control unit.

(16) Install the fuel hose.

(17) Connect the generator control to the APU:

(a) Install a lockwire on the generator control.

(18) Remove the caps from the electrical connectors and receptacles.

MECH | INSP

(19) Connect the APU harness and starter motor cables at the firewall.

NOTE: Connect the starter motor cables at the starter motor if necessary.

(20) Install the harness fasteners on the supports and on the firewall.

(21) If the generator is installed on the APU, connect the electrical connections.

(a) Remove the terminal block cover (1) from the generator.

(b) Make sure that the terminals on the APU generator are properly assembled. Square washers go under the through lead straps.

CAUTION: ENSURE MATCHING OF CONDUCTORS AND TERMINALS. INCORRECT INSTALLATION WILL RESULT IN CIRCUIT MALFUNCTION AND/OR DAMAGED EQUIPMENT.

CAUTION: INSTALL ROUND WASHERS BETWEEN TERMINAL NUT AND PHASE LEAD. DO NOT INSTALL ANY WASHERS BENEATH PHASE LEADS. TO DO SO WILL RESULT IN LOCALIZED RESISTANCE HEATING WHICH COULD CAUSE BURNING OF THE TERMINAL BLOCK.

(c) Install the washers (14) and the terminal nuts (18) or the lock nut as applicable.

(d) Tighten the terminal nuts to 144-168 inch-pounds (16.2-18.9 newton meters).

CAUTION: DO NOT APPLY RTV MATERIAL TO GENERATOR TERMINALS. USE OF RTV MATERIAL WILL MAKE TERMINAL BLOCK COVER DIFFICULT TO REMOVE.

(22) Put the exhaust duct and the V-band clamp in position on the APU (Fig. 406).

(a) Tighten the V-band clamp to 70-90 inch-pounds (7.91-10.17 newton meters) (Fig. 406).

(23) Remove the exhaust duct saddle.

MECH	INSP

(24) Make sure the protective cover on the oil cooler vent is removed.

NOTE: The oil cooler vent is downstream of the APU oil cooler.

(25) Do the APU - Servicing procedure if it is necessary (AMM 12-13-04/301).

(26) Make sure the drain tubes are in the center of the drain mast assembly.

(27) If necessary, install the generator (AMM 24-21-01/401).

(28) Remove the DO-NOT-CLOSE tags and close these circuit breaker:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

(b) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(29) Remove the DO-NOT-OPERATE tag from the APU control switch on the overhead panel P5.

(30) Erase the BITE memory (AMM 49-61-05/201).

(31) Use the APU Operation procedure to start the APU (AMM 49-11-00/201).

(32) Make sure the APU operates correctly.

(a) Examine the APU for leakage.

(33) Use the APU Operation procedure to do the APU shutdown (AMM 49-11-00/201).

(34) Do the APU Control Unit BITE procedure (AMM 49-61-05/201).

(35) Close the left APU access door, 315AL, and right APU access door, 316AR:

MECH	INSP

(a) Manually unlock the two hold-open struts from the two APU access doors.

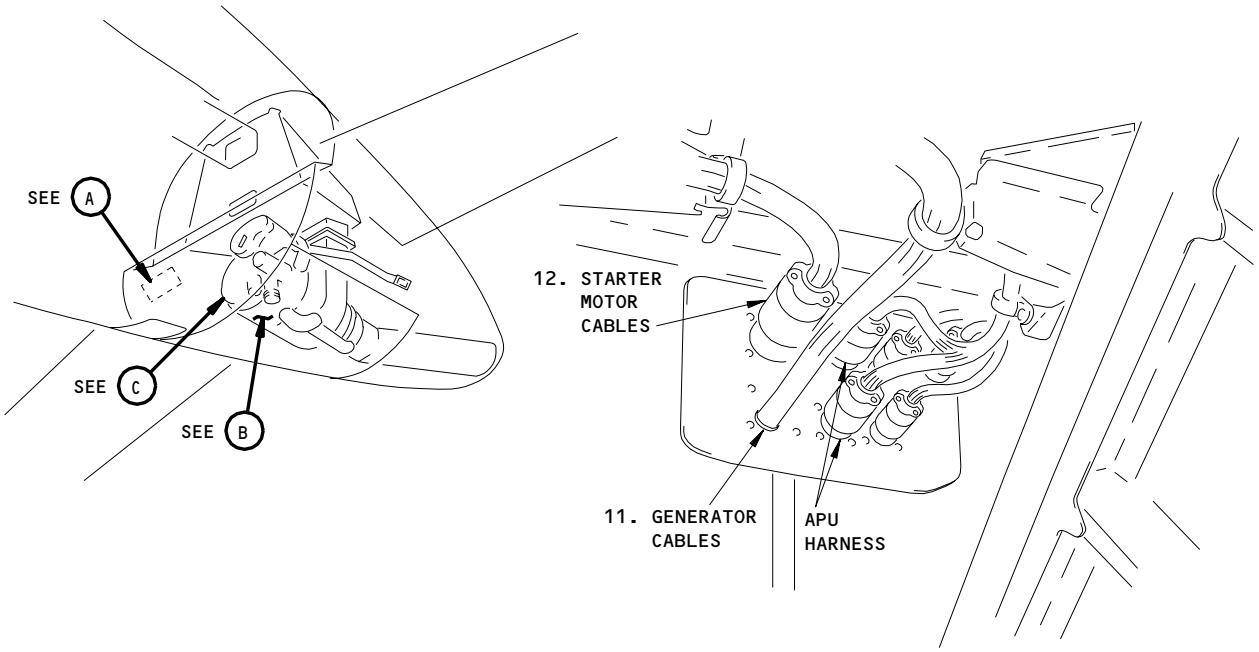
NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

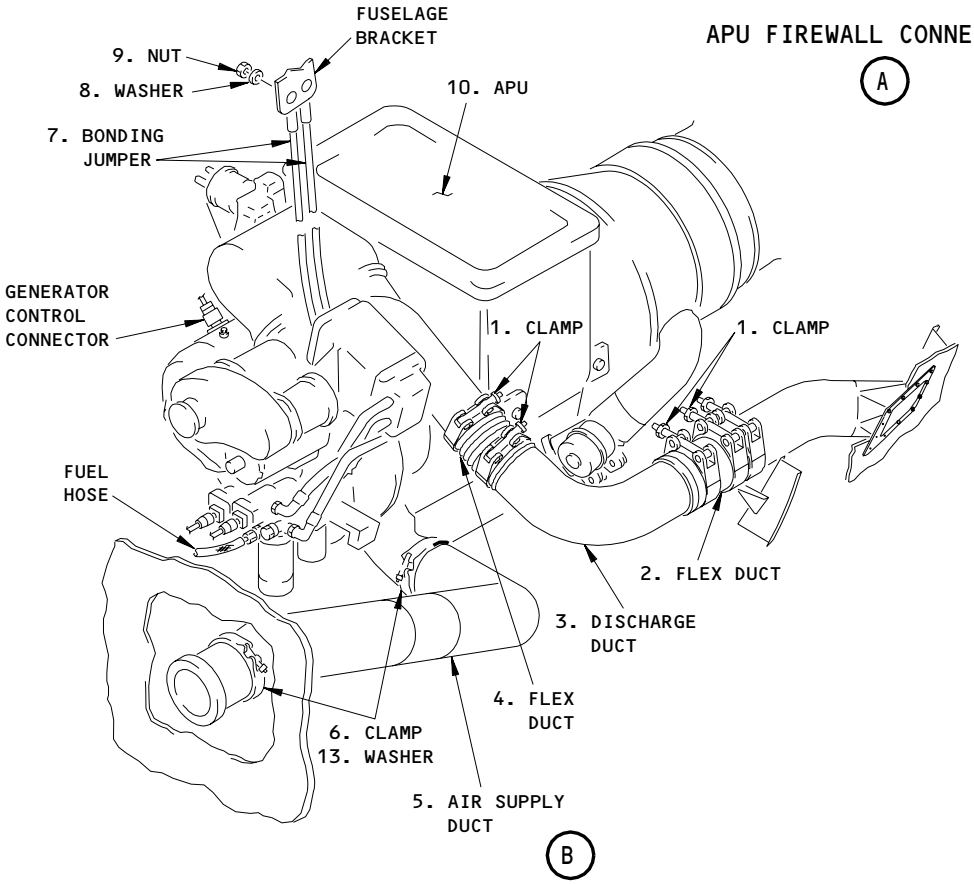
(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.

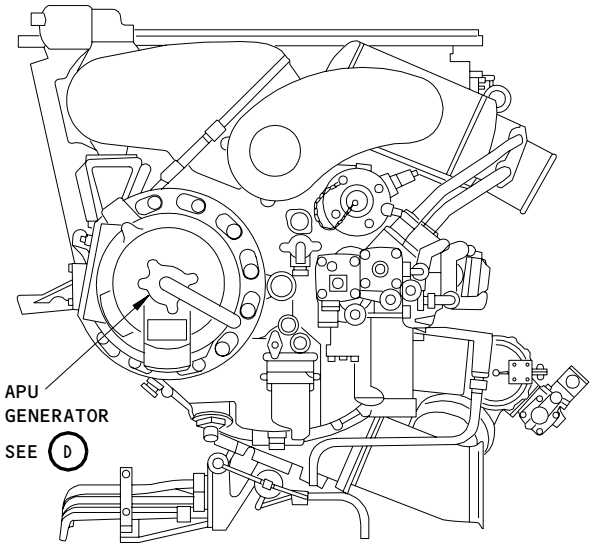


APU FIREWALL CONNECTIONS
A



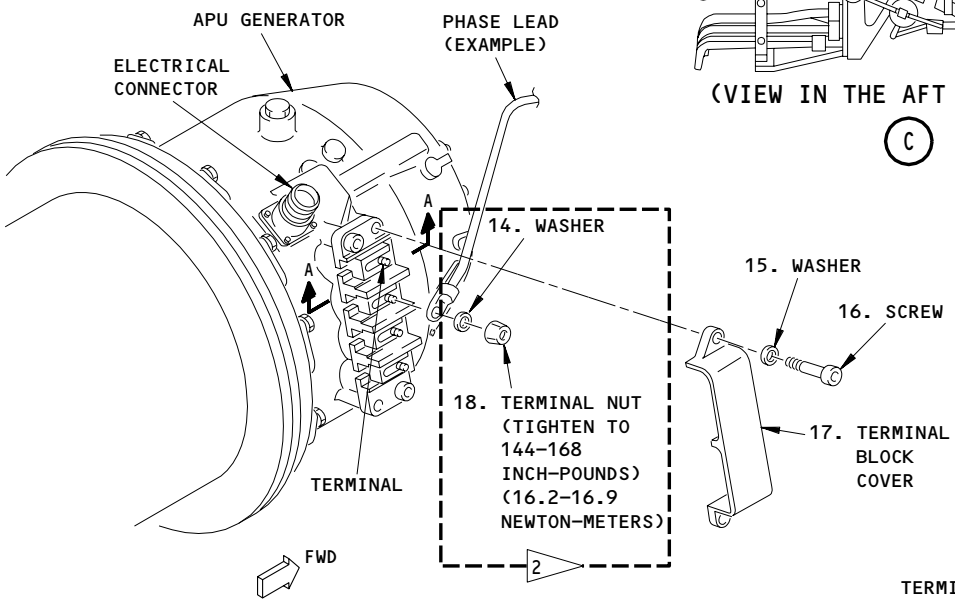
B

APU System Connections
Figure 401 (Sheet 1)



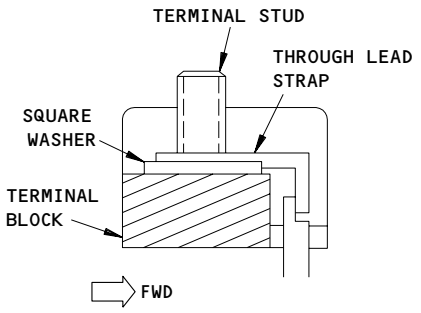
(VIEW IN THE AFT DIRECTION)

C



APU GENERATOR

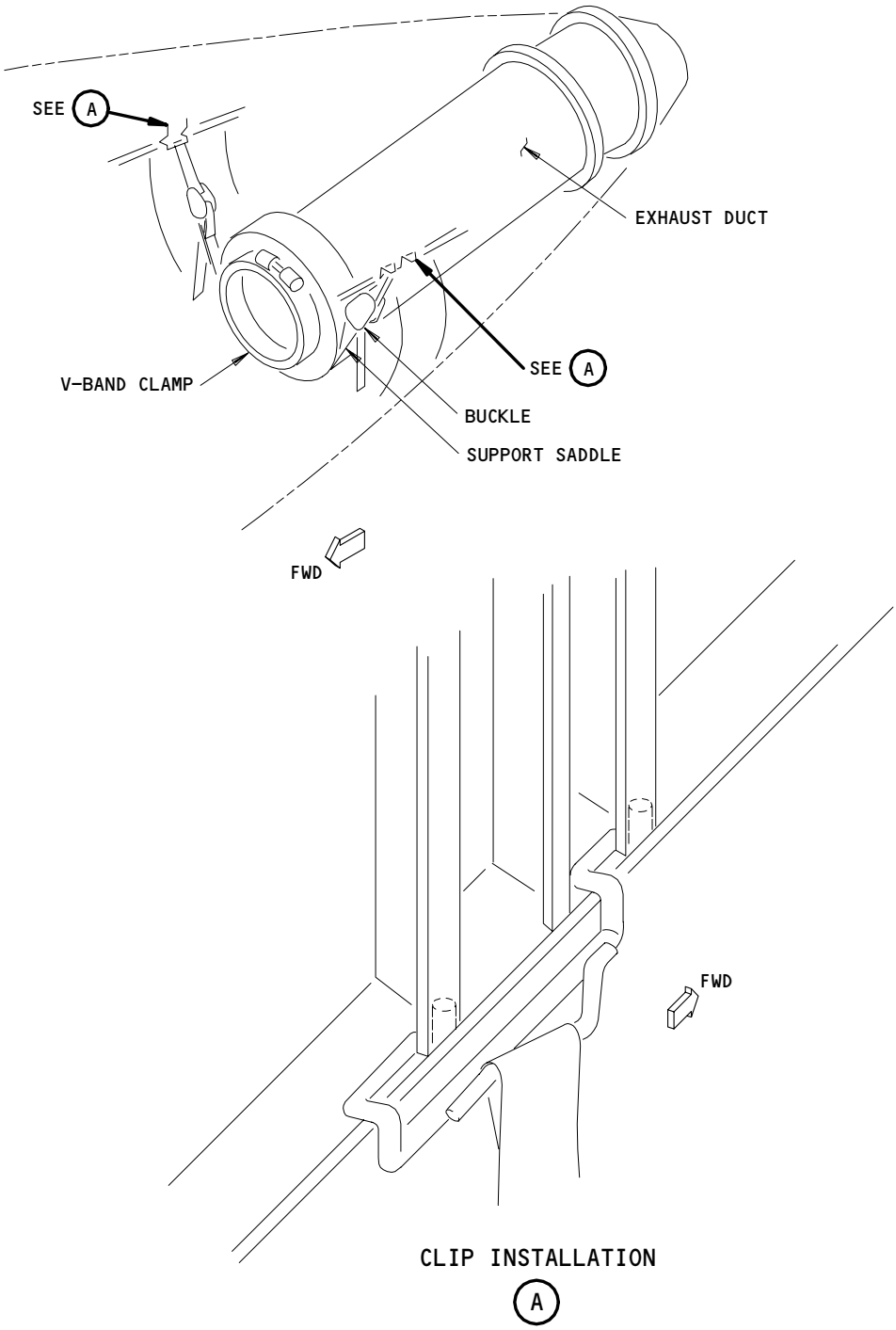
D



APU TERMINAL BLOCK CONFIGURATION
(EXAMPLE)
A-A

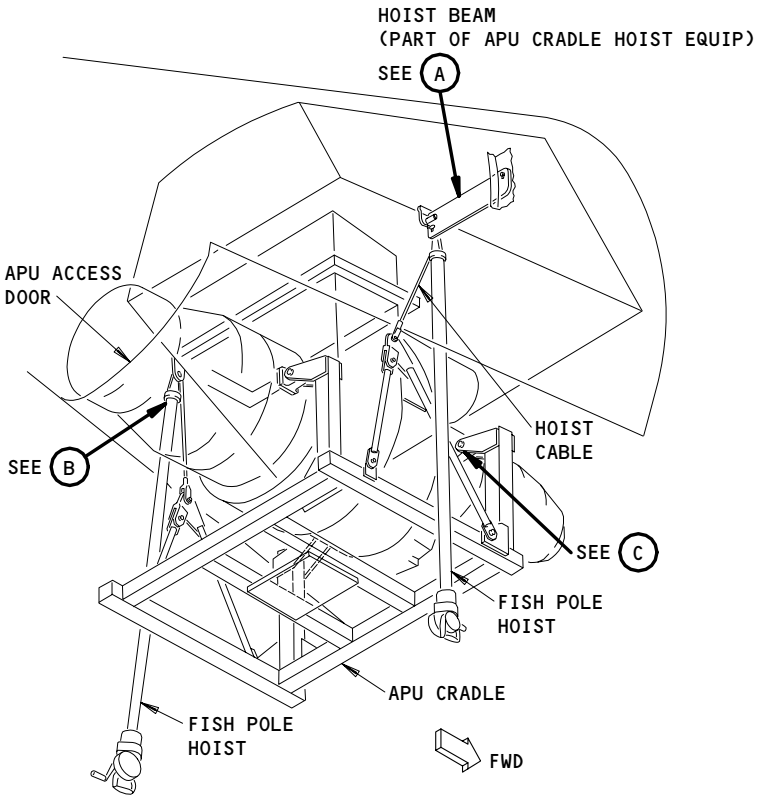
2 OPTIONAL INSTALLATION NUT, SELF-LOCKING, CAPTIVE WASHER PART NO. NAS1726-6D

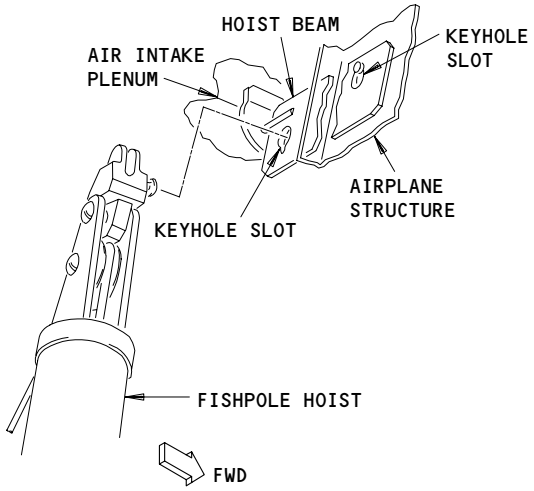
APU System Connections
Figure 401 (Sheet 2)



CLIP INSTALLATION
A

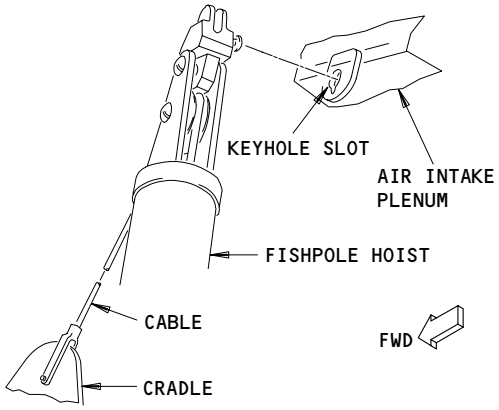
APU Exhaust Duct Support Saddle - Installation
Figure 402

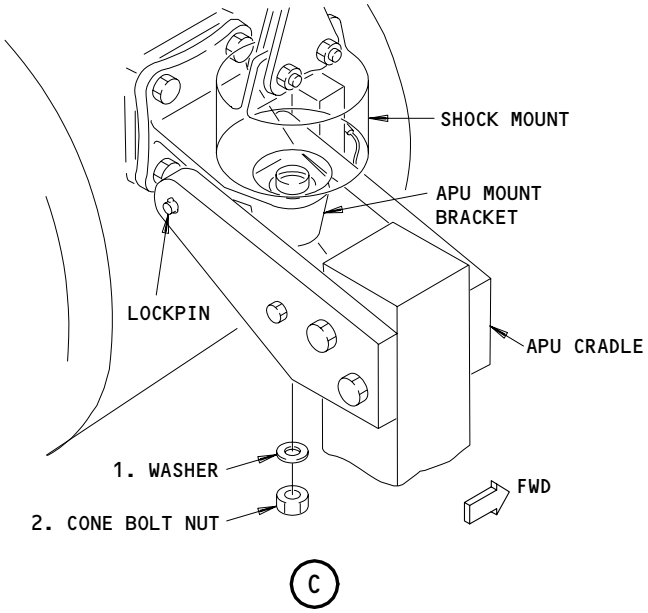




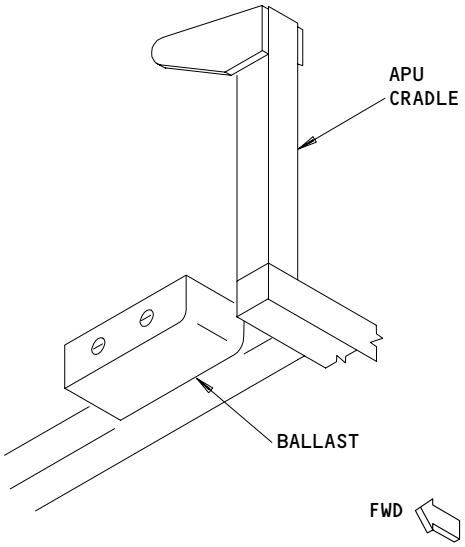
A

Fishpole Hoist and Cradle Installation
Figure 403 (Sheet 1)

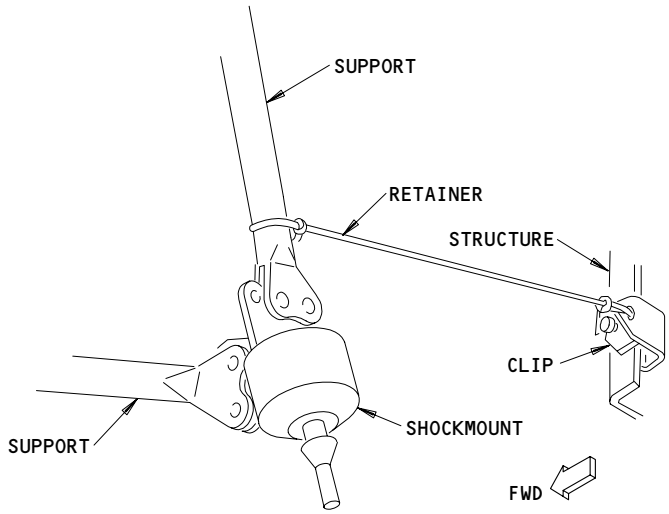




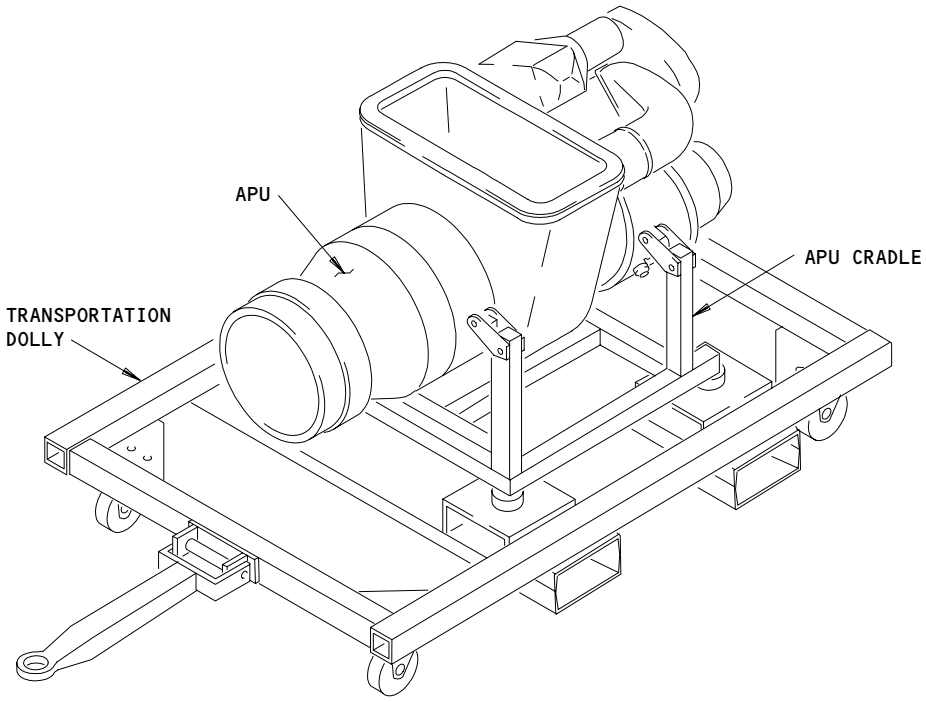
Fishpole Hoist and Cradle Installation
Figure 403 (Sheet 2)



APU CRADLE BALLAST

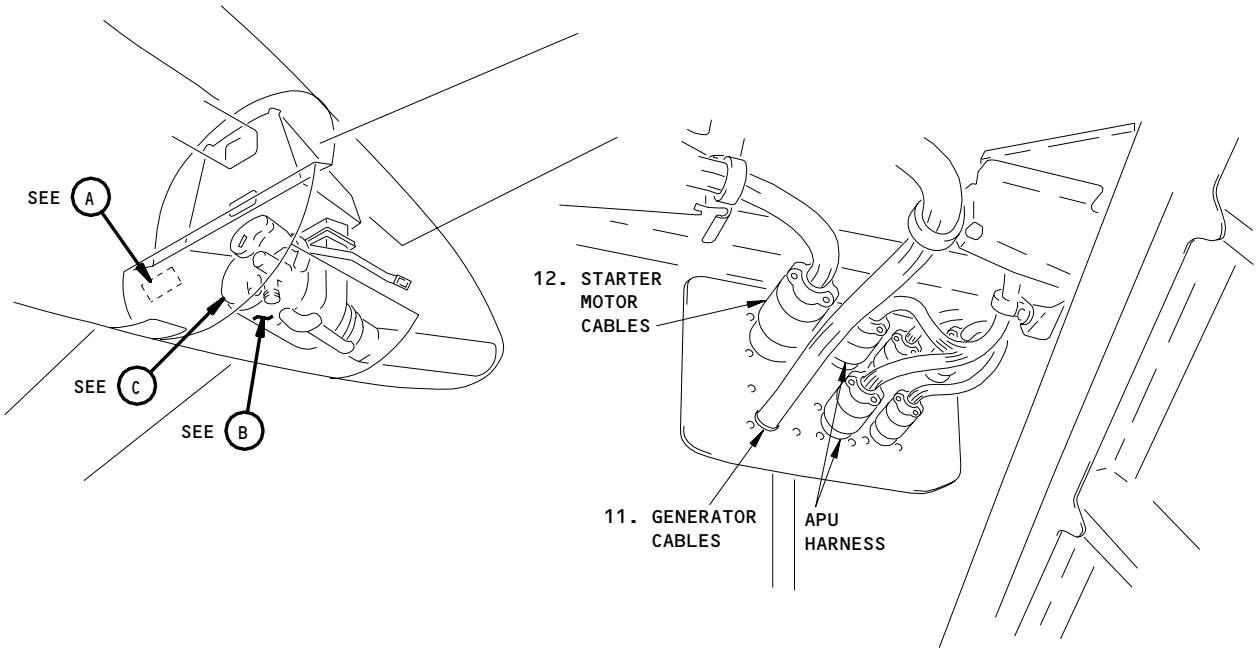


SUPPORT RETAINER



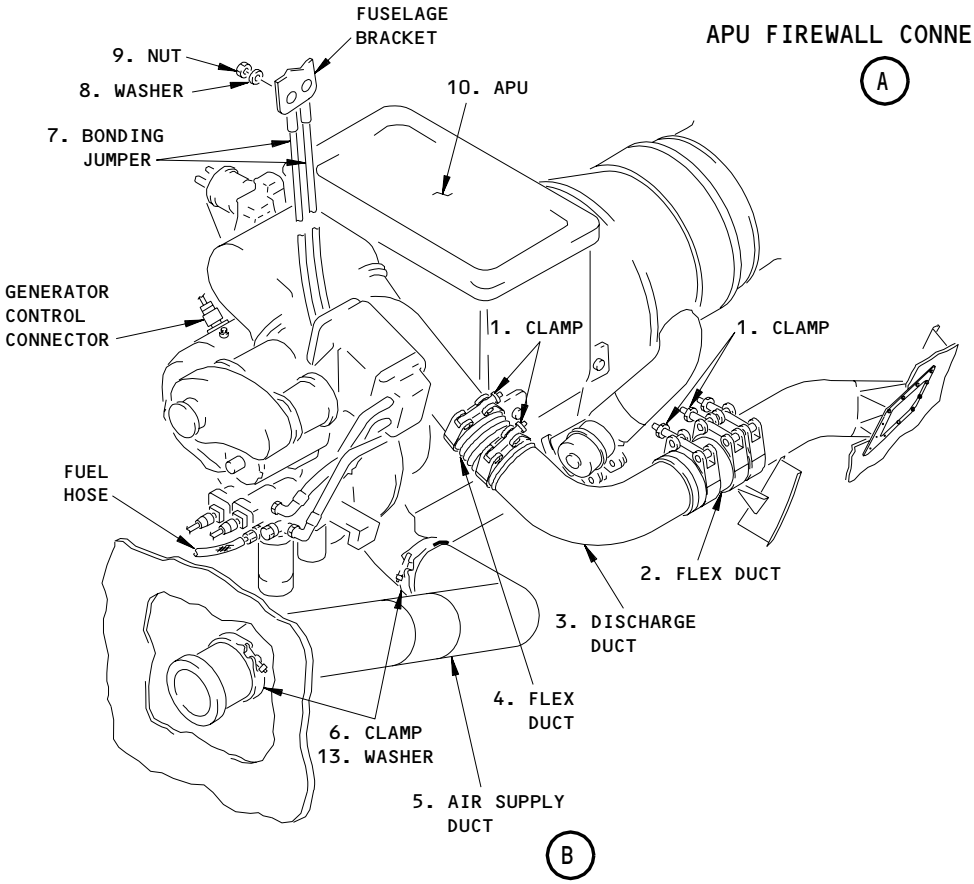
APU TRANSPORTATION DOLLY

APU Installation
Figure 404



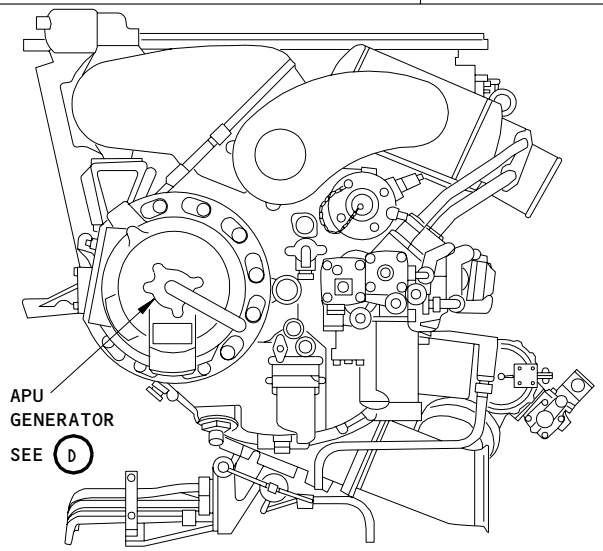
APU FIREWALL CONNECTIONS

A



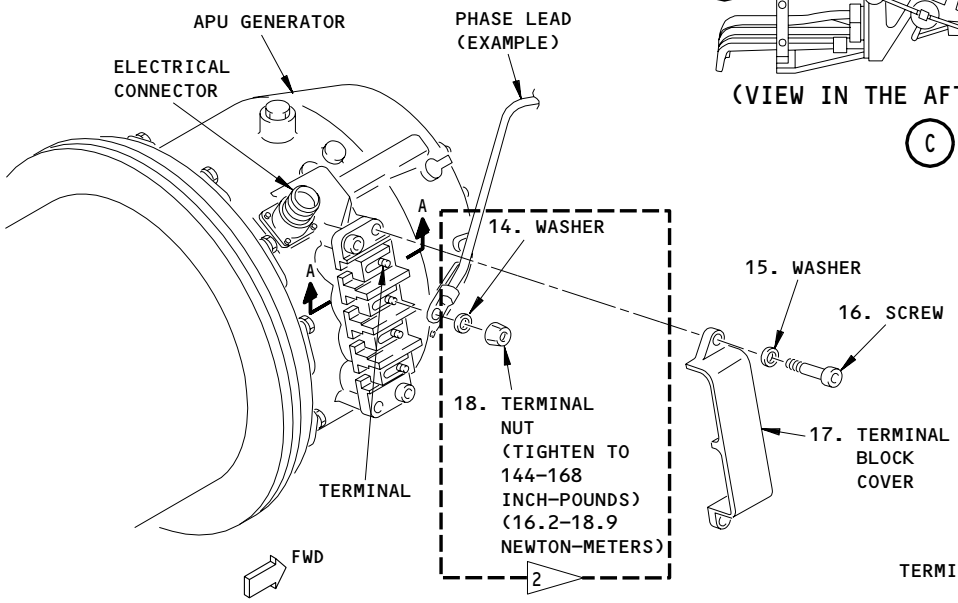
B

APU System Connections
Figure 405 (Sheet 1)



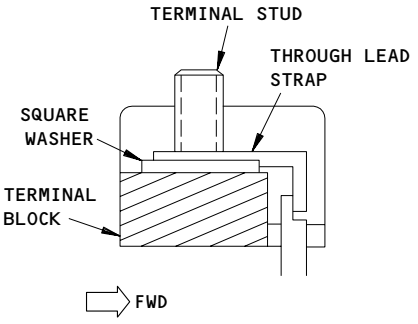
(VIEW IN THE AFT DIRECTION)

C



APU GENERATOR

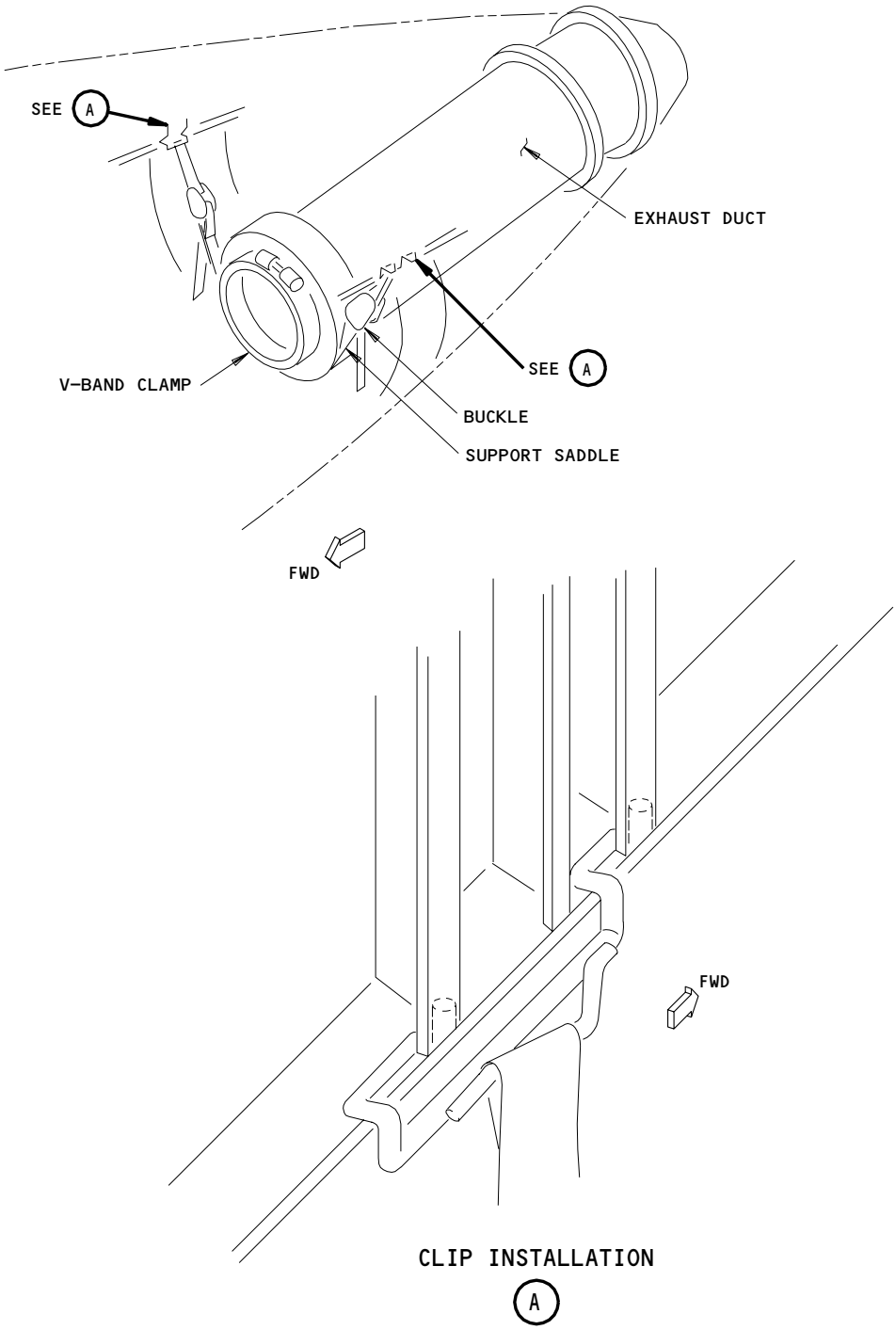
D



APU TERMINAL BLOCK CONFIGURATION
(EXAMPLE)
A-A

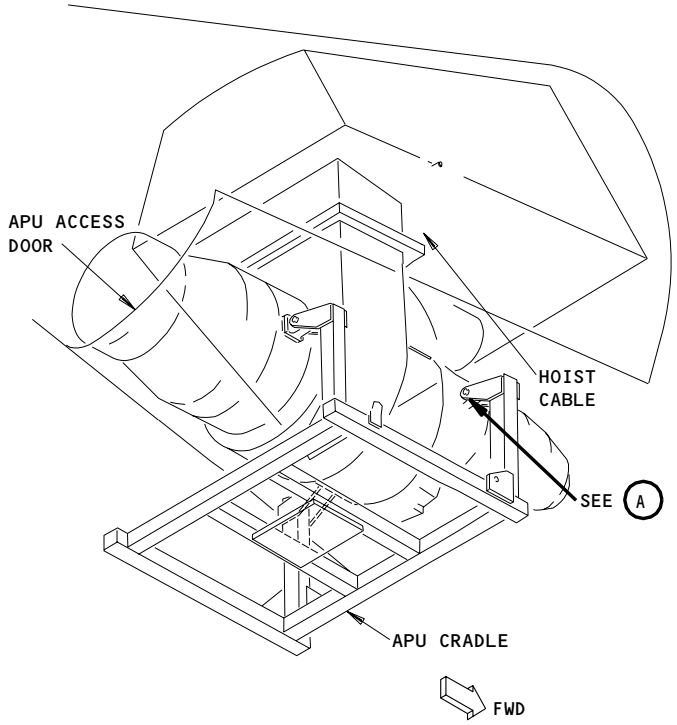
2 OPTIONAL INSTALLATION NUT, SELF-LOCKING, CAPTIVE WASHER PART NO. NAS1726-6D

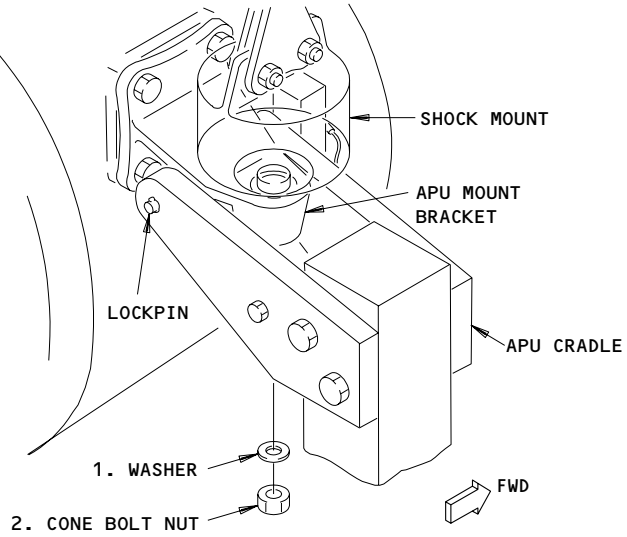
APU System Connections
Figure 405 (Sheet 2)



CLIP INSTALLATION
A

APU Exhaust Duct Support Saddle - Installation
Figure 406

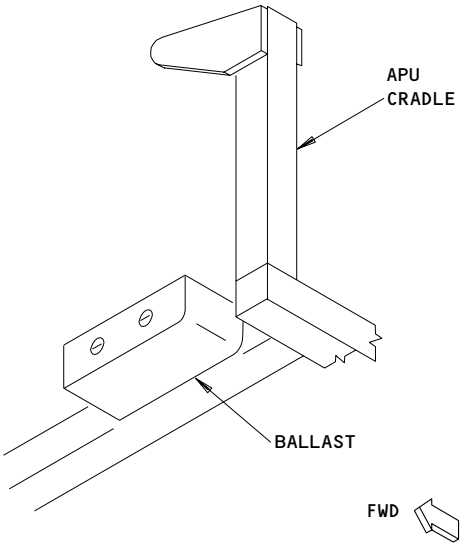




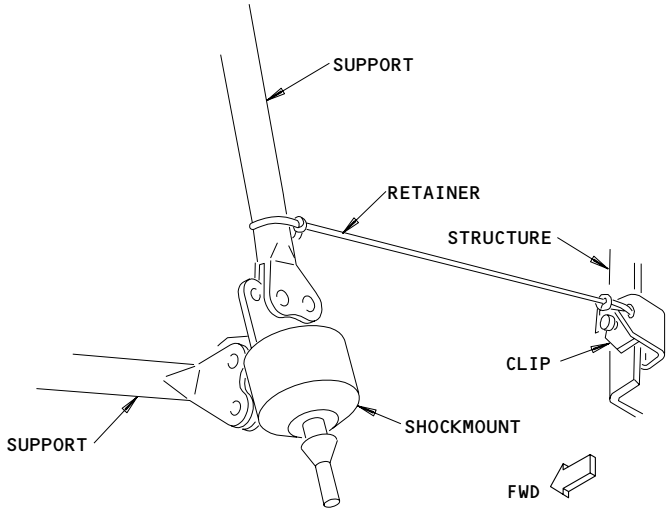
(EXAMPLE)

A

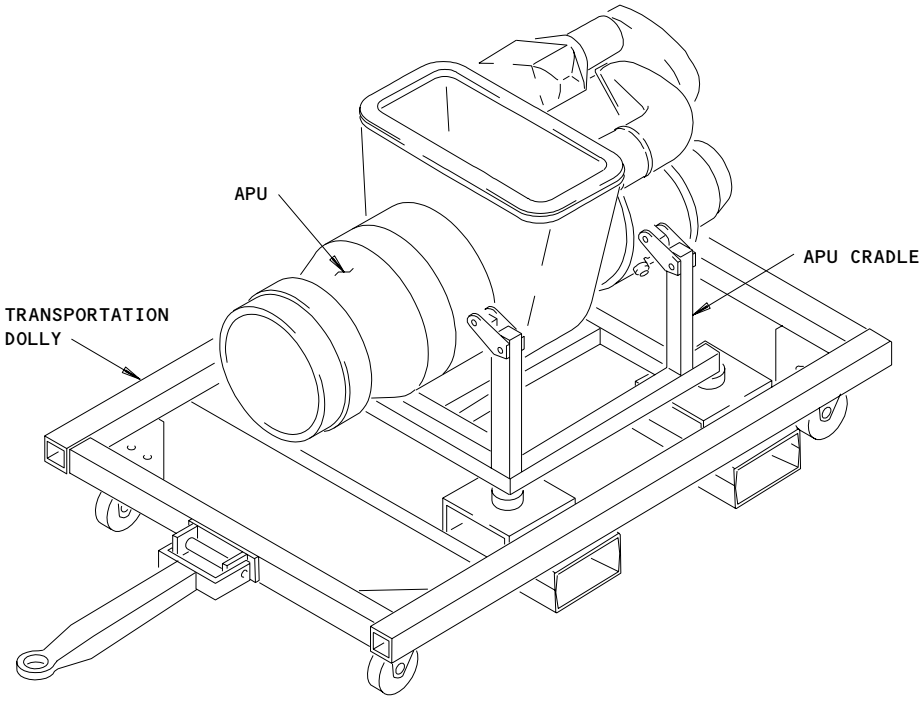
Cradle Installation
Figure 407



APU CRADLE BALLAST

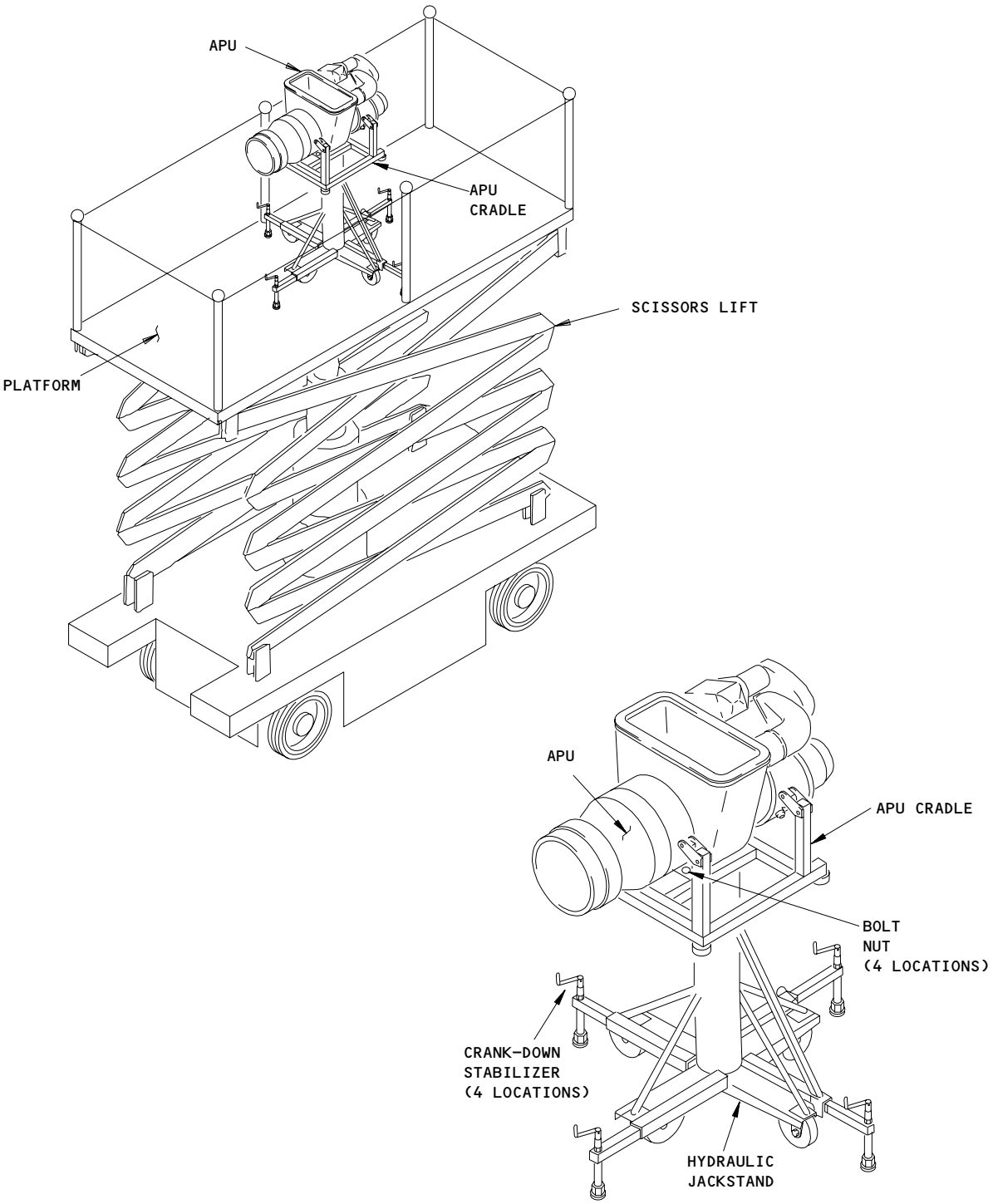


SUPPORT RETAINER



APU TRANSPORTATION DOLLY

APU Installation
Figure 408



Auxiliary Power Unit Installation - Jackstand Method
Figure 409

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-R02
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AIRPL	STABLIZR BX				003	AUG 22/05

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU AIR INTAKE DOOR ACTUATOR		NOTE	ALL

ZONES	ACCESS PANELS
314	312AR

MECH	INSP	MPD ITEM NUMBER

REPLACE THE APU AIR INTAKE DOOR ACTUATOR. 49-15-06-4A

AIRPLANE NOTE: APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER. 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.

AIR INTAKE DOOR ACTUATOR - REMOVAL/INSTALLATION

1. Air Intake Door Actuator Removal (Fig. 401, Fig. 401A, Fig. 402)

A. References

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

(2) SSM 49-00-04

(3) WDM 49-15-11

B. Procedure

(1) Do this task: Remove the Hydraulic Power (AMM 29-11-00/201).

(2) Make sure the L, C and R FLT CONTROL SHUTOFF TAIL switches on the P61 maintenance panel are OFF and attach DO-NOT-OPERATE tags.

(3) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag.

(4) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

2) 11H17, L-FLT CONT SHUTOFF TAIL

3) 11H18, CTR-FLT CONT SHUTOFF TAIL

4) 11H27, R-FLT CONT SHUTOFF TAIL

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

3) 49C4, APU INLET DOOR ACTR

WARNING: THE CONTROLS ACCESS DOOR MUST NOT BE USED TO HOLD YOUR WEIGHT TO GET ACCESS TO THE STABILIZER TORSION BOX COMPARTMENT. YOUR WEIGHT CAN RELEASE THE SPRING-LOADED LATCHES. INJURY TO PERSONNEL CAN OCCUR.

(5) Open the service access door, 312AR.

(6) If it is necessary, install a service platform over the service access door, 312AR.

(7) AIRPLANES WITH THE TWO ACCESS PANELS ON THE AIR INTAKE DOOR; Do these steps to disconnect the air intake door:

(a) Remove the captive screws (2) and the access panels (1) from the external surface of the air intake door.

(b) Remove the end bolt (5), the nut (4), the washer (3), and the bushing (6) from the actuator rod.

(c) Lift the door with your hand to disconnect the actuator from the air intake door.

(8) AIRPLANES WITHOUT THE TWO ACCESS PANELS ON THE AIR INTAKE DOOR; Do these steps to disconnect the air intake door:

(a) Remove the four bolts (1) from the external surface of the air intake door.

(b) Lift the air intake door with your hand to get access to the actuator rod.

(c) Remove the end bolt (7), the washer (5), the nut (6), and the bushing (8) from the actuator rod.

(d) Remove the fitting assembly (4) from the actuator rod and keep it with the air intake door.

(9) Do these steps to remove the actuator housing from the air intake port:

(a) Disconnect the electrical connector.

1) Put caps on the electrical connectors.

(b) Remove the bolts (3), the washers (4), and the nuts (5) that attach the ground straps (6) to the airplane structure.

(c) Remove the V-band clamp (1) from the actuator housing.

(d) Remove the actuator housing from the air intake port.

(10) Do these steps to remove the actuator from the actuator housing:

CAUTION: DO NOT PULL ON THE ELECTRICAL WIRES BETWEEN THE ACTUATOR AND THE HOUSING. IF YOU PULL ON THE WIRE, YOU CAN CAUSE DAMAGE TO THE WIRE, THE RECEPTACLE, OR THE ACTUATOR.

(a) Remove the screws (25), the nuts (27), and the washers (26) from the electrical receptacle on the actuator housing.

(b) Remove the nut (24), the washers (17), and the bolt (18) that attach the actuator (2) to the housing.

(c) Remove the bolts (8), the washers (9), and the nuts (10) that attach the ground straps (7) to the actuator.

(d) Remove the actuator (2) from the actuator housing.

(11) If it is necessary, remove the clevis (19) from the actuator housing.

NOTE: Do not move the clevis from its position unless it is necessary to replace the actuator housing.

(a) Remove the small locknut (21), the large locknut (20), and the washer (22) from the end of the clevis (19).

2. Air Intake Door Actuator Installation (Fig. 401, Fig. 401A, Fig. 402)

A. References

(1) SWPM 20-20-00, Electrical Bonding

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

(3) AMM 49-15-06/501, APU Air Intake Door Actuator

(4) SSM 49-00-04

(5) WDM 49-15-11

B. Equipment

(1) Ohmmeter (or alternative tool)

(a) C15292 Ohmmeter - Electrical Bonding (also called T477W) (recommended) Avtron Mfg. Inc. 10409 Meech Ave., Cleveland, OH 44105-4166

(b) Model 1010-A Micro-Ohmmeter - Autoranging/Autotest, 10 Micro-ohms to 200 Ohms, Accuracy: 0.05% (alternative) Barberree Custom Design 1401 Laurier House, 1600 Beach Ave., Vancouver, BC Canada V6G 1Y6, DC

C. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
402	2	Actuator Assembly (Air Intake Door Actuator)	49-15-05	01 02	280 or 400

MECH | INSP

D. Procedure

(1) If the clevis (19) was removed from the housing, do these steps to install the clevis:

(a) Install the adjustment nut (23) on the clevis (19) and put them in the housing.

(b) Install the washer (22), the large locknut (20), and the small locknut (21) to attach the clevis to the housing.

(2) Do these steps to install the actuator in the actuator housing:

(a) Connect the ground straps (7) to the actuator with the bolts (8), the washers (9), and the nuts (10).

(b) Connect the actuator to the clevis (19) with the bolt (18), the washers (17), and the nut (24).

(c) Connect the ground straps (6 and 7) to the side of the actuator housing with the bolts (8), the washers (9), and the nuts (10).

(d) Attach the electrical receptacle to the actuator housing with the screws (25), the nuts (27), and the washers (26).

(3) Attach the actuator and the actuator housing to the air intake port with the V-band clamp.

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

(4) AIRPLANES WITH THE TWO ACCESS PANELS ON THE AIR INTAKE DOOR;
Do these steps to connect the air intake door:

(a) Attach the actuator to the air intake door with the bolt (5), the bushing (6), the washer (3), and the nut (4).

(b) Attach the two access panels (1) to the air intake door with the captive screws (2).

(5) AIRPLANES WITHOUT THE TWO ACCESS PANELS ON THE AIR INTAKE DOOR;
Do these steps to connect the air intake door:

(a) Lift the air intake door with your hand to get access to the actuator rod.

MECH	INSP

(b) Attach the fitting assembly (4) to the actuator rod with the end bolt (7), the bushing (8), the washer (5), and the nut (6).

(c) Align the fitting assembly (4) with the air intake door and close the door.

(d) Install the bolts (1) on the external surface of the air intake door.

(e) Tighten the V-band clamp (1) to 160-180 inch-pounds (18.1-20.3 newton-meters).

(f) Connect the ground straps (6) to the airplane structure with the bolts (3), the washers (4), and the nuts (5).

(6) Make sure the bonding resistance between the housing and the airplane structure is not more than 0.001 ohm (SWPM 20-20-00).

(7) Connect the electrical connector to the actuator.

(a) Install a lockwire on the electrical connector.

(8) Make sure the air intake door is in the tolerance shown on Fig. 402 when the door is fully closed.

(9) If the air intake door is not in the tolerance limits, adjust the actuator (AMM 49-15-06/501).

(10) Do a check of the actuator operation:

CAUTION: MAKE SURE THE TRANSFER FLAG IS COMPLETELY IN THE MANUAL POSITION OR YOU CAN CAUSE DAMAGE TO THE ACTUATOR.

DO NOT TURN THE MANUAL/ELECTRICAL SELECTOR SHAFT OR THE MANUAL DRIVE IF THERE IS TOO MUCH TORQUE. IF YOU SUPPLY TOO MUCH TORQUE, YOU CAN CAUSE DAMAGE TO THE ACTUATOR. SEE THE OPERATION PLACARD ON THE ACTUATOR.

(a) Put a 1/4-inch square drive into the manual/electrical selector shaft.

1) Push the square drive in and turn the socket counterclockwise (about 100°) until you can see the manual drive socket.

NOTE: Do not apply more than 10 inch-pounds (1.12 newton-meters) of torque.

(b) Put a square drive into the manual drive socket and turn counterclockwise (to extend the actuator) until you feel a sudden increase of torque.

NOTE: Do not apply more than 65 inch-pounds (7.34 newton- meters) of torque.

(c) Turn the manual drive socket clockwise (to retract the actuator) until you feel a sudden increase of torque.

(d) Put the square drive into manual/electrical selector shaft.

1) Push the square drive in and turn the socket clockwise until you cannot see the socket any more.

(11) Make sure you remove all the tools and materials from the inlet plenum and the air intake door.

(12) If the service platform was installed over the service access door, 312AR, remove the service platform.

(13) Close the service access door, 312AR.

(14) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

3) 49C4, APU INLET DOOR ACT

(b) P11 Overhead Panel

1) 11B35, APU ALTN CONT

2) 11H17, L-FLT CONT SHUTOFF TAIL

MECH	INSP

3) 11H18, CTR-FLT CONT SHUTOFF TAIL

4) 11H27, R-FLT CONT SHUTOFF TAIL

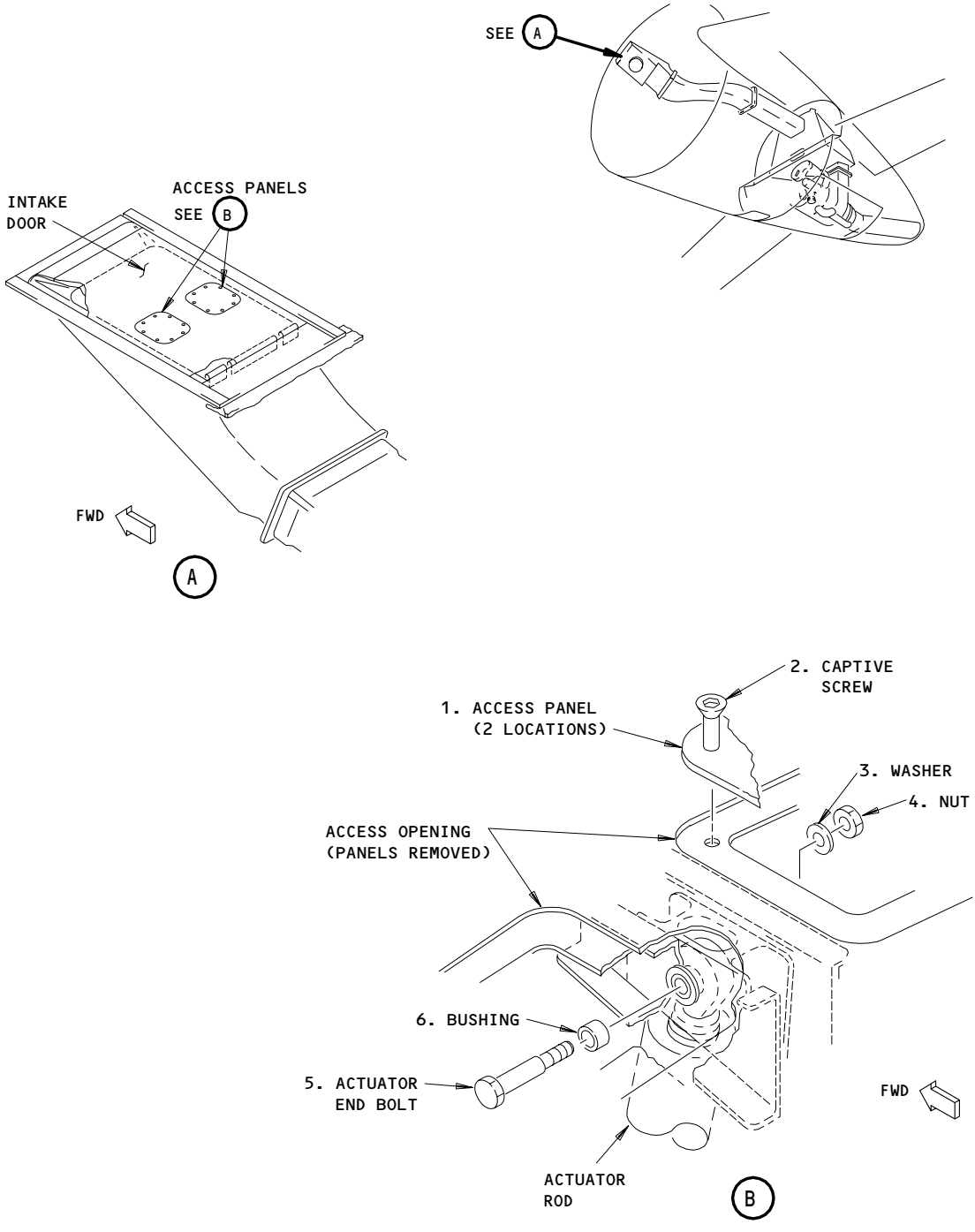
(15) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 overhead panel.

(16) Remove the DO-NOT-OPERATE tags from the L, C and R FLT CONTROL SHUTOFF TAIL switches on the P61 maintenance panel.

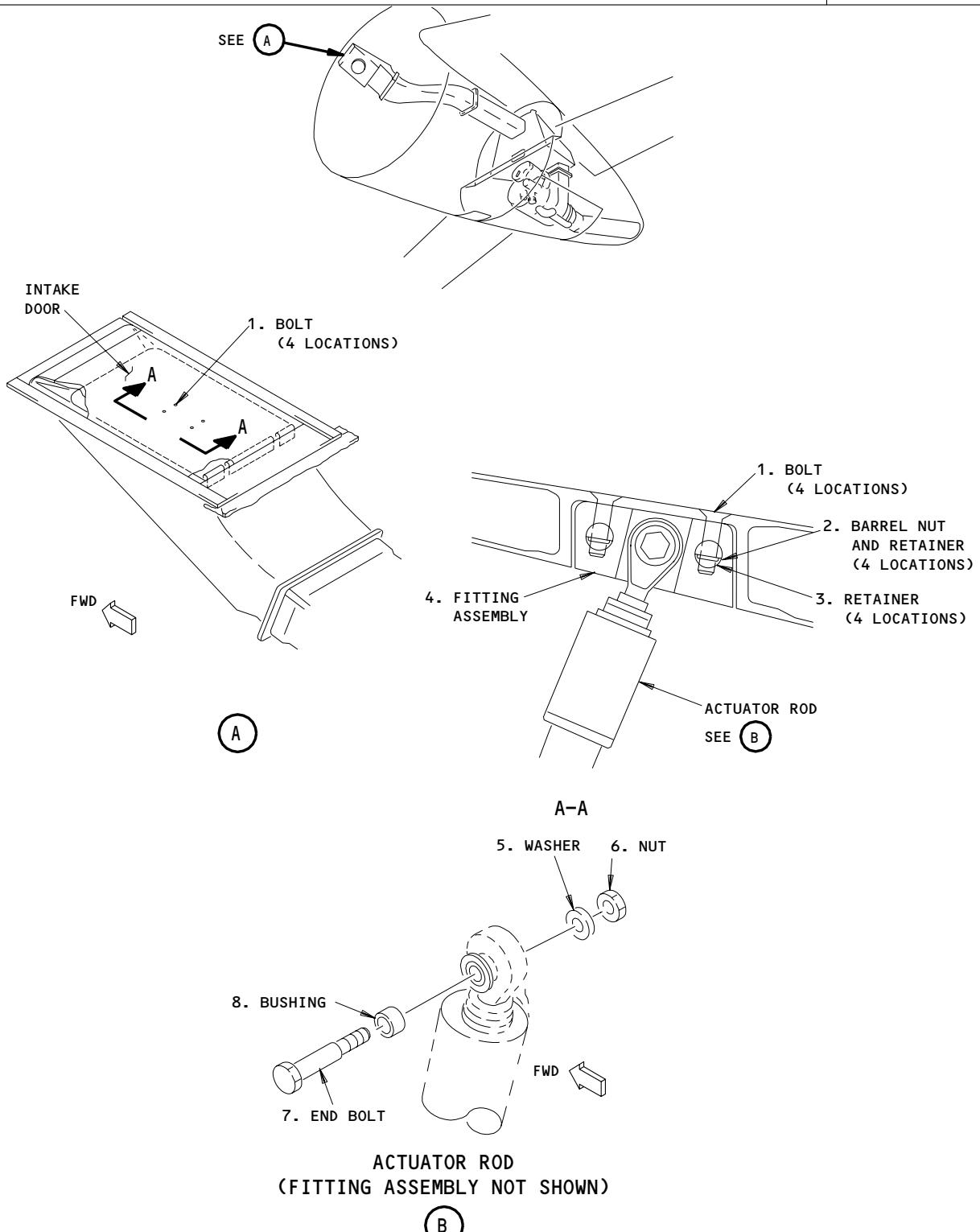
(17) If it is necessary supply hydraulic pressure to the left system, the right system, and the center system (AMM 29-11-00/201).

(18) Put the APU master control switch on the P5 overhead panel to the ON position to make sure all of the components of the air intake door system operate correctly.

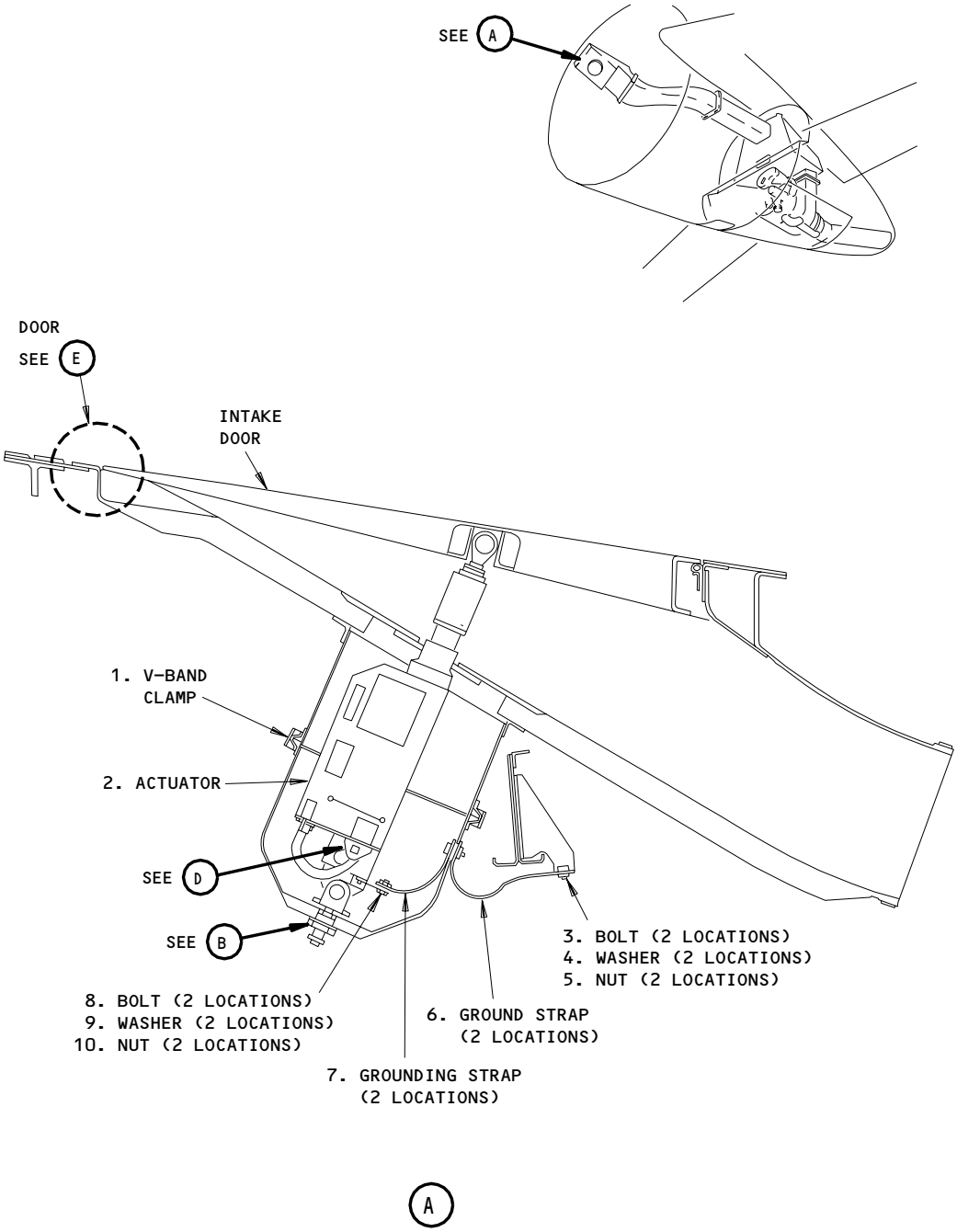
(19) Put the APU master control switch on the P5 overhead panel in the OFF position.



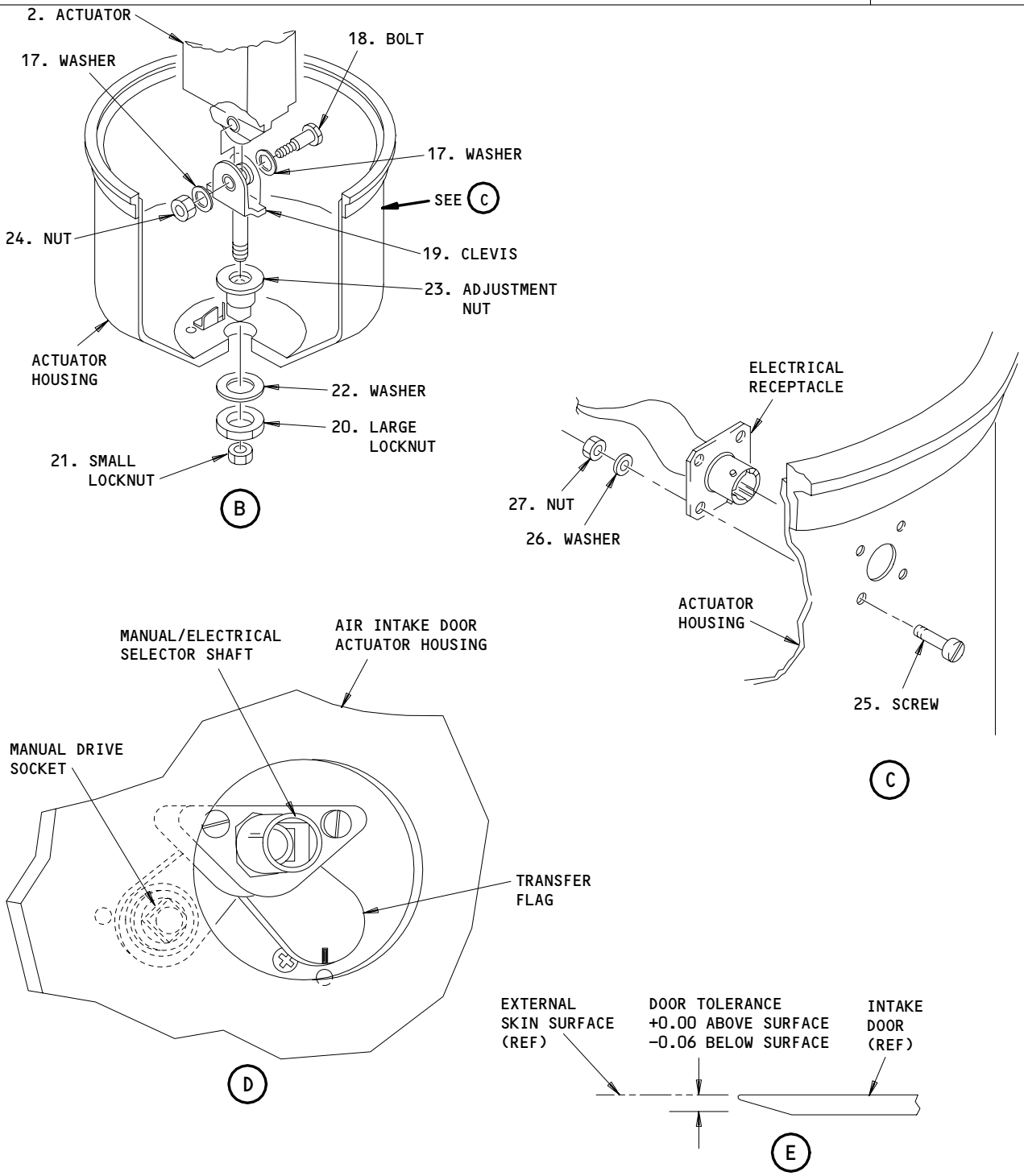
Air Intake Door Actuator Installation - Top Connection
Figure 401



Air Intake Door Actuator Installation - Top Connection
Figure 401A



Air Intake Door Actuator Installation - Bottom Connection
Figure 402 (Sheet 1)



Air Intake Door Actuator Installation - Bottom Connection
Figure 402 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-R03
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT				003	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU FUEL CONTROL UNIT		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP	MPD ITEM NUMBER

REPLACE THE APU FUEL CONTROL UNIT. 49-31-01-4A

AIRPLANE NOTE: APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER. 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. Fuel Control Unit Removal (Fig. 401)

A. Equipment

(1) Container - Fuel Resistant, 1 Gallon (4 Liters)

B. Prepare to Remove the Fuel Control Unit

(1) Make sure the APU control switch is in the OFF position and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

C. Remove the Fuel Control Unit

(1) Disconnect the electrical connectors (13).

(a) Put caps on the electrical connectors and on the fuel control unit.

(2) Remove the nut (14) and washer (15) to disconnect the bonding jumper from the fuel control unit.

(3) Do these steps to disconnect the fuel inlet hose (12) from the fuel control unit (1):

(a) Put the container below the fuel inlet hose (12).

(b) Disconnect the fuel inlet hose (12) from the fuel control unit (1).

(c) Let the fuel drain from the fuel inlet hose.

(d) Remove the union (11) and the packing (10).

MECH | INSP

(e) Discard the packing (10).

(f) Install caps on the fuel inlet hose and on the fuel inlet of the fuel control unit.

(4) Do these steps to disconnect the flow divider tube (5B) from the fuel control unit:

(a) Put the container below the flow divider tube (5B).

(b) Disconnect the flow divider tube (5B) from the left side of the fuel control unit.

1) Let the fuel drain from the flow divider tube.

2) Put a cap on the flow divider tube.

(c) Remove the union (6A) with the packing (6B).

1) Remove and discard the packing (6B).

2) Put a cap on the port of the fuel control unit.

(5) Do these steps to disconnect the IGV pressure hose (4) from the fuel control unit (1):

(a) Put the container below the IGV pressure hose (4).

(b) Disconnect the IGV pressure hose (4) from the fuel control unit (1).

(c) Let the fuel drain from the pressure hose.

(d) Put caps on the pressure hose and on the fuel control unit.

(6) Do these steps to disconnect the IGV return hose (7) from the fuel control unit:

(a) Put the container below the IGV return hose (7).

(b) Disconnect the IGV return hose (7) from the fuel control unit.

(c) Let the fuel drain from the return hose.

(d) Remove the union (8) and the packing (9).

(e) Discard the packing (9).

MECH | INSP

(f) Put caps on the return hose and on the fuel control unit.

(7) Do these steps to disconnect the drain tube disconnect from the bottom of the fuel control unit:

(a) Put the container below the drain tube disconnect.

(b) Disconnect the drain tube disconnect from the bottom of the fuel control unit.

(c) Put caps on the drain tube disconnect and fuel control unit.

(8) Remove the coupling (2) to remove the fuel control unit (1).

NOTE: A small quantity of oil will drain when the fuel control unit is removed.

(a) Remove and discard the packing (3).

(b) Remove the container.

2. Fuel Control Unit Installation (Fig. 401)

A. Consumable Materials

(1) D00205 Grease - Braycote 248

(2) D00341 Lubricant - Santovac 5 or

(3) D00504 Lubricant - Petrolatum Jelly - VV-P-236

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Fuel Control Assembly	49-31-00	01	65 or
			49-31-02	01	50 or
			49-31-05	01	50 or
			49-31-10	01	50
	3	Packing			154
	6B	Packing			14
	9	Packing			52
	10	Packing	49-11-00	01	185 or
			49-11-01	01	120

C. References

(1) AMM 49-11-00/201, Auxiliary Power Unit

(2) AMM 49-61-05/201, APU Control Unit

D. Fuel Control Unit Installation

(1) Remove all of the caps from the fuel tubes and from the ports on the fuel control unit.

(2) Lubricate the new packing (3) with a light coat of lubricant.

(3) Install the packing (3) on the mount flange of the lube pump.

CAUTION: CAREFULLY ALIGN THE SHAFT BETWEEN THE LUBE PUMP AND THE CONTROL UNIT. IF THE SHAFT AND THE SHAFT COUPLING ARE NOT ALIGNED, YOU CAN DAMAGE THE FUEL CONTROL UNIT OR THE LUBE PUMP.

(4) Put the fuel control unit (1) on the mount flange.

(a) Make sure the index pin is aligned.

(b) Install the coupling (2).

(c) Tighten the coupling to 20-22 inch-pounds (2.26-2.49 newton meters).

MECH	INSP

(5) Connect the flow divider tube:

(a) Lubricate the new packing (6B) with a light coat of lubricant.

(b) Install the union (6A) on the fuel control unit with the packing (6B).

(c) Connect the flow divider tube (5B) to the union (6A).

(6) Connect the drain tube to the bottom of the fuel control unit (1).

(7) Connect the pressure hose (4) to the fuel control unit (1).

(8) Lubricate the new packing (9) with a light coat of lubricant.

(9) Install the union (8) with the packing (9) on the fuel control unit (1).

(10) Connect the return hose (7) to the union (8).

(11) Lubricate the new packing (10) with a light coat of lubricant.

(12) Install the union (11) with the packing (10) on the fuel control unit (1).

(13) Connect the fuel inlet hose (12) to the union (11).

(14) Connect the bonding jumper to the fuel control unit with the nut (14) and the washer (15).

(a) Tighten the nut (14) to 50-55 inch-pounds (5.65-6.21 newton meters).

(15) Connect the electrical connectors (13).

E. Put the Airplane in its Usual Condition

(1) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(b) P11 Overhead Panel

MECH | INSP

1) 11B35, APU ALTN CONT

(2) Do the APU Control Unit - BITE procedure (AMM 49-61-05/201).

(3) Remove the DO-NOT-OPERATE tag from the APU control switch.

(4) Do this task: APU Starting and Operation (AMM 49-11-00/201).

(5) Examine the APU for leakage.

(6) Do this task: APU Shutdown Procedure (AMM 49-11-00/201).

(7) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Manually unlock the two hold-open struts from the two APU access doors.

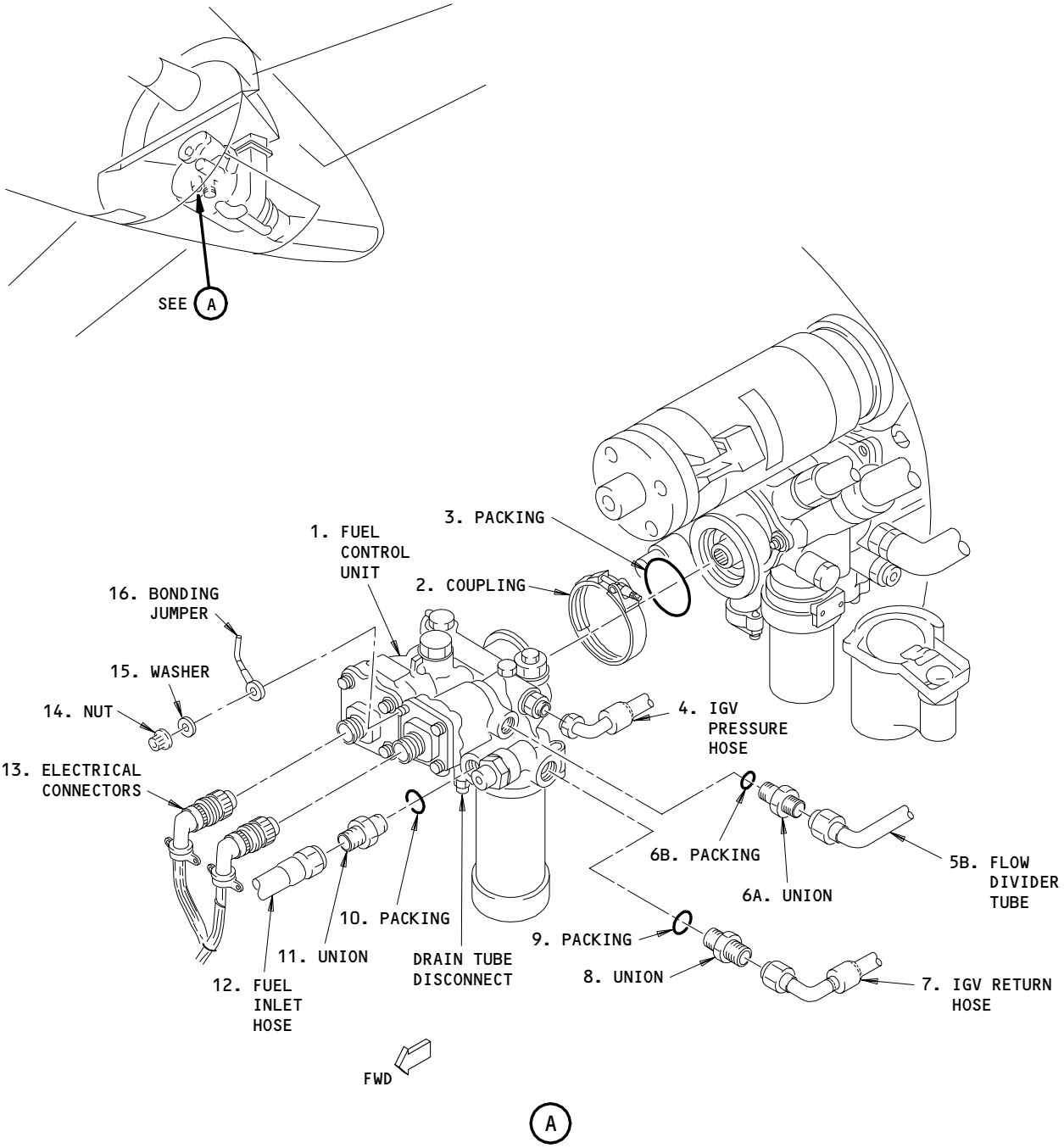
NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.



Fuel Control Installation
Figure 401

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-R04
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT				003	AUG 22/06

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU STARTER		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP

MPD ITEM NUMBER

REPLACE THE APU STARTER. 49-41-01-4A

AIRPLANE NOTE: APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER. 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. Starter Motor Removal (Fig. 401)

A. References

(1) AMM 49-41-05/401, APU Crank Contactor

(2) AMM 49-41-06/601, Starter Clutch

B. Procedure

(1) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P33 Forward Miscellaneous Electrical Equipment Panel

1) 33E5, BATTERY CHARGER APU

(c) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

MECH | INSP

2) 49C3, APU START

3) 49E4, APU BAT CHGR

(3) Do these steps to disconnect the electrical connector D300 from the APU battery.

(4) Open the left APU access door, 315AL, and right APU access door, 316AR:

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

(5) AIRPLANES WITH THE APU CRANK CONTACTOR (HARTMAN PART NUMBER A-703CD) (PRE-SB 49-36);
Do these steps to inspect the APU crank contactor, K117:

(a) Get access to the P49 APU auxiliary panel.

MECH | INSP

(b) Make sure the APU crank contactor, K117, did not fail in the closed position or show signs of an overheated condition as follows:

NOTE: If you find discoloration on the terminal studs or the structural components of the starter motor, the starter motor was overheated because of a defective APU crank contactor.

1) Remove the APU crank contactor (AMM 49-41-05/401).

2) Remove the screw, lockwasher and terminal shield from the APU crank contactor.

3) Get access to the internal parts of the APU crank contactor by removing the cover plate and cover assembly.

4) Examine the internal parts of the APU crank contactor:

a) Two main contactors show pitting on more than 75% of the total area.

b) Two main contactors for a shorted (welded) condition or show signs of burn or discoloration marks.

c) Two contact posts or two coil terminal posts for stripped studs or show signs of pitting and burned or discoloration marks.

d) Contactor coil shows signs of wrapping discoloration or a distorted bobbin.

e) If you find one or more of the above damage, replace the APU crank contactor.

f) If you find no damage, assemble the APU crank contactor by installing the cover assembly, cover plate and terminal shield.

5) Install the APU crank contactor (AMM 49-41-05/401).

MECH | INSP

WARNING: BE CAREFUL WHEN YOU DISCONNECT THE ELECTRICAL CABLES FROM THE STARTER MOTOR. IT IS POSSIBLE THAT THERE IS ELECTRICAL POWER AT THE TERMINAL POSTS EVEN WITH THE APU POWER CIRCUIT BREAKERS OPENED. PUT ON PROTECTIVE GLOVES AND USE INSULATED TOOLS. INJURY TO PERSONS CAN OCCUR BY AN ELECTRICAL SHOCK.

(6) Remove the starter motor:

(a) Remove the two terminal nuts (5) or the locknut (4) and the washer (15).

(b) Disconnect the positive electrical cables (6) and the fuse assembly (7) from the terminal post.

(c) Remove the two terminal nuts (8) or the locknut (13) and the washer (14), to disconnect the negative electrical cables (9) from the terminal post.

(d) Remove the nuts (11) and the bonding jumpers (10 and 12) from the starter motor (1).

NOTE: When the nut on the tie-bolt stud is loosened, the stud will move freely in the starter motor. It is not necessary to replace the starter because this is a usual condition.

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

(e) Remove the coupling (3) and pull the starter motor (1) out of the gearbox.

1) Remove and discard the packing (2).

(7) Do this task: Starter Clutch Inspection (AMM 49-41-06/601).

2. Starter Motor Installation (Fig. 401)

A. Consumable Materials

(1) D50056 Oil, Aircraft Turbine Engine (AMM 12-13-04/301) or

(2) D00341 Lubricant - Santovac 5

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1 2	Starter Motor Packing	49-41-01	01	50 170

C. References

(1) AMM 12-13-04/301, APU Servicing

(2) AMM 49-11-00/201, Auxiliary Power Unit

(3) AMM 49-41-06/601, Starter Clutch

(4) AMM 49-61-05/201, APU Control Unit

D. Procedure

(1) Clean the gearbox mounting flange for the starter motor.

(2) Install the APU starter motor:

(a) Lubricate the new packing (2) with a light coat of lubricant or oil.

(b) Install the packing (2) on the starter motor (1).

(c) Lubricate the splines on the shaft of the starter motor (1) with oil.

(d) Install the starter motor (1) on the APU gearbox.

NOTE: Make sure the index pin is aligned when you install the starter motor on the gearbox.

(e) Install the coupling (3) on the starter motor (1).

MECH | INSP

1) Tighten the coupling (3) to 50-55 inch-pounds (5.7-6.2 newton-meters).

2) Loosen and tighten the coupling (3) as necessary to make sure the coupling is installed correctly.

(f) Attach the bonding jumpers (10 and 12) to the tie-bolt studs on the starter motor (1) with the nuts (11).

NOTE: When the nut on the tie-bolt stud is loosened, the stud will move freely in the starter motor. It is not necessary to replace the starter motor because this is a usual condition.

1) Tighten the nuts (11) to 100 inch-pounds (11.3 newton-meters).

(g) Connect the positive electrical cables (6) to the starter motor:

1) Put the positive electrical cables (6) and the fuse assembly (7) on the starter motor (1).

2) Let the positive electrical cables (6) go to their free position.

3) Hold the positive electrical cables (6) in the free position and install the two terminal nuts (5) or the locknut (4).

4) Tighten the terminal nuts (5), one at a time, or the locknut (4) to 75-80 inch-pounds (8.5-9.0 newton-meters).

(h) Connect the negative electrical cables (9) to the starter motor (1):

1) Put the negative electrical cables (9) on the starter motor (1).

2) Let the negative electrical cables (9) go to their free position.

3) Hold the negative electrical cables (9) in the free position and install the washer (14) and the two terminal nuts (8) or the locknut (13).

MECH | INSP

4) Tighten the two terminal nuts (8), one at a time, or the locknut (13) to 50-55 inch-pounds (5.7-6.2 newton- meters).

(3) Do these steps to connect the APU battery connector:

(a) Connect the APU battery connector to the APU battery.

(b) Close the access cover on the forward side of the E6 rack.

(4) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

3) 49E4, APU BAT CHGR

(b) P33 Forward Miscellaneous Electrical Equipment Panel

1) 33E5, BATTERY CHARGER APU

(c) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(5) Do this task: APU Control Unit - BITE Test (AMM 49-61-05/201).

(6) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 overhead panel.

(7) Do an operational test of the starter motor clutch:

(a) Remove the end cap on the starter motor.

CAUTION: IMMEDIATELY DO AN APU SHUTDOWN IF THE STARTER MOTOR DOES NOT DISENGAGE AT THE OPERATIONAL SPEED OF THE APU. DAMAGE TO THE STARTER MOTOR AND THE STARTER MOTOR CLUTCH CAN OCCUR.

(b) Do this task: APU Starting and Operation (AMM 49-11-00/201).

(c) During the APU start procedure, look at the starter motor to make sure the shaft disengages at the APU operational speed.

MECH | INSP

(d) If the starter motor does not disengage at the APU operational speed, do these steps:

1) Do this task: APU Shutdown Procedure (AMM 49-11-00/201).

2) Do this task: Starter Clutch Inspection (AMM 49-41-06/601).

(e) Do this task: APU Shutdown Procedure (AMM 49-11-00/201).

(f) Install the end cap on the starter motor.

(8) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Manually unlock the two hold-open struts from the two APU access doors.

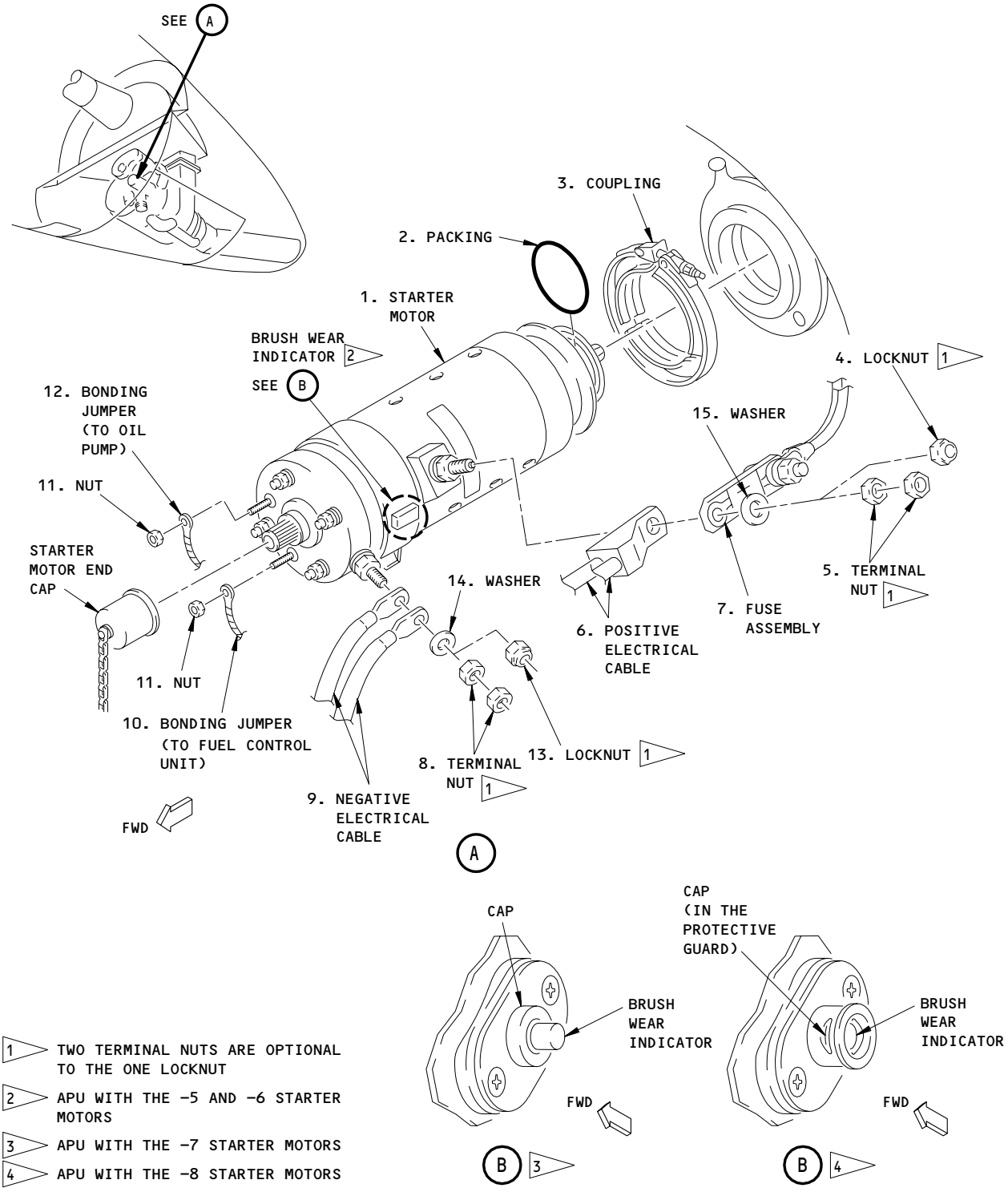
NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.



1 TWO TERMINAL NUTS ARE OPTIONAL TO THE ONE LOCKNUT

2 APU WITH THE -5 AND -6 STARTER MOTORS

3 APU WITH THE -7 STARTER MOTORS

4 APU WITH THE -8 STARTER MOTORS

Starter Motor Installation
Figure 401

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-R05
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT				003	DEC 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU IGNITION UNIT		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP

MPD ITEM NUMBER

REPLACE THE APU IGNITION UNIT. 49-41-03-4A

AIRPLANE NOTE: APPLICABLE TO ALL MODELS EXCEPT THE 767-ER. 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. Ignition Unit Removal (Fig. 401)

A. Prepare for Ignition Unit Removal

(1) Make sure the APU control switch is in the OFF position and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

2) 49C2, APU PRIME CONT

3) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

B. Ignition Unit Removal

WARNING: MAKE SURE THE ELECTRICAL POWER IS REMOVED FROM THE IGNITION SYSTEM FOR FIVE MINUTES OR MORE. THE IGNITION SYSTEM VOLTAGE IS VERY DANGEROUS AND CAN CAUSE INJURY.

WARNING: WHEN THE IGNITION LEAD IS DISCONNECTED, GROUND THE LEAD TO MAKE SURE ALL OF THE ENERGY IS OUT OF THE SYSTEM. IF YOU DO NOT GROUND THE IGNITION LEAD, INJURY CAN OCCUR.

(1) Disconnect the ignition lead (1) from the igniter and immediately ground the lead.

(2) Connect the ignition lead to the igniter.

(a) Tighten the ignition lead at the igniter to 100-105 inch-pounds (11.3-11.9 newton meters).

(3) Install a lockwire to the ignition lead at the ignitor.

(4) Disconnect the ignition lead (1) and the electrical plug (5) from the ignition unit.

(a) Put caps on all of the electrical connectors.

(5) Remove the bolts (2) and the bonding jumpers.

(6) Remove the ignition unit (3) and the insulator (4).

2. Ignition Unit Installation (Fig. 401)

A. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	3	Ignition Unit (Exciter)	49-41-00	01	25

B. References

(1) AMM 49-11-00/201, Auxiliary Power Unit

(2) AMM 49-61-05/201, APU Control Unit

C. Procedure

(1) Put the insulator (4) and the ignition unit (3) in their position on the compressor case.

(2) Install the bonding jumpers and the bolts (2).

(a) Tighten the bolts (2) to 50 inch-pounds (5.65 newton meters).

(3) Remove all of the caps on the electrical connectors.

(4) Connect the electrical plug (5) and the ignition lead (1) to the ignition unit (3).

(a) Tighten the ignition lead to 100-105 inch-pounds (11.3-11.9 newton meters).

(b) Install a lockwire to the ignition lead at the ignition unit.

MECH | INSP

(5) Do this task: APU Control Unit - BITE Test (AMM 49-61-05/201).

D. Put the Airplane Back to its Usual Condition

(1) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Manually unlock the two hold-open struts from the two APU access doors.

NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.

(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(b) P11 Overhead Panel

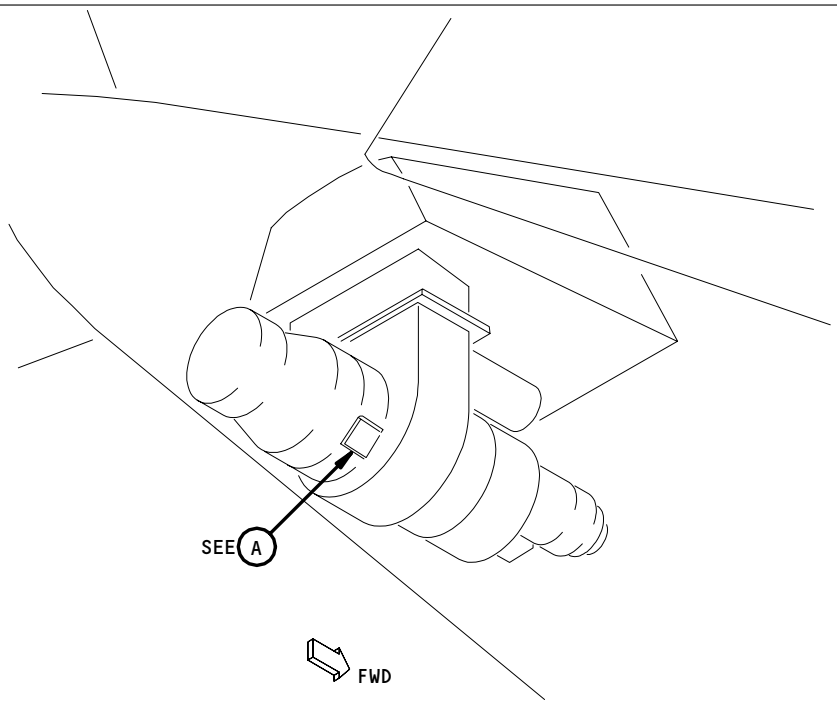
1) 11B35, APU ALTN CONT

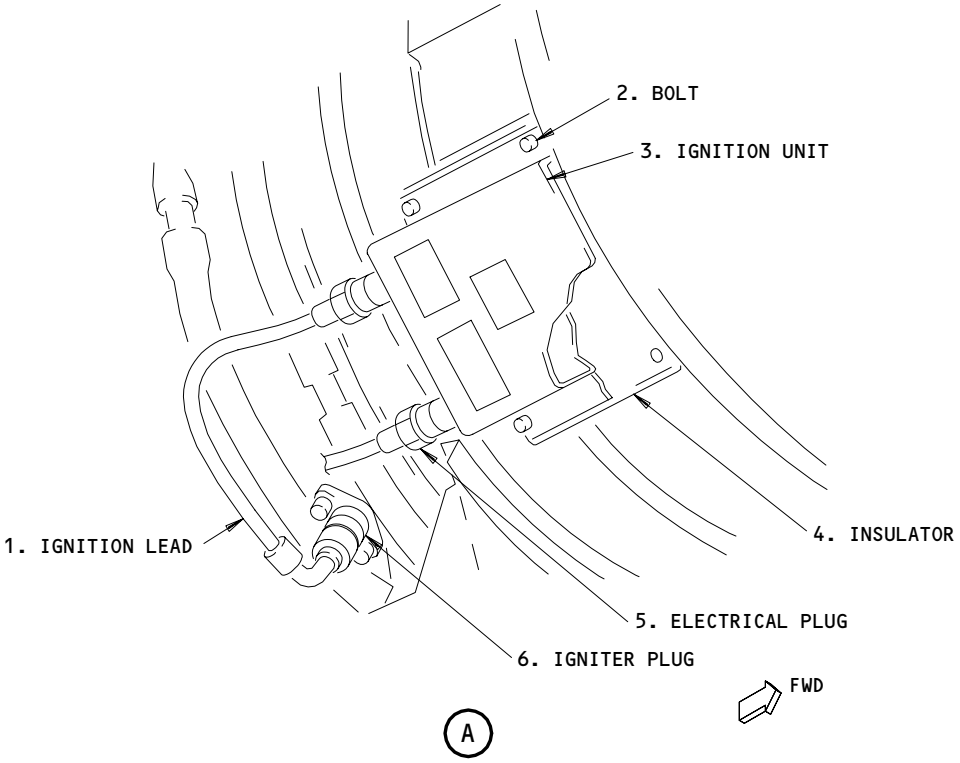
(3) Remove the DO-NOT-OPERATE tag from the APU control switch.

(4) Do this task: APU Starting and Operation (AMM 49-11-00/201).

(a) Make sure the APU starts correctly.

(5) If it is not necessary, do this task: APU Shutdown Procedure (AMM 49-11-00/201).





Ignition Unit Installation
Figure 401

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-R06
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT				003	AUG 22/05

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU INLET GUIDE VANE ACTUATOR		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP	MPD ITEM NUMBER

REPLACE THE APU INLET GUIDE VANE ACTUATOR. 49-52-02-4A

AIRPLANE NOTE: APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER. 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. Inlet Guide Vane (IGV) Actuator Removal (Fig. 401 and 402)

A. Procedure

(1) Make sure the APU control switch on the P5 panel is OFF and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49, APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

(4) Get access to the IGV actuator:

(a) Put the container below the fuel control unit.

WARNING: BE CAREFUL WHEN YOU LOOSEN THE FUEL LINES AND MOVE THE IGV ACTUATOR. A SPRAY OF FUEL CAN COME FROM THE FUEL LINES. A SPRAY OF FUEL CAN CAUSE INJURY TO PERSONS.

(b) Loosen the fuel inlet line and the return line on the fuel control unit.

NOTE: This will permit the movement of the IGV actuator shaft.

1) Let the fuel fully drain out of the fuel lines.

(c) Remove the bolts (11 and 12), the washers (10 and 13), the nut (9), and the cover (14) from the bottom mounting bracket.

MECH | INSP

(d) Remove the nut and the bolt that attach the IGV rod to the IGV bellcrank.

(5) Do a check of the opening force that is necessary for the inlet guide vane:

(a) Push the IGV linkage rod in until it stops.

1) If the IGV linkage rod does not move, replace the APU (AMM 49-11-01/401).

(b) Connect the force scale tester to the IGV rod bearing.

(c) Pull the scale and measure the force that is necessary to open the inlet guide vanes.

1) The opening force must not be more than 15 pounds (67 newtons).

(d) If the opening force is more than 15 pounds (67 newtons), replace the APU (AMM 49-11-01/401).

(e) If the opening force is 15 pounds (67 newtons) or less, the IGVs are satisfactory. Install the fuel inlet line and the return line on the fuel control unit.

(f) Attach the rod end bearing to the bellcrank with the bolt and the nut.

1) Tighten the nut to 40-42 inch-pounds (4.5-4.8 newton-meters).

(6) Disconnect the IGV actuator:

(a) Disconnect the electrical connector from the actuator (4).

(b) Remove the bolts (1) and the retainer (2) from the actuator (4).

WARNING: STAY CLEAR WHEN YOU REMOVE THE FUEL HOSES OR MOVE THE IGV ACTUATOR SHAFT. FUEL WILL COME OUT OF THE FUEL HOSES AND ACTUATOR WHEN THE HOSES ARE DISCONNECTED AND CAN CAUSE INJURY.

(c) Disconnect the fuel return hose and the fuel inlet hose from the IGV actuator.

1) Remove and discard the packings (3A and 3B).

(d) Put caps on the fuel hoses and the actuator.

(e) Disconnect the drain tube from the elbow (8).

(f) Remove the elbow (8), the nut (7), the retainer (6), and the packing (5) from the actuator (4).

1) Remove and discard the packing (5).

2) Put caps on the drain tube and the actuator.

(7) Remove the IGV actuator:

(a) Remove the two nuts (17), four washers (16) and two bolts (15) from the bottom mounting bracket.

(b) Remove the two bolts (19) from the upper mount bracket (20).

(c) Push the bellcrank back until it is clear of the block assembly (21) and remove the two bushings (22) from the block assembly.

1) Discard the two bushings (22).

(d) Remove the bracket (20) with the actuator (4).

(e) Remove the two bolts (18) and bracket (20) from the actuator (4).

2. Inlet Guide Vane (IGV) Actuator Installation (Fig. 401)

A. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	3A	Packing	49-31-00	01	44
	3B	Packing			48
	4	Actuator	49-52-02	02	140
	5	Packing			165
	22	Bushing			70

B. References

(1) AMM 49-11-00/201, Auxiliary Power Unit

(2) AMM 49-61-05/201, APU Control Unit

C. Consumable Materials

(1) D00341 Lubricant - Santovac 5 or

(2) D00504 Lubricant - Petrolatum Jelly - VV-P-236

D. Access

E. Procedure

(1) Install the IGV actuator:

CAUTION: MAKE SURE THE BUSHINGS TURN FREELY ON THE BLOCK ASSEMBLY. IF THE BUSHINGS DO NOT TURN FREELY, DAMAGE TO THE IGV LINKAGE CAN OCCUR.

(a) Install new bushings (22) on the block assembly (21).

CAUTION: MAKE SURE THE "OUT" ON THE CHAMFER SIDE OF THE BLOCK ASSEMBLY IS INSTALLED ON THE OUTBOARD SIDE. IF THE BLOCK ASSEMBLY IS NOT INSTALLED CORRECTLY, DAMAGE TO THE IGV LINKAGE CAN OCCUR.

(b) Install the block assembly (21) in the actuator shaft.

NOTE: Use a thin-wall, one-half inch, open-end wrench to hold the actuator shaft.

1) Tighten the block assembly (21) to 120-125 inch-pounds (13.5-14.1 newton-meters).

(c) Attach the upper mount bracket (20) to the actuator with the two bolts (18).

1) Tighten the two bolts (18) to 50-53 inch-pounds (5.7-6.0 newton-meters).

(d) Put the actuator (4) and the block assembly (21) in their position through the bottom mounting bracket.

(e) Attach the block assembly (21) to the bellcrank.

1) Make sure the "OUT" on the chamfer side of the block assembly is outboard of the APU.

2) Turn the bellcrank as necessary to install the block assembly in the arms of the bellcrank.

(f) Attach the upper mount bracket (20) to the APU with the two bolts (19).

1) Tighten the two bolts (19) to 50-53 inch-pounds (5.7-6.0 newton-meters).

(g) Attach the actuator to the bottom mounting bracket with the bolts (15), the washers (16), and the nuts (17).

1) Tighten the nuts (17) to 100-120 inch-pounds (11.3-13.5 newton meters).

(2) Attach the cover (14) with the bolts (11 and 12), the washers (10 and 13), and the nut (9).

(a) Tighten the bolt (12) and the nut (9) to 100-120 inch-pounds (11.3-13.5 newton-meters).

(3) Connect the IGV actuator:

(a) Lubricate the new packing (5) with a light coat of lubricant.

MECH | INSP

(b) Install the elbow (8), the nut (7), the retainer (6), and the packing (5) on the actuator (4).

(c) Connect the drain tube to the elbow (8).

(d) Lubricate the new packings (3A and 3B) with a light coat of lubricant.

(e) Install the packings (3A and 3B) on the fuel inlet and fuel return hoses.

(f) Connect the fuel inlet and fuel return hoses to the actuator (4).

(g) Attach the retainer (2) to the actuator (4) with the bolts (1).

(h) Connect the electrical connector to the actuator.

(4) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49, APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(b) P11, Overhead Panel

1) 11B35, APU ALTN CONT

(5) Do this task: APU Control Unit - Self-Test (AMM 49-61-05/201).

(6) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 panel.

(7) Do a leakage check of the APU:

(a) Do this task: APU Starting and Operation (AMM 49-11-00/201).

(b) During the APU operation, examine the APU for leakage.

(c) Do this task: APU Shutdown Procedure (AMM 49-11-00/201).

(8) Close the left APU access door, 315AL, and right APU access door, 316AR:

MECH	INSP

(a) Manually unlock the two hold-open struts from the two APU access doors.

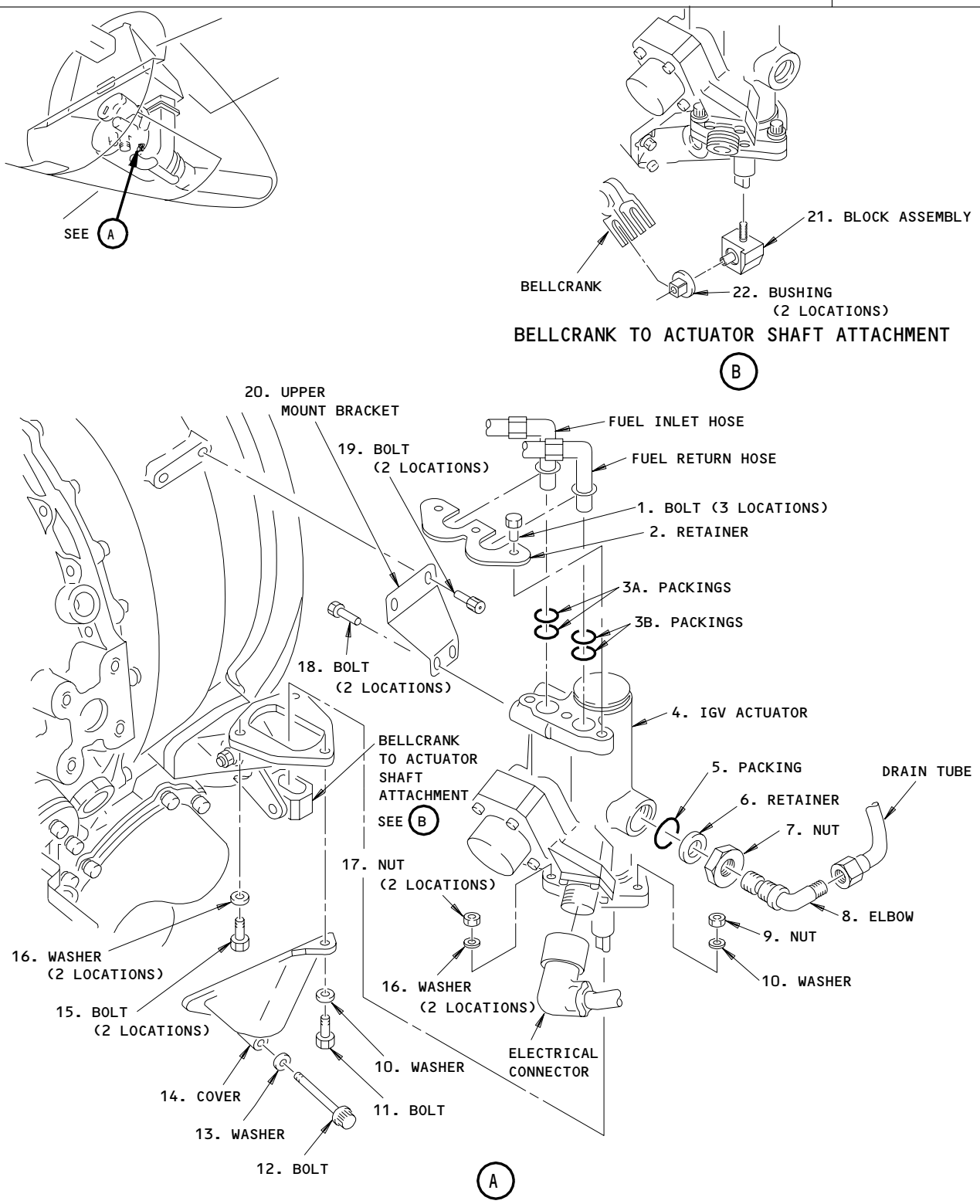
NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

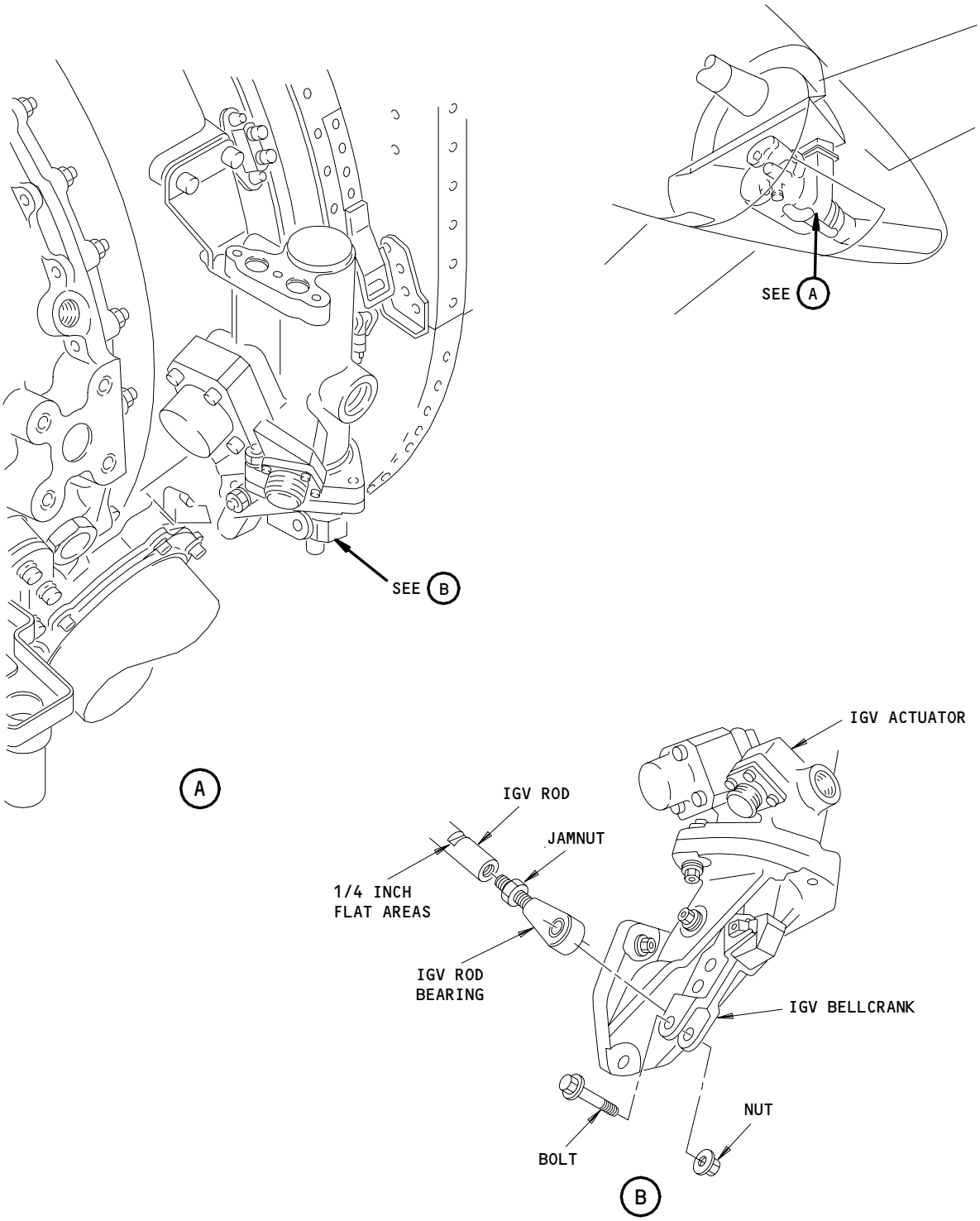
(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.



Inlet Guide Vane Actuator Installation
Figure 401



IGV Opening Force Check
Figure 402

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-R07
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT				003	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU SURGE VALVE		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP	MPD ITEM NUMBER

REPLACE THE APU SURGE VALVE. 49-53-01-4A

AIRPLANE NOTE: APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER. 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. Surge Control Valve Removal (Fig. 401)

A. Prepare for the Surge Control Valve Removal

(1) Make sure the APU control switch is in the OFF position and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

B. Surge Control Valve Removal

(1) Disconnect the electrical connector (10) from the surge control valve (3).

(a) Put caps on the electrical connectors.

(2) APU WITH THE FAN ISOLATION VALVE CONNECTED TO THE SURGE CONTROL VALVE (PRE-HONEYWELL-SB 49-7192);
Disconnect the pressure tube (14) from the fan isolation valve.

(a) Disconnect the pressure tube (14) for the fan isolation valve from the union (13).

(b) Remove the union (13) and packing (12) from the surge valve (3).

(c) Discard the packing (12).

(d) Put caps on all of the open ends of the tubes and on the surge control valve.

(3) APU WITH THE FAN ISOLATION VALVE CONNECTED TO THE FIRST STAGE COMPRESSOR (ALLIEDSIGNAL SB 49-7192);
Disconnect the pressure tube (9) for the compressor discharge air.

(a) Put caps on the open end of the tube and on the surge control valve.

(4) Remove the coupling (4), the duct clamps (1), and the duct assembly (2).

(5) If necessary, remove the aft coupling (6) and the elbow duct (7) to help release the surge control valve (3).

(6) Remove the bolts (5) to remove the surge control valve (3).

2. Surge Control Valve Installation (Fig. 401)

A. References

(1) AMM 49-11-00/201, Auxiliary Power Unit

(2) AMM 49-61-05/201, APU Control Unit

B. Consumable Materials

(1) D00408 Lubricant - Graphite Dry Film, DGF 123

C. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	3	Surge Control Valve	49-53-06	01	50
	11	Plug	49-53-00	01	247
	12	Packing	49-53-00	01	248 250
	13	Union	49-53-00	01	245

D. Surge Control Valve Installation

(1) Remove all of the caps from the tubes and from the surge control valve.

MECH | INSP

(2) Attach the surge control valve (3) to the APU with the bolts (5) and the coupling (4).

(3) Lubricate the ends of the duct assembly (2) with a thin layer of the graphite dry film lubricant.

(4) Install the duct assembly (2) with the clamps (1).

(5) If you removed the elbow duct (7) during the surge control valve removal, install the elbow duct (7) with the clamp (6).

(6) Tighten the coupling (4) and the aft coupling (6):

NOTE: Tighten the aft coupling (6) if the elbow duct (7) was removed during the surge control valve removal.

(a) Tighten the coupling (4) and (6) to 55-60 inch-pounds (6.22-6.78 newton meters).

(b) Lightly hit all around the couplings (4) and (6) with a rubber hammer to seal the coupling.

(c) Tighten the couplings (4) and (6) again until the coupling nut stays at the specified torque after you lightly hit it.

(7) Tighten the bolts (5) to 50-55 inch-pounds (5.65-6.22 newton meters).

(8) Tighten the clamps (1) to 25-27 inch-pounds (2.83-3.05 newton meters).

(9) Lubricate the union connections on the surge control valve with a thin layer of the graphite dry film lubricant.

(10) APU WITH THE FAN ISOLATION VALVE CONNECTED TO THE SURGE CONTROL VALVE (PRE-HONEYWELL-SB 49-7192);
Connect the pressure tube (14) for the fan isolation valve.

(a) Lubricate the new packing (12) with a light coat of lubricant.

(b) Remove the cap from the pressure tube (14) for the fan isolation valve.

(c) Install the union (13) to the pressure tube (14) for the fan isolation valve.

MECH | INSP

(d) Install the packing (12) and the pressure tube (14) for the fan isolation valve to the surge valve (3).

(11) APU WITH THE FAN ISOLATION VALVE CONNECTED TO THE FIRST STAGE COMPRESSOR OR WITHOUT THE FAN ISOLATION VALVE (POST-HONEYWELL-SB 49-7192 OR POST-HONEYWELL-SB 49-7392);
Install a plug (11) and packing (12) on the surge valve (3).

(a) Tighten the plug to 65 inch-pounds (7.35 N.m).

(12) APU WITH THE FAN ISOLATION VALVE CONNECTED TO THE FIRST STAGE COMPRESSOR (ALLIEDSIGNAL SB 49-7192);
Connect the pressure tube (9) for the compressor discharge air:

(a) Connect the tube to the surge control valve (3).

(13) Connect the electrical connector (10) to the surge control valve (3).

(a) Install a lockwire on the electrical connector.

E. Put the Airplane Back to its Usual Condition.

(1) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Manually unlock the two hold-open struts from the two APU access doors.

NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.

(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

MECH | INSP

1) 49C3, APU START

(b) P11 Overhead Panel

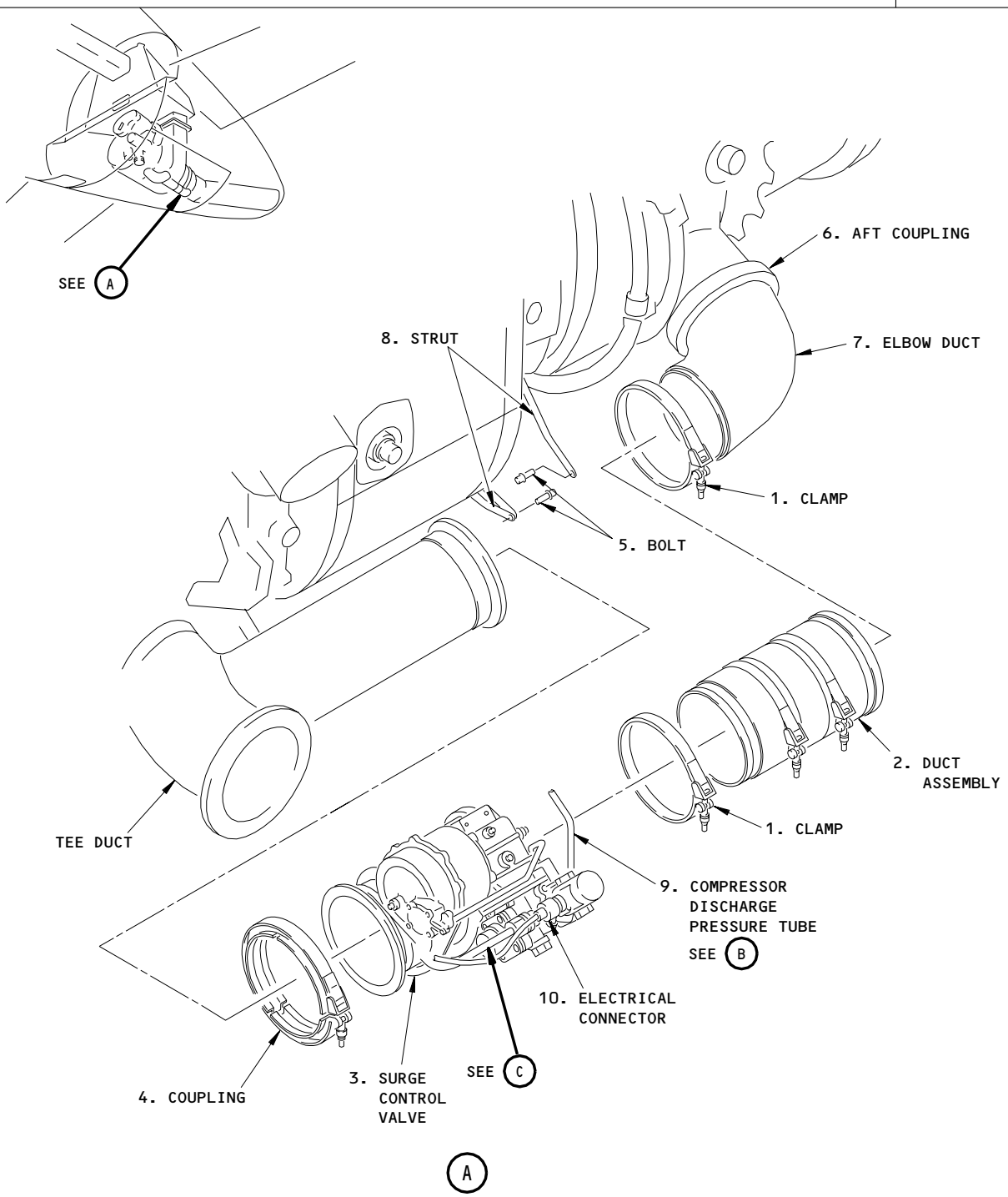
1) 11B35, APU ALTN CONT

(3) Remove the DO-NOT-OPERATE tag from the APU control switch.

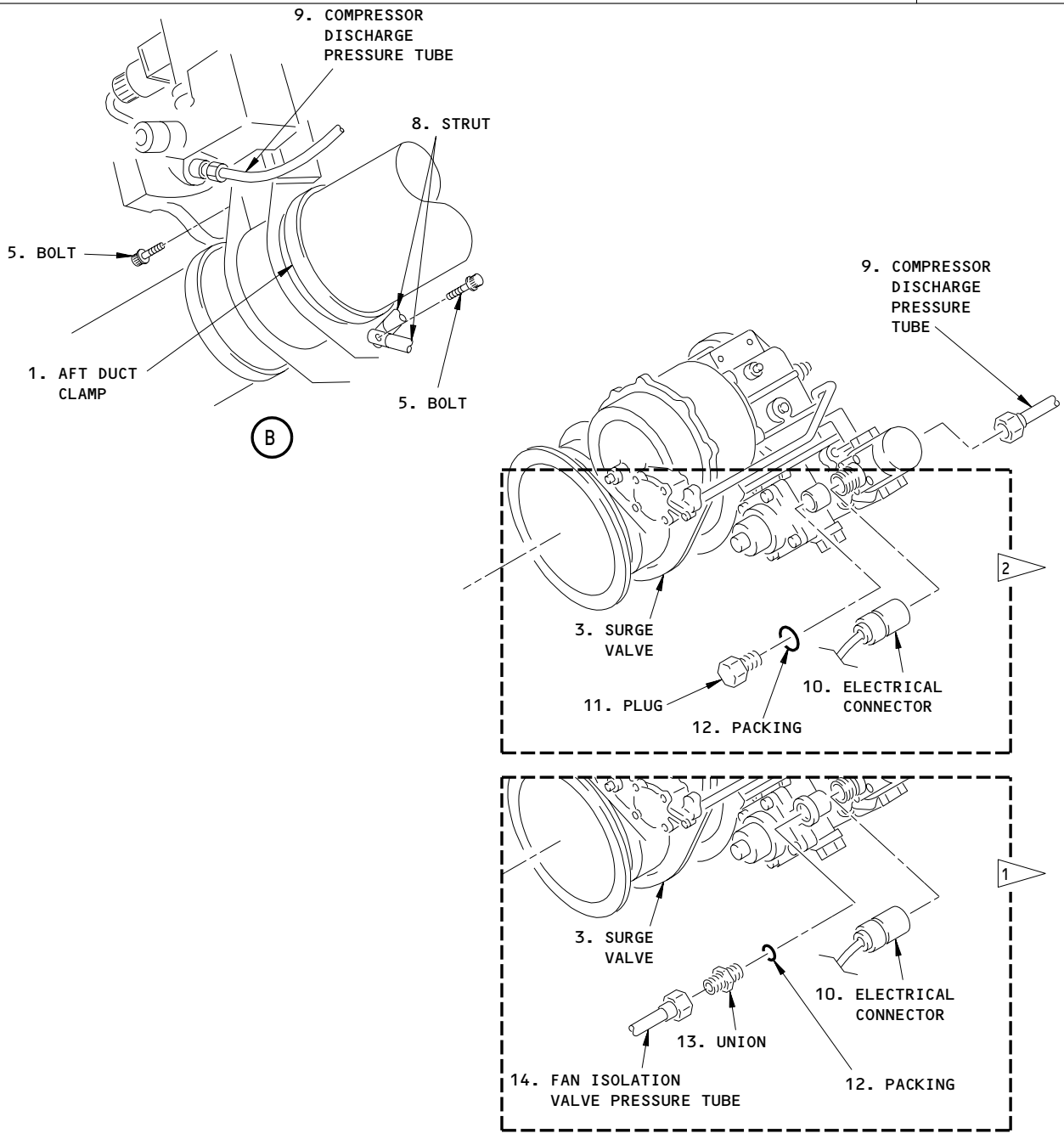
(4) Do this task: APU Starting and Operation (AMM 49-11-00/201).

(5) After five minutes, do this task: APU Shutdown Procedure (AMM 49-11-00/201).

(6) Do this task: APU Control Unit - BITE Procedure (AMM 49-61-05/201).



Surge Control Valve Installation
Figure 401 (Sheet 1)



1 APUs PRE-HONEYWELL-SB 49-7192; MAKE SURE THAT THE FAN ISOLATION VALVE PRESSURE TUBE IS CORRECTLY INSTALLED.

2 APUs POST-HONEYWELL-SB 49-7192 OR SB 49-7392; MAKE SURE THAT A PLUG WITH PACKING IS CORRECTLY INSTALLED ON THE SURGE CONTROL VALVE IN PLACE OF THE FAN ISOLATION VALVE PRESSURE TUBE.

Surge Control Valve Installation
Figure 401 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-008-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	STABLIZR BX		APU CNG	99XXX	002	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	APU AIR INTAKE DUCT - INTERNAL		NOTE	ALL

ZONES	ACCESS PANELS
314	315AL 316AR

MECH	INSP	MPD ITEM NUMBER

GENERAL INSPECTION OF INTERNAL PORTION OF THE APU AIR INTAKE DUCT FOR CONDITION AND SECURITY. 49-15-01-4B

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL MODELS EXCEPT THE 767-400ER.

1. Air Intake Duct Removal (Fig. 401)

A. References

(1) AMM 29-11-00/201, Main (Left, Right, and Center) Hydraulic Systems

B. Procedure

(1) Do this task: Remove Hydraulic Power (AMM 29-11-00/201).

(2) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag.

(3) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

3) 49C4, APU INLET DOOR ACT

MECH | INSP

WARNING: THE CONTROLS ACCESS DOOR MUST NOT BE USED TO HOLD YOUR WEIGHT TO GET ACCESS TO THE STABILIZER TORSION BOX COMPARTMENT. YOUR WEIGHT CAN RELEASE THE SPRING-LOADED LATCHES. INJURY TO PERSONNEL CAN OCCUR.

(4) Open the service access door, 312AR.

(5) If it is necessary, install a service platform over the service access door, 312AR.

(6) Do these steps to remove the forward intake duct (3):

NOTE: It is necessary to loosen the air intake port before you can correctly remove the forward intake duct.

It is recommended that you use two persons to remove the forward intake duct. The location of the first person is on the outside of the airplane, on a service platform near the air intake door. The location of the second person is in the stabilizer torsion box compartment and near the forward intake duct.

(a) Disconnect the ground wires from the bracket that grounds the intake door actuator (1) to the airplane.

(b) Disconnect the electrical connector from the side of the housing for the intake door actuator (1).

(c) Remove the bolts (2) that attach the intake port (10) to the external side of the airplane.

(d) Remove the bolts (11) and the washers (12) that attach the forward intake duct (3) to the bulkhead (9).

(e) Move the forward intake duct (3) at an angle with the aft end down.

(f) Move the forward intake duct (3) aft to disconnect it from the air intake port (10).

(g) Remove the forward intake duct (3).

(7) Do these steps to remove the aft intake duct (6):

NOTE: The forward intake duct must be removed before you can remove the aft intake duct.

WARNING: THE CONTROLS ACCESS DOOR MUST NOT BE USED TO HOLD YOUR WEIGHT GET ACCESS TO THE STABILIZER TORSION BOX COMPARTMENT. YOUR WEIGHT CAN RELEASE THE SPRING-LOADED LATCHES. INJURY TO PERSONNEL CAN OCCUR.

(a) Open the controls access door, 313AL.

(b) If it is necessary, install a service platform over the controls access door, 313AL.

(c) APU AIR INTAKE DUCTS WITH THE DRIP SHIELD;
Remove the four bolts (16), four washers (17) and drip shield (15) from the four brackets (18) on the aft air intake duct (6).

(d) Remove the fasteners that attach the slip ring (7) to the clips (13).

(e) Move the slip ring (7) forward to disconnect the aft intake duct (6) from the adapter (8).

(f) Remove the bolts (14) that attach the aft intake duct (6) to the plenum.

(g) Remove the aft intake duct (6).

(8) If the removed ducts are to be installed in the airplane again, visually examine the ducts:

(a) Examine the internal sides of the duct(s) for foreign objects, chips, and cracks.

(b) Examine the external side of the duct(s) for cracks.

2. Air Intake Duct Installation (Fig. 401)

A. References

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

(2) AMM 29-11-00/201, Main (Left, Center, and Right) Hydraulic Systems

(3) AMM 51-31-01/201, Seals and Sealing

B. Equipment

(1) Ohmmeter (or alternative tool)

(a) C15292 Ohmmeter - Electrical Bonding (also called T477W) (recommended)
Avtron Mfg. Inc.
10409 Meech Ave., Cleveland, OH 44105-4166

(b) Model 1010-A Micro-Ohmmeter - Autoranging/Autotest, 10 Micro-ohms to 200 Ohms, Accuracy: 0.05% (alternative)
Barberree Custom Design
1401 Laurier House, 1600 Beach Ave., Vancouver, BC Canada V6G 1Y6, DC

C. Consumable Materials

(1) A00247 Sealant, Pressure and Environmental - BMS5-95

(2) B00130 Alcohol, Isopropyl - TT-I-735

(3) G00034 Cloth, Process Cleaning Absorbent Wiper (Cheesecloth, Gauze) - BMS15-5 or

(4) G02330 Brush, Stiff Bristle, Non-Metallic - Tampico GA55-1

D. Parts

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	3	Duct Assembly (Forward Air Intake Duct)	49-15-01	01	20
	6	Duct Assembly (Aft Air Intake Duct)			51

E. Procedure

(1) Do these steps to install the aft intake duct (6):

MECH	INSP

(a) Put the aft intake duct (6) in its position.

(b) Install the bolts (14) that attach the aft intake duct (6) to the plenum.

(c) Move the slip ring (7) over the aft intake duct (6).

(d) Install the fasteners that attach the slip ring (7) to the clips (13).

(e) Seal the aft end of the aft intake duct (6) with a fillet seal (AMM 51-31-01/201).

(f) If the adapter (8) was removed, seal the adapter with a fillet seal at the bulkhead (AMM 51-31-01/201).

(g) APU AIR INTAKE DUCTS WITH THE DRIP SHIELD;
Install the drip shield (15) to the four brackets (18) on the aft air intake duct (6) with the four washers (17) and four bolts (16).

(2) Do these steps to install the forward intake duct (3):

NOTE: If the aft intake duct was removed, it must be installed before you install the forward intake duct.

(a) Put the forward intake duct (3) on the intake port (10).

(b) Attach the forward intake duct (3) to the bulkhead (9) with the bolts (11) and the washers (12).

(c) Seal the aft end of the forward intake duct (3) with a fillet seal (AMM 51-31-01/201).

(d) Make sure the intake ducts are installed correctly:

(e) Make sure the connections at the intake port, at the bulkhead, and at the plenum are tight.

(f) Make sure the ducts are sealed correctly.

(3) Do these steps to install the air intake port (10):

(a) Install the bolts (2) that attach the intake port (10) to the external side of the airplane.

MECH | INSP

(b) Clean the surfaces of the bracket and the ground wires with alcohol and a cloth or brush.

(c) Use a small amount of pressure on the cloth or brush while you clean the surfaces of the bracket and the ground wires.

(d) Continue to clean the surfaces until there is no visible residue on the surfaces.

(e) Install the ground wires to the bracket.

(f) Use an ohmmeter to make sure the bonding resistance between the actuator for the air intake door and the airplane structure is less than 0.001 ohm.

(g) Connect the electrical connector to the housing for the intake door actuator (1).

F. Put the Airplane Back to Its Usual Conditions

(1) Remove the service platforms that you used.

(2) Close the service access door, 312AR and controls access door, 313AL.

(3) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

3) 49C4, APU INLET DOOR ACT

(b) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(4) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 overhead panel.

(5) If it is necessary, supply hydraulic pressure to the left, the right, and the center hydraulic system (AMM 29-11-00/201).

(6) Do an operational test of the air intake door:

MECH	INSP

(a) Supply electrical power to the airplane (AMM 24-22-00/201).

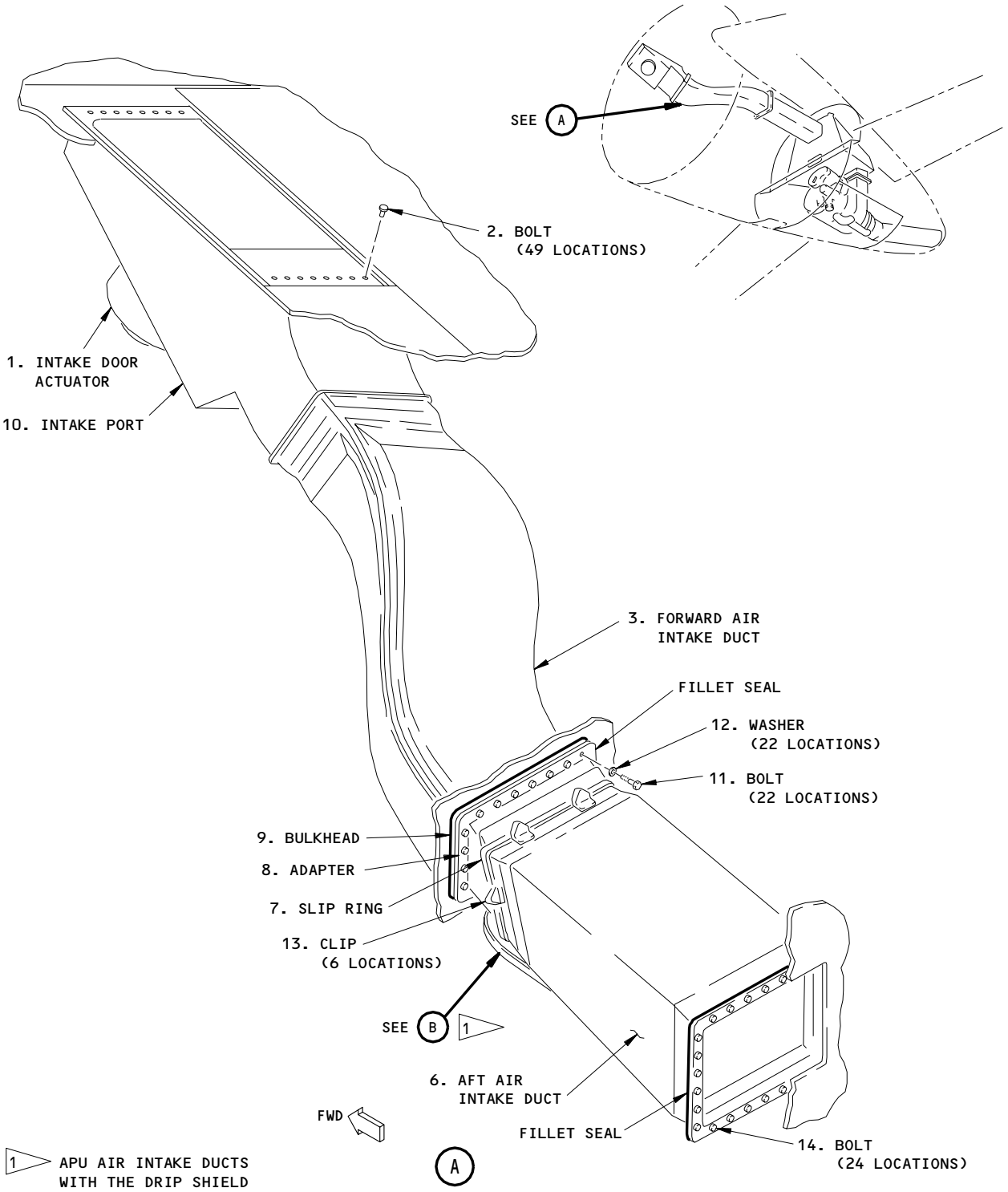
(b) Turn the APU control switch on the P5 overhead panel to ON.

(c) Look at the air intake door and make sure it is open.

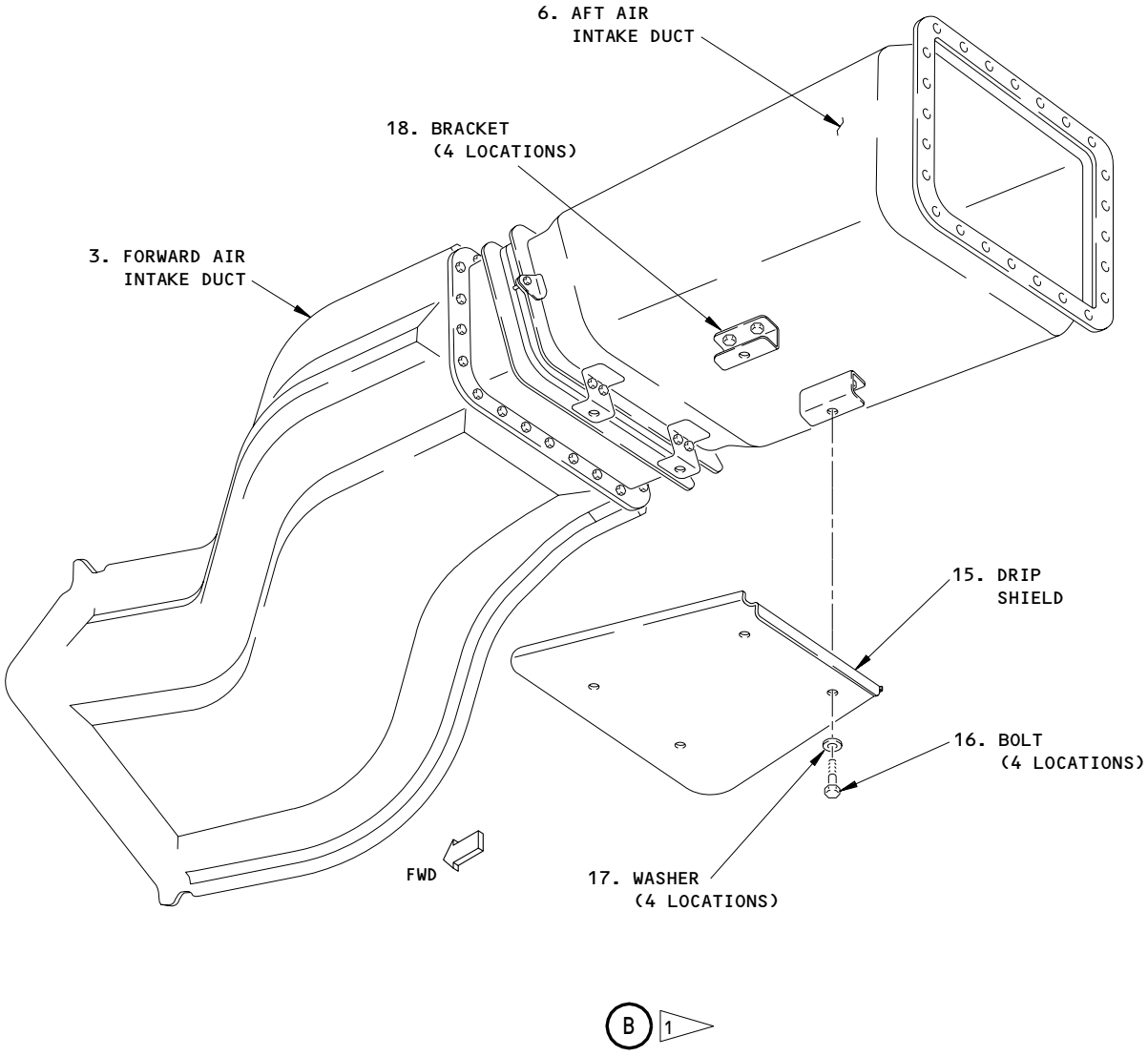
(d) Turn the APU control switch on the P5 overhead panel to OFF.

(e) Look at the air intake door and make sure it is closed.

(f) Remove the electrical power from the airplane if it is not necessary (AMM 24-22-00/201).



Air Intake Duct Installation
Figure 401 (Sheet 1)



Air Intake Duct Installation
Figure 401 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-013-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		1C	11212	008	APR 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	APU DRAIN MAST		NOTE	ALL

ZONES	ACCESS PANELS
315	315AL

MECH	INSP	MPD ITEM NUMBER
		49-16-00-A

VISUALLY CHECK THAT THE DRAIN MAST IN THE APU ACCESS PANEL ALIGNS WITH THE DRAIN TUBES.

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-014-C1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		00400 HRS	NOTE	003SC	012	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	APU MAGNETIC CHIP DETECTORS		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP	MPD ITEM NUMBER

VISUALLY INSPECT THE APU GEARBOX MAGNETIC CHIP DETECTORS. 49-27-04-6A 49-27-04-6A 49-27-04-6B

VISUALLY INSPECT THE APU COMPRESSOR BEARING, GENERATOR SCAVENGE, AND TURBINE BEARING MAGNETIC CHIP DETECTORS. 49-27-04-6B

INTERVAL NOTE: APU HOURS.
AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

1. Magnetic Chip Detector Inspection (Fig. 601)

A. References

(1) AMM 49-11-00/201, Auxiliary Power Unit

(2) AMM 49-11-01/401, Auxiliary Power Unit

(3) AMM 49-27-04/401, Magnetic Chip Detector and Drain Plug

B. Equipment

(1) Compressed Air Source - 30 psig maximum

C. Consumable Materials

(1) B00074 Solvent - Degreasing, MIL-PRF-680 (Supersedes P-D-680)

D. Procedure

(1) Do this procedure: Magnetic Chip Detector Removal (AMM 49-27-04/401).

MECH | INSP

(2) Examine the magnetic chip detector for metal particles.

NOTE: Metal particles on the magnetic chip detector give an indication of internal damage to the engine. If you see metal particles on the magnetic chip detector, examine the engine to find the cause and quantity of damage.

(a) If the magnetic chip detector is free of metal particles, the APU is satisfactory.

(b) A small quantity of metal particles that are not silver color are permitted.

(c) Silver color particles are not permitted.

NOTE: Silver color particles give an indication of damage to the APU.

1) If you find silver color particles, replace the APU (AMM 49-11-01/401).

(d) If you find a medium quantity of metal particles that are not silver color, then do these steps:

WARNING: DO NOT GET THE SOLVENT IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE SOLVENT. PUT ON A PROTECTIVE SPLASH GOGGLE AND GLOVES WHEN YOU USE THE SOLVENT. KEEP THE SOLVENT AWAY FROM SPARKS, HEAT, AND FLAME. THE SOLVENT IS POISONOUS AND FLAMMABLE AND CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

1) Put the magnetic chip detector in the solvent.

2) Dry the magnetic chip detector with the compressed air.

3) Do this procedure: Magnetic Chip Detector Installation (AMM 49-27-04/401).

4) Do this task: APU Starting and Operation (AMM 49-11-00/201).

5) After 15 minutes, do this task: APU Shutdown Procedure (AMM 49-11-00/201).

6) Do this task: Magnetic Chip Detector Removal (AMM 49-27-04/401).

7) Examine the magnetic chip detector for metal particles.

8) More metal particles on the magnetic chip detector are not permitted.

a) If you find more metal particles, replace the APU (AMM 49-11-01/401).

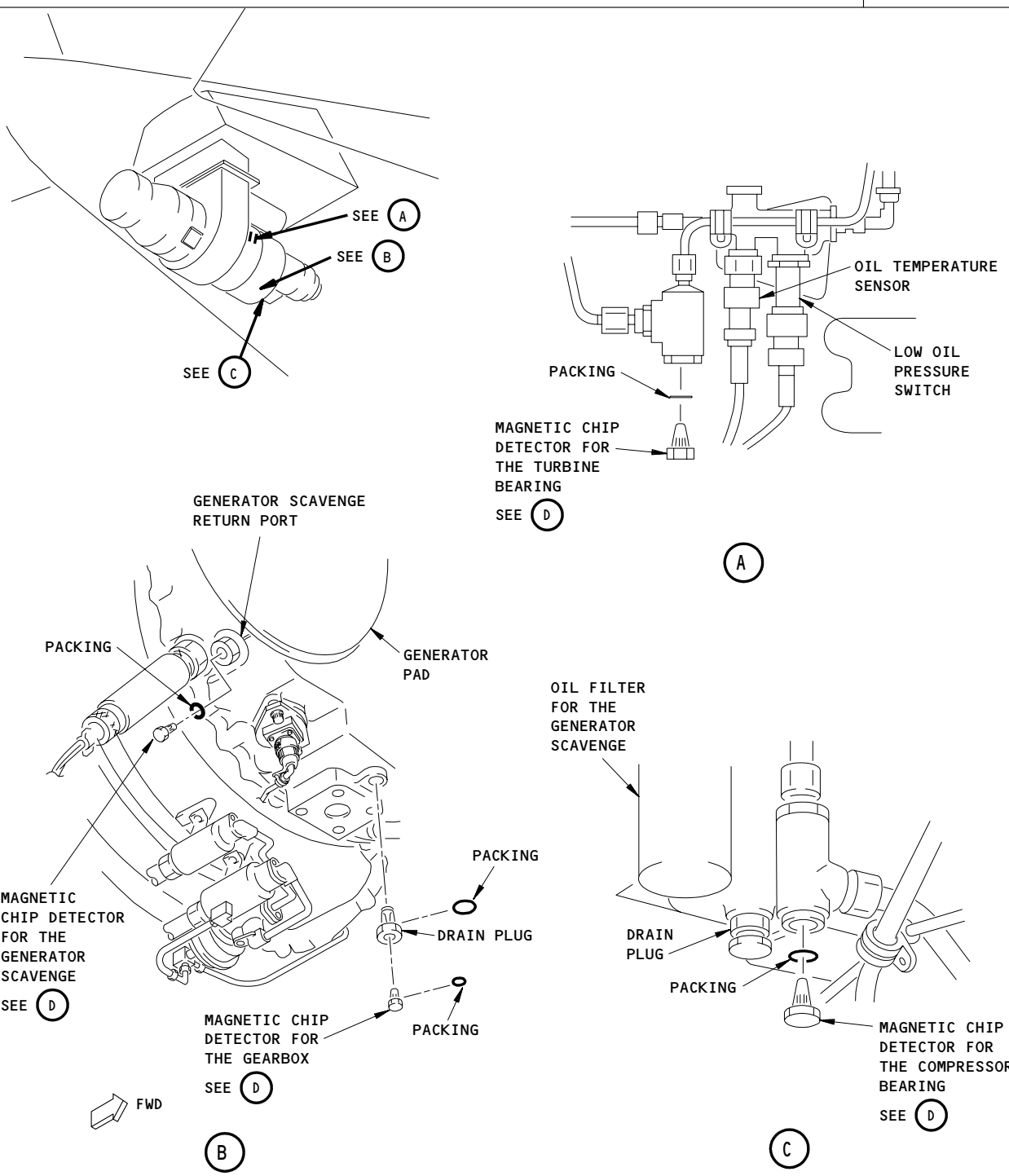
9) If no more metal particles are found, the APU is satisfactory.

(e) A large quantity of metal particles is not permitted.

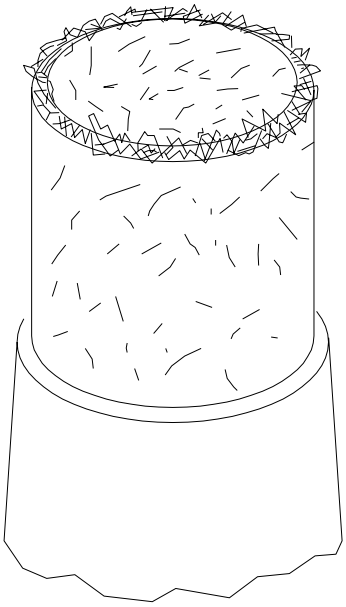
NOTE: A large quantity of metal particles give an indication of internal damage to the engine.

1) If you find a large quantity of metal particles, replace the APU (AMM 49-11-01/401).

(3) Do this procedure: Magnetic Chip Detector Installation (AMM 49-27-04/401).



Magnetic Chip Detector and Drain Plug Inspection
Figure 601 (Sheet 1)



SMALL QUANTITY OF
METAL PARTICLES
D

MEDIUM QUANTITY OF
METAL PARTICLES
D

LARGE QUANTITY OF
METAL PARTICLES
D

Magnetic Chip Detector and Drain Plug Inspection
Figure 601 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-019-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
SHOPS			LIFE LMT NOTE	99XXX	002	AUG 22/99

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU TURBINE DISKS		ALL	ALL

ZONES	ACCESS PANELS

MECH	INSP	MPD ITEM NUMBER

DISCARD TURBINE DISKS. 49-21-00-A

INTERVAL NOTE: AT MANUFACTURER'S SPECIFIED LIFE LIMIT (PER APU MANUAL).

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-021-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		00100 HRS	NOTE	003SC	010	AUG 22/08

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
SERVICE	APU OIL LEVEL		NOTE	ALL

ZONES	ACCESS PANELS
315	315AL

MECH	INSP

MPD ITEM NUMBER

CHECK APU OIL LEVEL AND SERVICE AS REQUIRED. 12-13-04-3A

INTERVAL NOTE: APU HOURS.

NOTE: THIS TASK IS NOT REQUIRED WHEN OPTIONAL OIL LEVEL INDICATION IS INSTALLED.

1. APU - Servicing Procedure

A. General

(1) You open the oil fill cap to fill the APU gearbox with oil. The oil fill cap is located on the right side of the APU gearbox.

(2) The APU gearbox holds 6.2 quarts (5.8 liters).

(3) Use only these types and brands of oil:

(a) Synthetic Base Oil, Type I - MIL-PRF-7808 (-65°F to 130°F, -54°C to 54°C):

1) BP Aero Turbine Oil 15

2) BP Turbo Oil 2389

3) Brayco 880

4) Castrol 3C

5) Castrol 399

(b) Def Stan 91-94, Type I (-65°F to 130°F, -54°C to 54°C):

1) Aeroshell Turbine Oil 390

2) Castrol 325

(c) Synthetic Base Oil, Type II - MIL-PRF-23699 (-40°F to 130°F, -40°C to 54°C):

1) Aeroshell or Royco Turbine Oil 500

2) Aeroshell or Royco Turbine Oil 560

3) BP Turbine Oil 2197

4) Castrol 5000

5) Hatco 3611

6) Mobil Jet Oil 254

7) Mobil Jet Oil II

8) Royco 899

(d) DOD-L-85734 and Def Stan 91-100, Type II (-40°F to 130°F, -40°C to 54°C):

1) Aeroshell Turbine Oil or Royco 555

B. Consumable Materials

(1) D00068 Oil, Aircraft Turbine Engine, Synthetic Base, Type II - MIL-PRF-23699 or
D00071 Oil, Aircraft Turbine Engine, Synthetic Base, Type I - MIL-PRF-7808 or

(2) D00077 Aeroshell Turbine Oil 555, DOD-L-85734 and Def Stan 91-100, Type II or

(3) D00635 Aeroshell Turbine Oil 390, Def Stan 91-94, Type I or

(4) D00636 Castrol 325, Def Stan 91-94, Type I or

(5) D50031 Royco 555, DOD-L-85734 and Def Stan 91-100, Type II

C. References

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

(2) AMM 31-41-00/201, EICAS

(3) AMM 49-11-00/201, Auxiliary Power Unit

MECH | INSP

D. Do a Check of the APU Oil Level.

(1) Use one of these procedures to do a check of the oil level in the APU:

(a) Use the EICAS display to do a check of the oil level.

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

2) Look for the APU OIL QTY message on the EICAS STATUS display.

3) If the APU OIL QTY message is on EICAS, fill the APU oil.

(b) ON AN OIL SIGHT GAGE WITHOUT A FULL MARK FOR THE APU ON; Use the sight gage when the APU is off to do a check of the oil level.

1) Open the left APU access door, 315AL, and right APU access door, 316AR:

a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

d) Open the right access door to the fully open position and manually lock the hold-open strut.

2) Look at the oil level in the sight gage.

3) If the oil level is below the ADD on the sight gage for the APU OFF, fill the APU oil.

WARNING: DO NOT REMOVE THE OIL FILL CAP WHEN THE APU IS IN OPERATION. IF THE OIL FILL CAP IS REMOVED WHEN THE APU OPERATES, INJURIES TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

(c) ON AN OIL SIGHT GAGE WITH A FULL MARK FOR THE APU ON;
Use the sight gage when the APU operates to do a check of the oil level.

NOTE: You can only do a check of the APU oil level when the engine operates if the sight gage has a mark for the APU ON.

1) Open the left APU access door, 315AL, and right APU access door, 316AR:

a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

d) Open the right access door to the fully open position and manually lock the hold-open strut.

2) Look at the oil level in the sight gage.

3) If the oil level is below the FULL mark for the APU ON, do these steps:

a) Use the APU Operation procedure to do the APU shutdown (AMM 49-11-00/201).

b) Fill the APU oil.

E. Fill the APU Oil (Fig. 301).

(1) Make sure the APU control switch is in the OFF position and attach a DO-NOT-OPERATE tag.

(2) Open this circuit breaker on the overhead panel P11 and attach a DO-NOT-CLOSE tag:

(a) 11B35, APU ALTN CONT

(3) Open this circuit breaker on the P49 APU Auxiliary Panel and attach a DO-NOT-CLOSE tag:

(a) 49C2, APU PRIME CONT

(4) If it is necessary, open the left APU access door, 315AL, and right APU access door, 316AR:

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

MECH | INSP

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

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

WARNING: DO NOT LET HOT OIL GET ON YOU. PUT ON PROTECTIVE CLOTHES, GOGGLES, AND EQUIPMENT OR LET THE APU BECOME COOL. HOT OIL CAN BURN YOU.

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

CAUTION: DO NOT LET OIL GET ON THE APU OR OTHER COMPONENTS. IMMEDIATELY CLEAN THE OIL WHEN IT FALLS ON THEM. OIL CAN CAUSE DAMAGE TO PAINT AND RUBBER.

(5) Do these steps to fill the APU gearbox with oil:

(a) Clean the oil fill cap before it is removed.

WARNING: DO NOT REMOVE THE OIL FILL CAP IF THE APU IS HOT, AND THE OIL LEVEL IS AT OR ABOVE THE FULL MARK. THE HOT OIL CAN CAUSE INJURY.

(b) Remove the oil fill cap.

MECH | INSP

CAUTION: DO NOT MIX TWO TYPES OF OIL (MIL-PRF-7808 AND MIL-PRF-23699) WHEN YOU ADD THE OIL IN THE APU. IT IS PERMITTED TO MIX DIFFERENT BRANDS OF OIL WITH THE SAME TYPE OF OIL WHEN YOU ADD THE OIL IN THE APU. A MIXTURE OF THE TWO TYPES OF OIL IN THE APU CAN CAUSE DAMAGE TO THE APU.

(c) Slowly add oil until the oil flows into the scupper drain.

NOTE: It is recommended that you use Type I oil if the APU will be started in very cold conditions below -40°F (-40°C).

(d) Check the packings on the oil fill cap, if you find deterioration or damage, do these steps:

1) Replace the packing on the cap.

2) Measure and record dimension A.

3) Remove the chain from the handle assembly.

4) Remove the nut, stop, spring and cap from the handle.

5) Replace the packing on the handle.

6) Install the cap, spring, stop and nut on the handle and tighten the nut until dimension A you recorded in the previous steps is obtained.

7) Install the chain onto the cap assembly.

(e) Install the oil fill cap and make sure the cap is tight.

F. Fill the APU Oil (Pressure Fill Method) (Fig. 301)

(1) Make sure the APU control switch is in the OFF position and attach a DO-NOT-OPERATE tag.

(2) Open this circuit on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:

(a) 11B35, APU ALTN CONT

MECH | INSP

(3) Open this circuit breaker on the P49 APU Auxiliary Panel and attach a DO-NOT-CLOSE tag:

(a) 49C2, APU PRIME CONT

(4) If it is necessary, open the left APU access door, 315AL, and right APU access door, 316AR:

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

(5) Remove the caps from the pressure fill fittings.

(6) Clean the pressure fill fittings.

CAUTION: DO NOT MIX TWO TYPES OF OIL (MIL-PRF-7808 AND MIL-PRF-23699) WHEN YOU ADD THE OIL IN THE APU. IT IS PERMITTED TO MIX DIFFERENT BRANDS OF OIL WITH THE SAME TYPE OF OIL WHEN YOU ADD THE OIL IN THE APU. A MIXTURE OF THE TWO TYPES OF OIL IN THE APU CAN CAUSE DAMAGE TO THE APU.

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

DO NOT PUT TOO MUCH OIL IN THE RESERVOIR OR YOU CAN CAUSE THE APU TO HAVE A SHUTDOWN FROM LOW OIL PRESSURE.

(7) Connect the supply and the overflow hoses to the oil fill fittings.

(8) Slowly add oil until you can see oil in the overflow hose.

NOTE: It is recommended that you use Type I oil if the APU will be started in very cold conditions below -40°F (-40°C).

(9) When the oil from the overflow hose is at a slow drip, remove the pressure fill hoses.

(10) Install the caps on the pressure fill fittings.

G. Put the Airplane Back to its Usual Condition

(1) If the APU OIL QTY message is shown on EICAS, do the Maintenance Message Erase Procedure (AMM 31-41-00/201).

(2) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Manually unlock the two hold-open struts from the two APU access doors.

NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

MECH | INSP

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.

(3) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P49 APU Auxiliary panel:

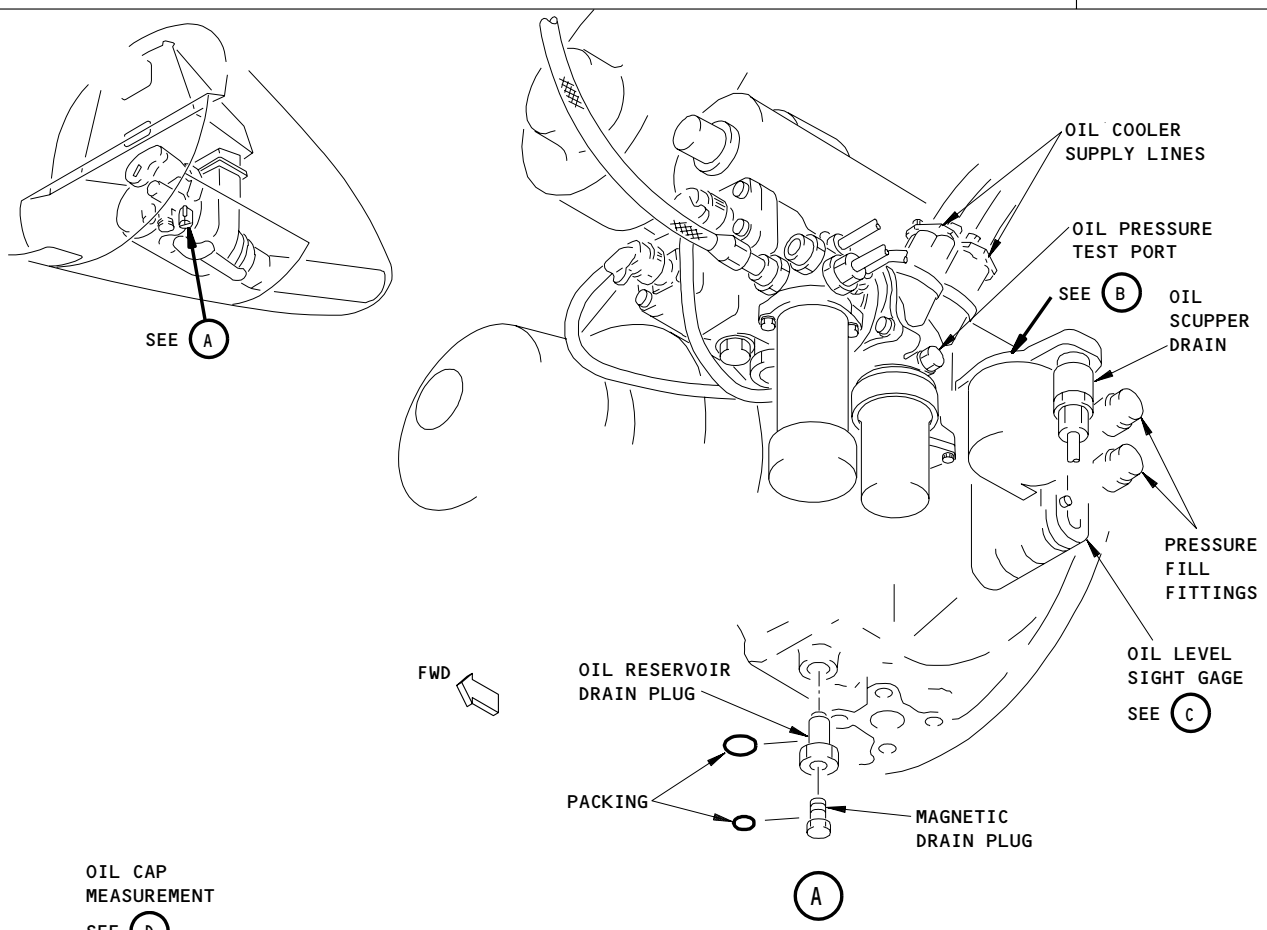
(a) 49C2, APU PRIME CONT

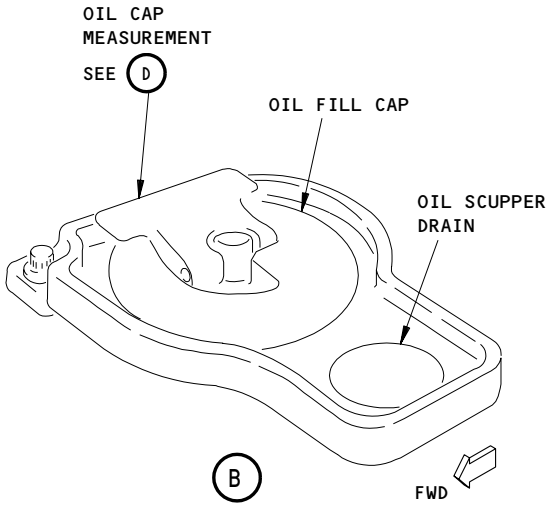
(4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the overhead panel P11:

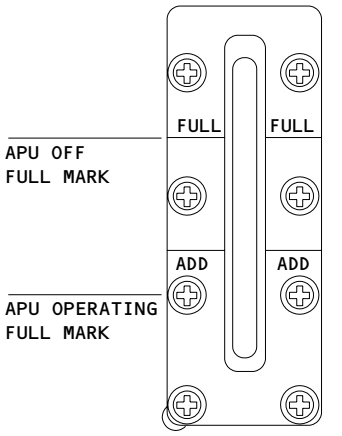
(a) 11B35, APU ALTN CONT

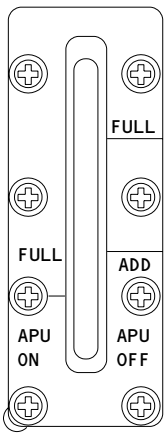
(5) Remove the DO-NOT-OPERATE tag from the APU control switch.

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



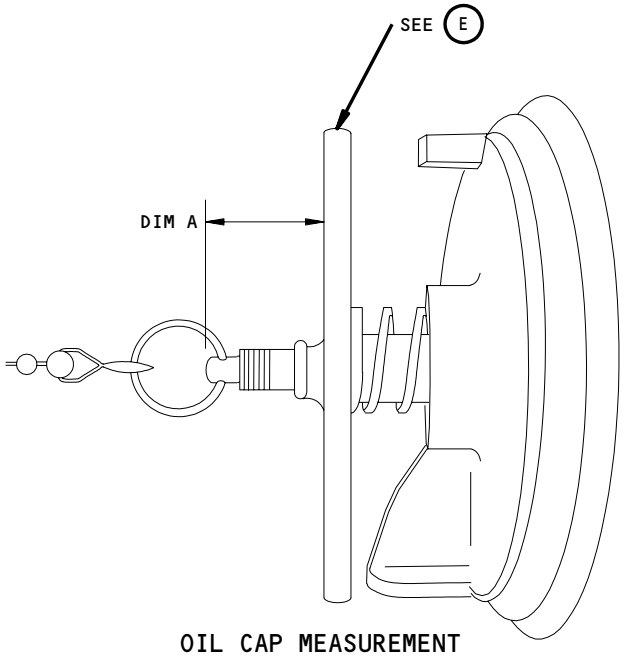




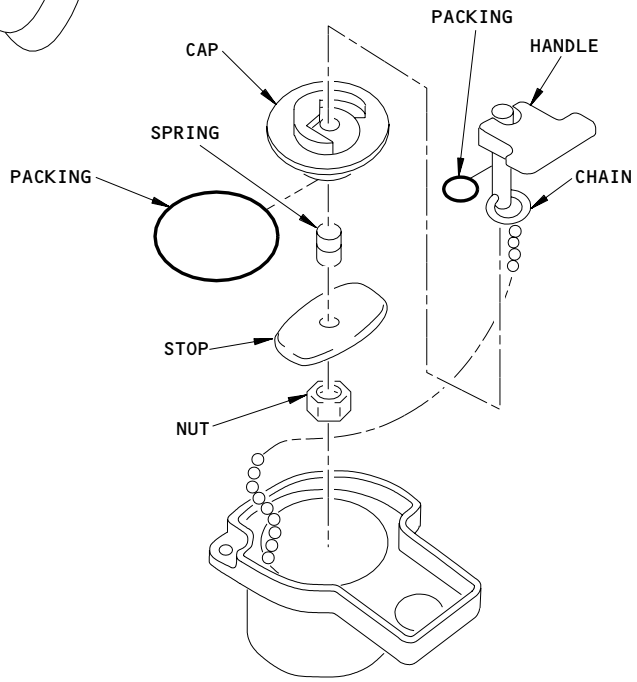


1 ALLIEDSIGNAL APUs PRE-SB 495887
2 ALLIEDSIGNAL APUs POST-SB 495887

APU Oil Servicing
Figure 301 (Sheet 1)



OIL CAP MEASUREMENT
D



E

APU Oil Servicing
Figure 301 (Sheet 2)

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-023-C1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
AIRPL	APU COMPT		01200 HRS	NOTE	102XX	003	AUG 22/03

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU OIL PRESS & GEN SCAVENGE FILTERS		NOTE	ALL

ZONES	ACCESS PANELS
315	315AL

MECH	INSP	MPD ITEM NUMBER

REPLACE OIL PRESSURE FILTER ELEMENT & COVER PACKING. 49-27-03-4A 49-27-03-4A . 49-27-03-4B

REPLACE GENERATOR SCAVENGE FILTER ELEMENT & COVER PACKING. 49-27-03-4B

INTERVAL NOTE: APU HOURS.
AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

1. Lube and Generator Scavenge Filter Elements Removal (Fig. 401)

A. Procedure

(1) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

(4) Remove the lube and the scavenge filter elements:

(a) Remove the lockwire from the scavenge filter housing (2) and the lube filter housing (9).

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

(b) Remove the scavenge filter housing (2) and the lube filter housing (9).

(c) Remove the packings (7 and 10) from the scavenge filter housing (2) and the lube filter housing (9).

1) Discard the packings (7 and 10).

(d) Remove the filter elements (4 and 8) and the packings (5 and 6) from the scavenge filter housing (2) and the lube filter housing (9).

(e) Do the inspection of the filter elements (4 and 8). Do this task: Lube and Generator Scavenge Filter Elements Inspection (AMM 49-27-03/601).

NOTE: This will give you an indication of the condition of the generator.

(f) Discard the packings (5 and 6) and the filter elements (4 and 8).

2. Lube and Generator Scavenge Filter Elements Installation (Fig. 401)

A. References

(1) AMM 12-13-04/301, APU - Servicing (Fill the Oil)

(2) AMM 49-11-00/201, Auxiliary Power Unit

B. Consumable Materials

(1) D50056 Oil, Aircraft Turbine Engine (AMM 12-13-04/301) or

(2) D00341 Lubricant - Santovac 5

C. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	4	Oil Filter Element Assembly	49-27-03	01	80
	5	Packing			85
	6	Packing	49-27-00	01	175
	7	Packing			170
	8	Oil Filter Element Assembly			172
	10	Packing	49-27-03	01	75

D. Procedure

(1) Install the lube and the scavenge filter elements:

MECH | INSP

(a) Lubricate the new packings (5, 6, 7, and 10) with a light coat of lubricant or oil.

(b) Install the packings (5 and 6) on the filter elements (4 and 8).

(c) Momentarily put the filter elements (4 and 8) in a container of oil.

(d) Install the filter elements (4 and 8) in the scavenge filter housing (2) and the lube filter housing (9).

(e) Install the packings (7 and 10) on the lube filter housing (9) and the scavenge filter housing (2).

(f) Install the scavenge filter housing (2) and the lube filter housing (9) on the APU.

1) Tighten the filter housings (2 and 9) with your hands.

2) Install lockwires on the scavenge filter housing (2) and the lube filter housing (9).

(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(b) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(3) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 overhead panel.

(4) Do the installation test for the lube and generator scavenge filter elements:

(a) Do this task: APU Starting and Operation (AMM 49-11-00/201).

(b) Operate the APU for a minimum of five minutes.

(c) During the APU operation, examine the lube and generator scavenge filter housings for signs of oil leakage.

MECH | INSP

(d) If you find oil leakage, then do these steps to repair the leakage:

1) Do this task: APU Shutdown Procedure (AMM 49-11-00/201).

2) Attach a DO-NOT-OPERATE tag to the APU control switch on the P5 overhead panel.

3) Repair the cause of the oil leakage.

4) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 overhead panel.

5) Do this task: APU Starting and Operation (AMM 49-11-00/201).

6) During the APU operation, examine the lube and generator scavenge filter housings for signs of oil leakage.

7) If you find oil leakage, do the leakage repair again.

(e) If it is not necessary to do other tasks, do this task: APU Shutdown Procedure (AMM 49-11-00/201).

(5) Make sure the APU oil system is full. To check the oil level, do this task: APU Oil Level Inspection (AMM 12-13-04/301).

E. Put the Airplane Back to its Usual Condition

(1) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Manually unlock the two hold-open struts from the two APU access doors.

NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

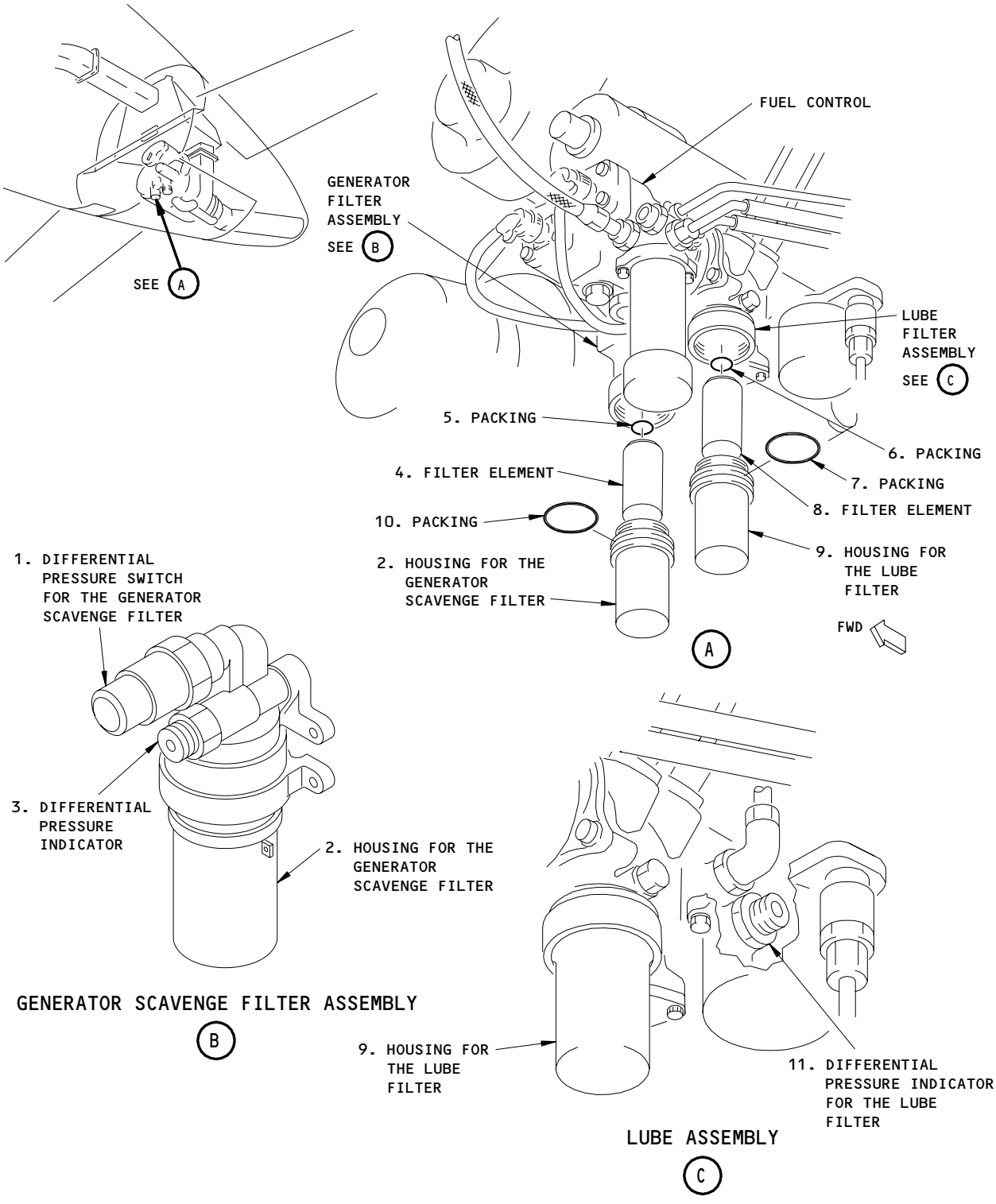
(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

MECH	INSP

(e) Close the four latches on the right access door.



Lube and Generator Scavenge Filter Elements Installation
Figure 401

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-024-C1
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		00400 HRS	NOTE	003SC	007	AUG 22/01

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	APU/GEN FILTER DIFF PRESS INDICATORS		NOTE	ALL

ZONES	ACCESS PANELS
315	315AL

MECH	INSP	MPD ITEM NUMBER

VISUALLY CHECK THE GENERATOR SCAVENGE FILTER DIFFERENTIAL PRESSURE INDICATOR FOR ACTIVATION. 49-27-03-6A 49-27-03-6A 49-27-03-6B

VISUALLY CHECK THE APU OIL PRESSURE FILTER DIFFERENTIAL PRESSURE INDICATOR FOR ACTIVATION. 49-27-03-6B

INTERVAL NOTE: APU HOURS.
AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

1. Filter Elements Differential Pressure Indicators Check

A. References

(1) AMM 49-27-07/401, Lube Filter Differential Pressure Indicator

(2) AMM 49-27-16/401, Generator Filter Differential Pressure Indicator

B. Procedure

(1) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

MECH | INSP

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

(4) Do the visual inspection of the differential pressure indicators:

(a) Look at the differential pressure indicator (1) on the generator scavenge filter assembly.

1) If the indicator (1) is pushed out, do an inspection of the filter element for the generator scavenge filter. Do this task: Lube and Generator Scavenge Filter Elements Inspection.

NOTE: This is an indication that the differential pressure is more than the limit and the filter element has blockage.

MECH	INSP

2) If the filter element has blockage, replace it. Do these tasks: Lube and Generator Scavenge Filter Elements Removal and Lube and Generator Scavenge Filter Elements Installation (AMM 49-27-03/401).

3) If the filter element does not have blockage, push the differential pressure indicator (1) in to set it.

4) If this is a continuous problem with this indicator, replace the differential pressure indicator (1) (AMM 49-27-16/401).

(b) Look at the differential pressure indicator (2) on the Lube filter assembly.

1) If the indicator (2) is pushed out, do an inspection of the pressure filter element. Do this task: Lube and Generator Scavenge Filter Elements Inspection.

2) If the filter element has blockage, replace it. Do these tasks: Lube and Generator Scavenge Filter Elements Removal and Lube and Generator Scavenge Filter Elements Installation (AMM 49-27-03/401).

3) If the pressure filter element does not have blockage, push the differential pressure indicator (2) in to set it.

4) If this a continuous problem with this indicator, replace the differential pressure indicator (2) (AMM 49-27-07/401).

C. Put the Airplane Back to its Usual Condition

(1) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(b) Lift the left access door until the two APU access doors are approximately aligned.

(c) Close the two APU access doors.

(d) Close the four latches on the right access door.

(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

MECH	INSP

(a) P49 APU Auxiliary Panel

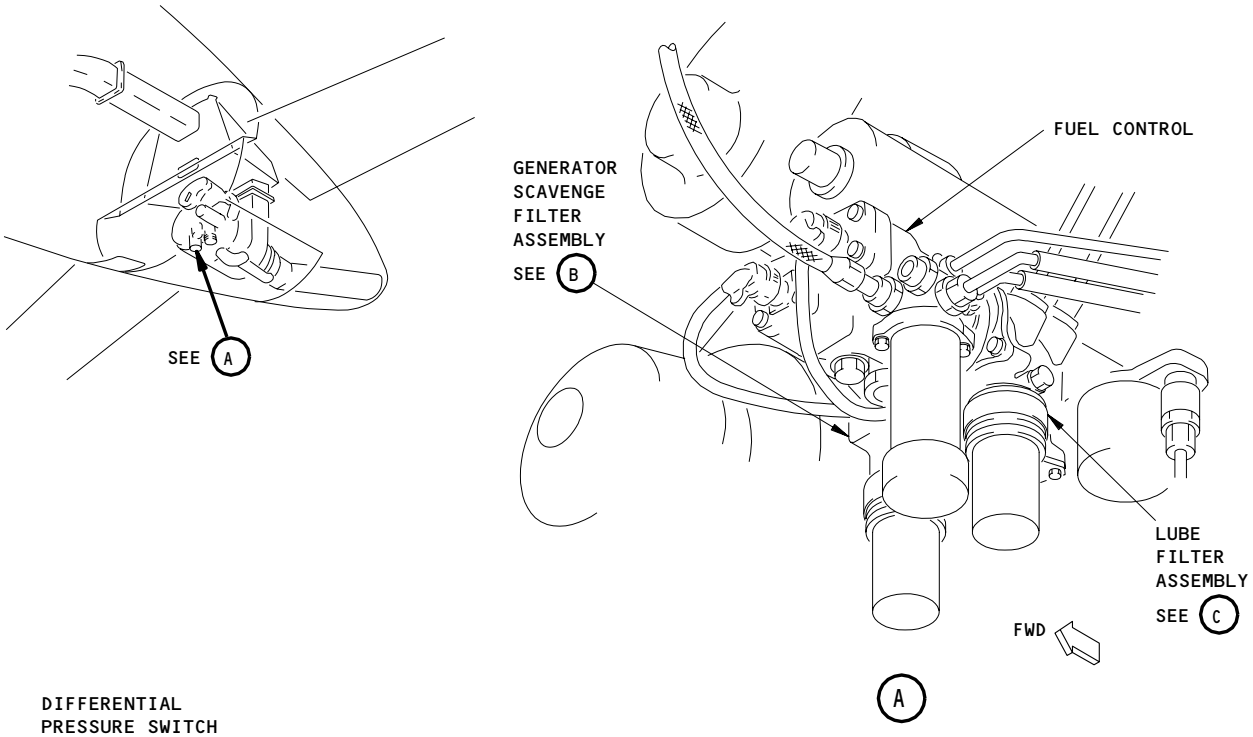
1) 49C2, APU PRIME CONT

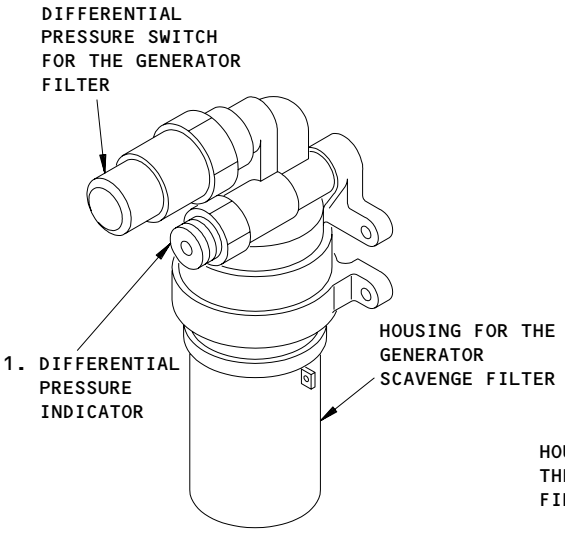
2) 49C3, APU START

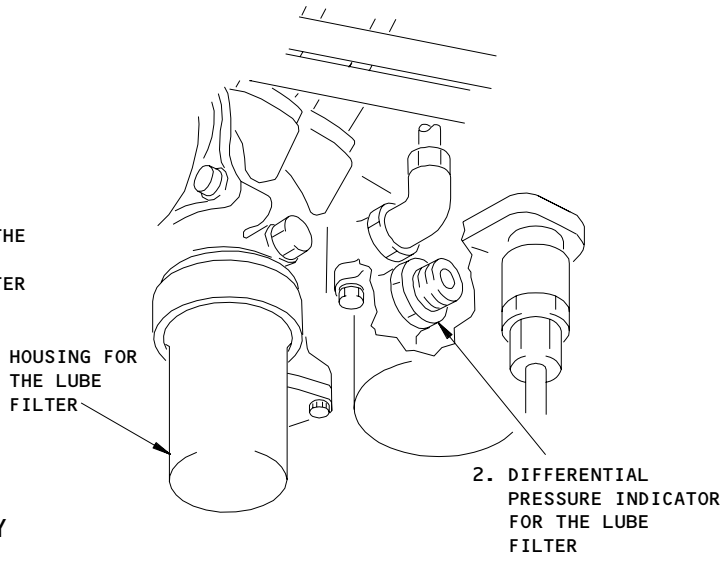
(b) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(3) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 overhead panel.







Lube and Generator Scavenge Filter Elements Inspection
Figure 601

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-028-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
SHOPS			SHOP VST NOTE	99XXX	002	AUG 22/99

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	GEARBOX SHUTOFF VALVE		NOTE	ALL

ZONES	ACCESS PANELS

MECH	INSP	MPD ITEM NUMBER

FUNCTIONAL CHECK OF GEARBOX SHUTOFF VALVE. 49-27-00-A

INTERVAL NOTE: AT APU SHOP VISIT IF TIME SINCE LAST SHOP VISIT (TSLSV) IS GREATER THAN OR EQUAL TO 1,000 APU HOURS.

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-029-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
SHOPS			SHOP VST NOTE	99XXX	002	AUG 22/99

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	GEARBOX PRESSURE REGULATING VALVE		NOTE	ALL

ZONES	ACCESS PANELS

MECH	INSP	MPD ITEM NUMBER

FUNCTIONAL CHECK OF GEARBOX PRESSURE REGULATING VALVE. 49-27-00-B

INTERVAL NOTE: AT APU SHOP VISIT IF TIME SINCE LAST SHOP VISIT (TSLSV) IS GREATER THAN OR EQUAL TO 1,000 APU HOURS.

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

EFFECTIVITY

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-032-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		00400 HRS	NOTE	003SC	012	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	APU LP FUEL FILTER DIFF PRESS IND		NOTE	ALL

ZONES	ACCESS PANELS
315	315AL

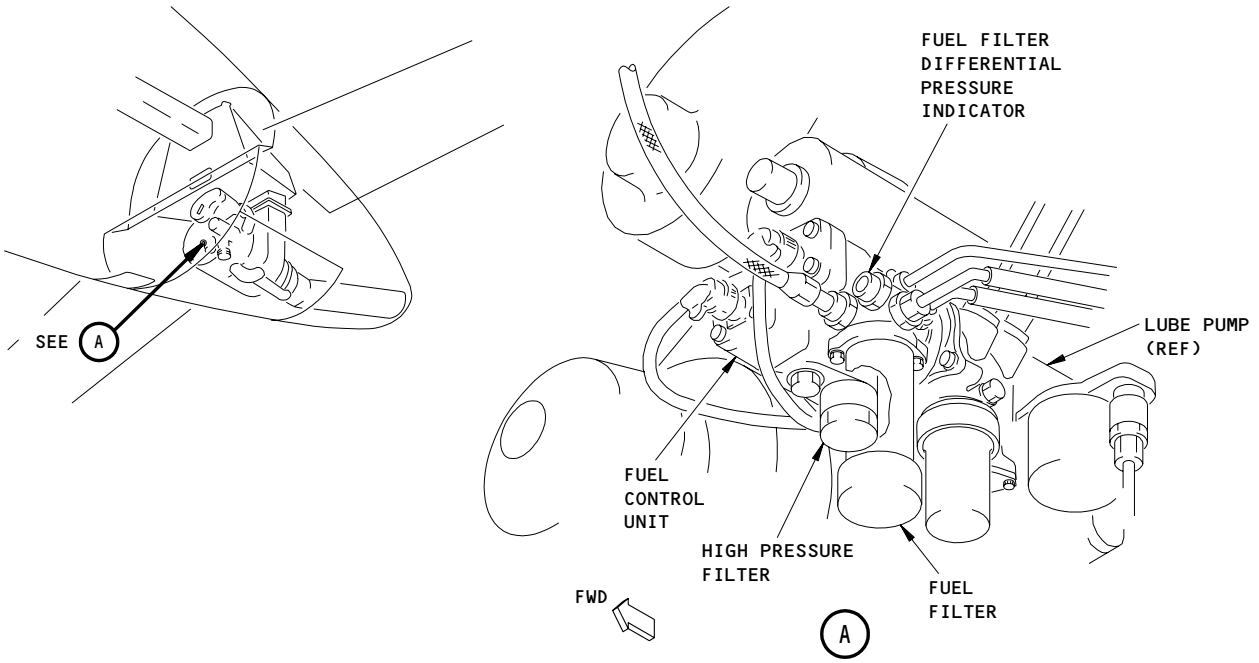
MECH	INSP	MPD ITEM NUMBER
		49-31-00-A

VISUALLY INSPECT THE APU LOW PRESSURE FUEL FILTER DIFFERENTIAL PRESSURE INDICATOR. IF INDICATOR IS POPPED, CHANGE FILTER.

INTERVAL NOTE: APU HOURS.

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

SEE FIG 201.



APU Fuel System Contamination Check
Figure 201

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-049-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
AIRPL	AFT CARGO		00400 HRS	NOTE	003SC	003	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	APU CONTROL UNIT (ECU)		NOTE	ALL

ZONES	ACCESS PANELS
154	822

MECH	INSP	MPD ITEM NUMBER

PERFORM APU CONTROL UNIT (ECU) SYSTEM SELF TEST. 49-61-05-2A

INTERVAL NOTE: APU HOURS.

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

1. APU Control Unit - Self Test

A. References

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

(2) FIM 49-11-00/101, Auxiliary Power Unit

B. Procedure

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

(2) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:

(a) 11B35, APU ALTN CONT

(3) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag.

(4) Make sure the APU RPM is less than 7%.

(5) Put the TEST switch on the APU control unit in the LAMP position and release the switch.

(a) Make sure all of the lights come on, column by column.

(b) If all of the lights do not come on, replace the APU control unit.

WARNING: DO NOT DO THE ECU BITE TEST AND MAINTENANCE ON THE IGNITION SYSTEM AT THE SAME TIME. THE IGNITER LEAD ENERGIZES DURING THE SELF-TEST AND CAN CAUSE AN INJURY.

(6) Put the TEST switch to the SELF position and release the switch.

NOTE: This will do a test of the software in the APU control unit and of the APU hardware.

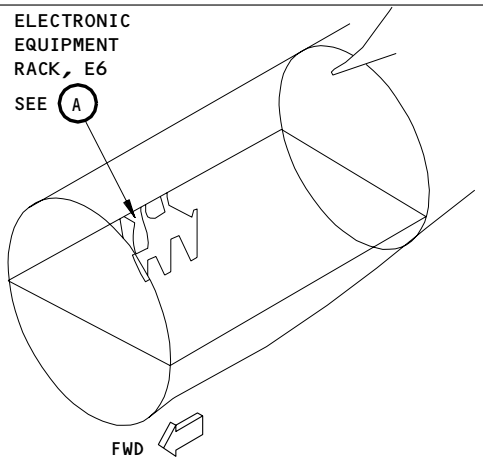
(a) The WAIT light will come on during the test.

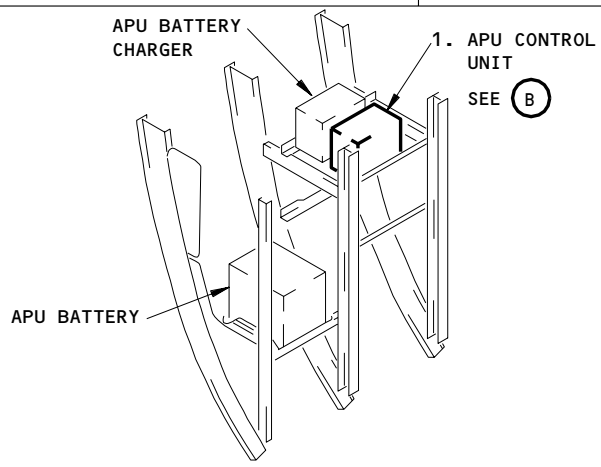
(b) The TEST OK light will come on if the self-test does not find defective units.

(c) Make a record of the FAULTY LRU lights that come on.

NOTE: The FAULTY LRU lights will come on one at a time for 4 seconds (from the left to the right and from the top to the bottom of the control unit).

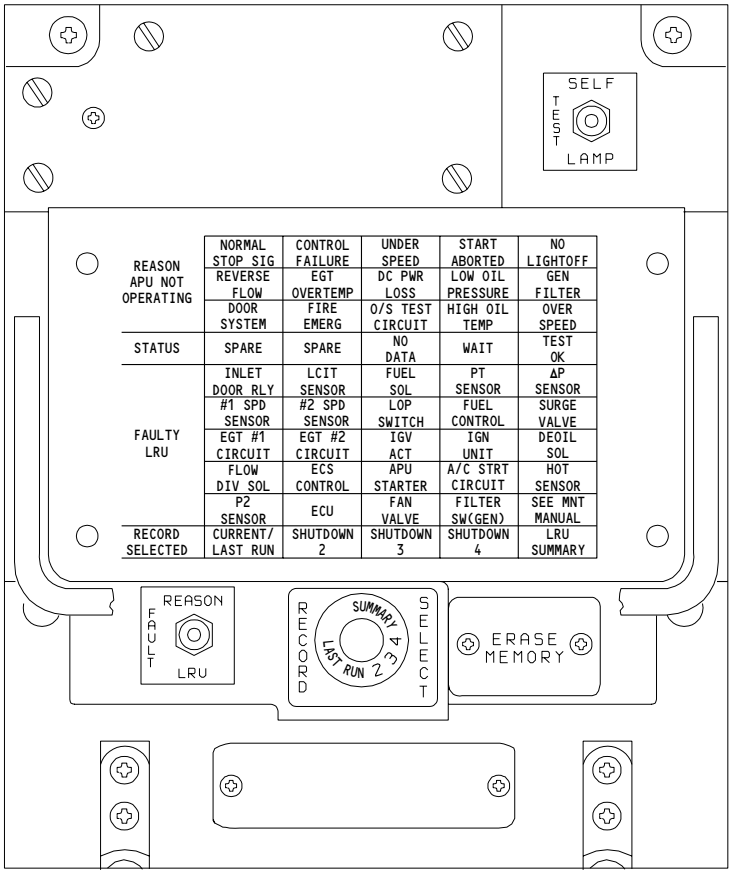
(d) If FAULTY LRU lights came on, correct the failure (FIM 49-11-00, Fig. 103).





ELECTRONIC EQUIPMENT RACK, E6

A



APU CONTROL UNIT
(FRONT PANEL)

B

APU BITE Procedure
Figure 201

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-051-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN			SHOP VST NOTE	99XXX	002	AUG 22/99

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
FUNCTIONAL	GENERATOR OIL FLTR DIFF PRESS SWITCH		NOTE	ALL

ZONES	ACCESS PANELS

MECH	INSP

MPD ITEM NUMBER

FUNCTIONAL CHECK OF GENERATOR OIL FILTER DIFFERENTIAL PRESSURE SWITCH. 49-27-00-C

INTERVAL NOTE: AT SHOP VISIT IF TIME SINCE LAST SHOP VISIT (TSLSV) IS GREATER THAN OR EQUAL TO 1,000 APU HOURS.

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

EFFECTIVITY

4
2
3
5

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-060-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		00500 HRS	NOTE	101XX	003	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
REPLACE	APU SURGE VALVE FILTER ELEMENT		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP	MPD ITEM NUMBER

REPLACE THE APU SURGE VALVE FILTER ELEMENT WITH A SHOP CLEANED UNIT. 49-53-06-2A

INTERVAL NOTE: APU HOURS.

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

1. Surge Valve Filter Element Removal (Fig. 201)

A. Procedure

(1) Make sure the APU control switch on the P5 panel is Off and attach a DO-NOT-OPERATE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

(4) Remove the filter element for the surge valve:

(a) Disconnect the compressor discharge tube (3) from the reducer (4).

(b) Remove the reducer (4) and the packing (2) from the filter element housing (6).

1) Discard the packing (2).

(c) Remove the spring (5) and the filter element (1) from the filter element housing (6).

2. Surge Valve Filter Element Installation (Fig. 201)

A. Consumable Materials

(1) D00006 Compound - Pure Nickel Special - Never Seez NSBT-8N (Recommended)

(2) D00667 Compound, High Temperature - Fel-Pro C5

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
201	1 2	Filter Element Packing	49-53-06	01	75 65

C. References

(1) AMM 49-11-00/201, Auxiliary Power Unit

D. Procedure

(1) Install the filter element for the surge control valve:

(a) Lubricate the threads on the filter housing (6) and the reducer (4) with the antiseize compound.

CAUTION: MAKE SURE YOU INSTALL THE OPEN END OF THE FILTER ELEMENT INTO THE HOUSING BEFORE YOU INSTALL THE SPRING. THE SPRING MUST TOUCH THE REDUCER WHEN THE FILTER ASSEMBLY IS INSTALLED. IF YOU DO NOT INSTALL THE FILTER CORRECTLY, A BLOCKAGE CAN OCCUR THAT CAN PREVENT SURGE VALVE OPERATION.

(b) Install the filter element (1), the spring (5), a new packing (2), and the reducer (4) in the filter element housing (6).

1) Make sure the open end of the filter (1) element goes into the filter element housing (6).

(c) Connect the compressor discharge tube (3) to the reducer (4).

(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(b) P11 Overhead Panel

MECH | INSP

1) 11B35, APU ALTN CONT

(3) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 panel.

(4) Do a leakage check of the filter element installation:

(a) Do this task: APU Starting and Operation (AMM 49-11-00/201).

(b) Operate the APU with a pneumatic load (AMM 36-00-00/201).

(c) Make sure the duct pressure increases.

(d) During the APU operation, examine the filter housing for air leakage.

(e) Do this task: APU Shutdown Procedure (AMM 49-11-00/201).

(f) If the duct pressure did not increase, check the filter element for correct installation.

(g) If you found air leakage, repair the cause of it.

(5) Close the left APU access door, 315AL, and right APU access door, 316AR:

(a) Manually unlock the two hold-open struts from the two APU access doors.

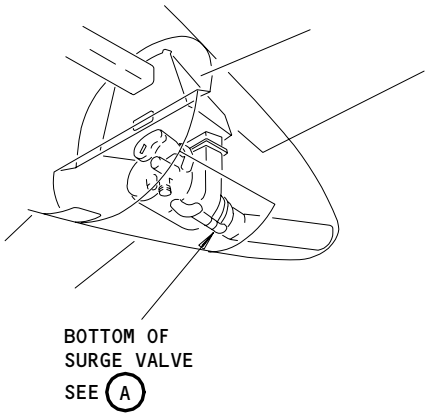
NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

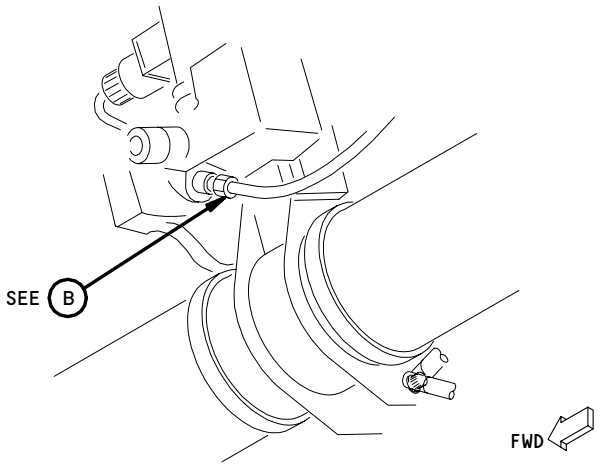
(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

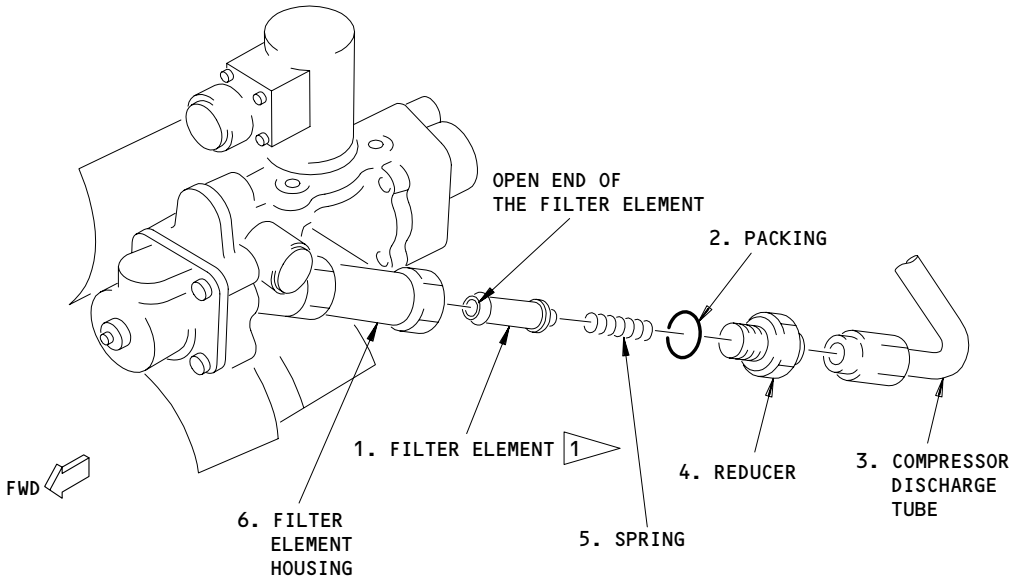
(e) Close the four latches on the right access door.





BOTTOM OF SURGE VALVE

A



B

1 SURGE VALVES WITH A SMALL FILTER ELEMENT HOUSING MUST USE A SMALL FILTER ELEMENT. SURGE VALVES WITH A LARGE FILTER ELEMENT HOUSING MUST USE A LARGE FILTER ELEMENT.

Surge Valve Filter Element Installation
Figure 201

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-061-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		2A	10202	012	APR 22/03

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	APU FIREWALL		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP	MPD ITEM NUMBER
		49-27-09-A

VISUALLY INSPECT THE APU FIREWALL FOR THE PRESENCE OF OIL. (POTENTIAL OIL COOLER AIR-SIDE CONTAMINATION IS EVIDENT BY THE PRESENCE OF OIL.)

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

IF THE PRESENCE OF OIL IS FOUND, REFER TO THE REF. AMM 49-51-03/401 REPLACE THE COOLING FAN, AND REF. AMM 49-27-09/401, REPLACE OR CLEAN THE OIL COOLER, AS IT IS NECESSARY. THE MAIN CAUSE OF THIS OIL COOLER CONTAMINATION, (AIR SIDE) IS USUALLY CAUSED BY OIL LEAKAGE FROM THE COOLING FAN SHAFT SEAL. IT IS THE PRESENCE OF OIL ON THE FIREWALL THAT CAN ALERT AIRLINE MAINTENANCE PERSONNEL TO THE POTENTIAL FOR OIL COOLER AIR-SIDE CONTAMINATION FROM A LEAKING APU COOLING FAN SHAFT SEAL.

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-062-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL		PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		00400 HRS	NOTE	003SC	012	DEC 22/07

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	APU STARTER MOTOR BRUSH WEAR		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH	INSP	MPD ITEM NUMBER

VISUALLY INSPECT THE APU STARTER MOTOR BRUSHES FOR WEAR. 49-41-01-6A

INTERVAL NOTE: APU HOURS.

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

1. Starter Motor Brush Inspection (Fig. 601)

A. References

(1) AMM 49-41-01/401, Starter Motor

B. Equipment

(1) Air Source - Regulated, Dry Filtered, Compressed (Maximum of 20 psig) (138 kPa) (commercially available)

C. Consumable Materials

(1) B50051 Cleaner, Alkaline - Arrow 198 (recommended) or

(2) B50052 Cleaner, Alkaline - Ridoline 909 (alternative) or

(3) B50053 Cleaner, Alkaline - Daraclean 212 (alternative) or

(4) B50054 Cleaner, Alkaline - Daraclean 282 (alternative)

(5) G00034 Cloth, Process Cleaning Absorbent Wiper (Cheesecloth, Gauze) - BMS15-5

D. Prepare for the Inspection

(1) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-OPERATE tag:

MECH | INSP

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

E. Procedure

MECH | INSP

(1) APU WITH THE -5 AND -6 STARTER MOTORS;
Examine the brush wear indicator on the starter motor.

NOTE: The length of the brush wear indicator decreases as the brushes become worn. If the carbon dust does not permit you to see the indicator peg, clean or replace the indicator window.

(a) If you cannot see the brush wear indicator, replace the starter motor (AMM 49-41-01/401).

(2) APU WITH THE -7 STARTER MOTORS;
Examine the brush wear indicator on the starter motor.

NOTE: The brush wear indicator is an indicator button that retracts into the cap of the starter motor when the brushes become worn.

(a) If the top of the indicator button on the brush wear indicator is flush or is flat with the top of the cap on the starter motor, replace the starter motor (AMM 49-41-01/401).

(3) APU WITH THE -8 STARTER MOTORS;
Examine the brush wear indicator on the starter motor.

NOTE: The brush wear indicator is an indicator button that retracts into the cap of the starter motor when the brushes become worn. The location of the brush wear indicator and the cap of the starter motor is in the protective guard. There are two side windows on the protective guard to see the position of the brush wear indicator and the top of the cap. If grease, dirt or other contamination does not permit you to see the brush wear indicator, clean the area with an alkaline cleaner, water, cloth and air source.

(a) If the top of the indicator button on the brush wear indicator is flush or is flat with the top of the cap on the starter motor, replace the starter motor (AMM 49-41-01/401).

(4) Close the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) Manually unlock the two hold-open struts from the two APU access doors.

NOTE: You turn the center knob counterclockwise and pull the knob up to manually unlock the hold-open strut.

(b) Lift the right access door until the detent latch engages and holds the access door on the fuselage frame.

(c) Lift the left access door until the two APU access doors are approximately aligned.

(d) Close the two APU access doors.

(e) Close the four latches on the right access door.

(5) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

(a) P49 APU Auxiliary Panel

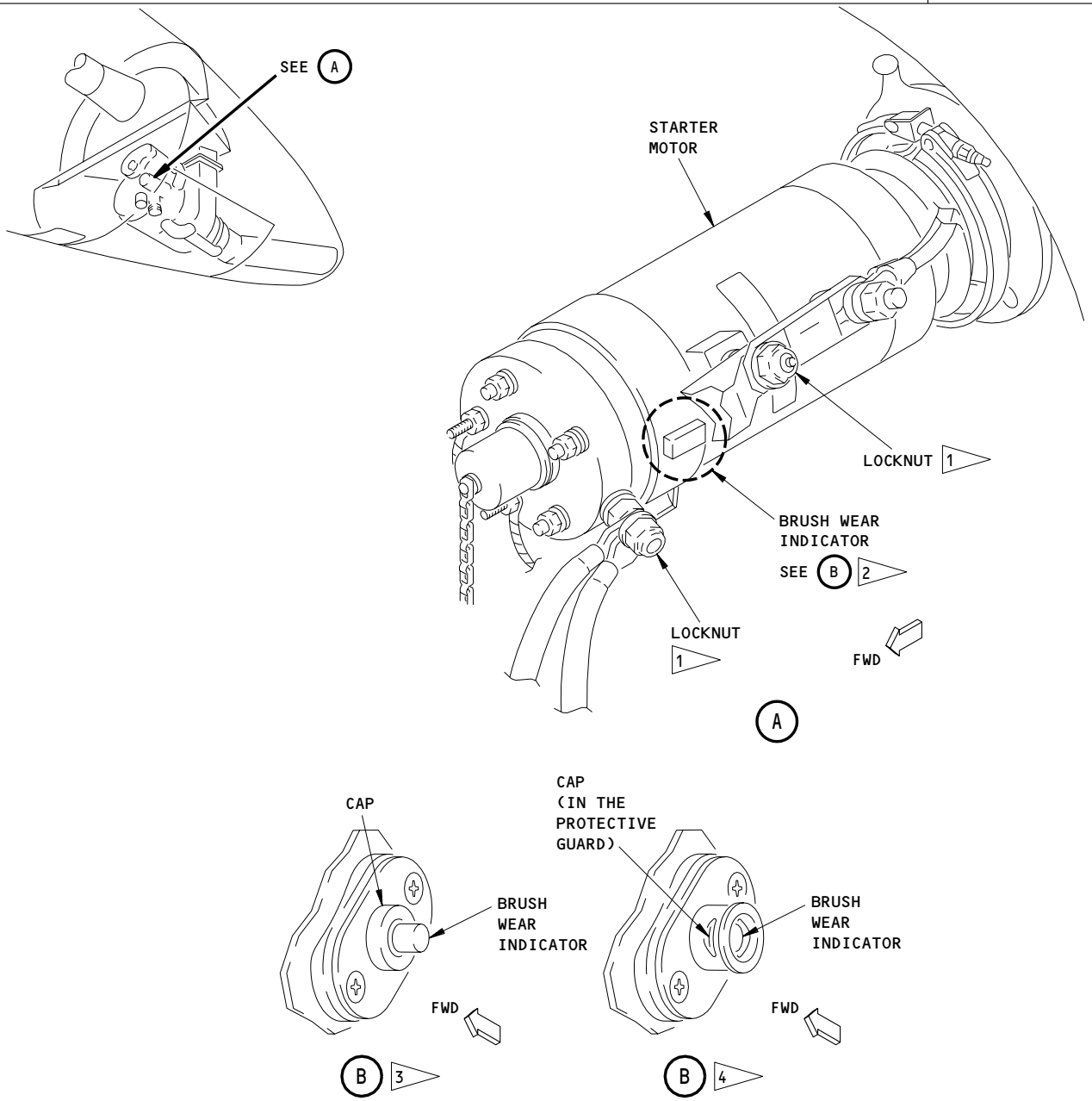
1) 49C2, APU PRIME CONT

2) 49C3, APU START

(b) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(6) Remove the DO-NOT-OPERATE tag from the APU control switch on the P5 overhead panel.



1 TWO TERMINAL NUTS (NOT SHOWN) ARE OPTIONAL TO THE ONE LOCKNUT

2 APU WITH THE -5 AND -6 STARTER MOTORS

3 APU WITH THE -7 STARTER MOTORS

4 APU WITH THE -8 STARTER MOTORS

Starter Motor Inspection
Figure 601

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-063-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
AIRPL			1C	11212	007	APR 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
OPERATIONAL	APU FIRE SHUTDOWN SYSTEM		ALL	ALL

ZONES	ACCESS PANELS
211 212 711	

MECH	INSP	MPD ITEM NUMBER

OPERATIONALLY CHECK THE APU FIRE SHUTDOWN SYSTEM VIA THE FIRE SWITCH ON THE PILOTS P8 PANEL AND THE REMOTE CONTROL SWITCH ON THE P40 PANEL. 49-11-00-5A

1. APU Emergency Shutdown System - Adjustment/Test

A. References

(1) AMM 49-11-00/201, Auxiliary Power Unit

B. Do a Test of the APU shutdown switch on the APU shutdown panel, P40

(1) Do this task: APU Starting and Operation (AMM 49-11-00/201).

CAUTION: DO NOT PUSH THE APU BOTTLE DISCHARGE SWITCH AFTER YOU PUSH THE APU SHUTDOWN SWITCH. THE APU SHUTDOWN SWITCH ARMS THE FIRE BOTTLES. IF YOU PUSH THE APU BOTTLE DISCHARGE SWITCH WHEN THE FIRE BOTTLES ARE ARMED, THE FIRE BOTTLES WILL RELEASE THEIR CONTENTS.

(2) Push the APU SHUTDOWN switch on the landing gear panel, P40, and hold for a minimum of 5 seconds.

(a) Do not push the APU BOTTLE DISCHARGE switch or the fire bottle will release its contents.

(b) Make sure the FIRE BOTTLE ARMED light on the P40 panel comes on.

(c) Make sure the APU stops.

(3) After the shutdown, put the APU control switch on the overhead panel, P5, to the OFF position.

MECH | INSP

(4) Put the BAT switch on the overhead panel, P5, to the OFF position and then to the ON position.

NOTE: This will set the emergency shutdown system again to make sure the system can operate.

C. Do a test of the APU fire switch on the aft pilot's control panel, P8

CAUTION: OPEN THESE CIRCUIT BREAKERS ON THE P6 PANEL. IF YOU DO NOT OPEN THESE CIRCUIT BREAKERS, THE FIRE BOTTLE CAN RELEASE ITS CONTENTS.

(1) Open these circuit breakers on the main power distribution panel, P6, and attach DO-NOT-CLOSE tags:

(a) 6G1, APU FIRE EXT 1

(b) AIRPLANES WITH DUAL FIRE BOTTLES;

6G2, APU FIRE EXT 2

(2) Use the APU Operation procedure to start the APU (AMM 49-11-00/201).

CAUTION: DO NOT TURN THE FIRE SWITCH. IF YOU TURN THE FIRE SWITCH, THE FIRE BOTTLE WILL RELEASE ITS CONTENTS.

(3) Pull the APU fire switch straight out.

(a) Do not turn the fire switch.

(b) Make sure the APU stops.

(4) After the shutdown, put the APU control switch to the OFF position.

(5) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P6 panel:

(a) 6G1, APU FIRE EXT 1

(b) AIRPLANES WITH DUAL FIRE BOTTLES;

6G2, APU FIRE EXT 2

MECH	INSP

(6) Set the APU fire switch back to its original position.

STATION		BOEING CARD NO.
TAIL NO.	SAS BOEING 767 TASK CARD	49-064-01
DATE		AIRLINE CARD NO.

SKILL	WORK AREA	RELATED TASK	INTERVAL	PHASE	MPD REV	TASK CARD REVISION
ENGIN	APU COMPT		1C	11212	007	APR 22/09

TASK	TITLE	STRUCTURAL ILLUSTRATION REFERENCE	APPLICABILITY AIRPLANE	APPLICABILITY ENGINE
CHECK/INSP	APU OIL COOLER		NOTE	ALL

ZONES	ACCESS PANELS
315 316	315AL 316AR

MECH | INSP

MPD ITEM NUMBER

VISUALLY INSPECT THE APU OIL COOLER FOR DAMAGE AND CONTAMINATION. 49-27-09-6A

AIRPLANE NOTE: THIS TASK IS APPLICABLE TO ALL AIRPLANE MODELS EXCEPT THE 767-400ER.

1. Oil Cooler - Inspection Check

A. General

(1) You can do this inspection with the oil cooler installed or removed from the APU.

(2) If it is necessary to clean the oil cooler, you must remove the oil cooler from the APU.

B. If the oil cooler is installed on the APU, do these steps to prepare for the oil cooler inspection:

(1) Make sure the APU control switch on the P5 overhead panel is OFF and attach a DO-NOT-CLOSE tag.

(2) Open these circuit breakers and attach DO-NOT-CLOSE tags:

(a) P11 Overhead Panel

1) 11B35, APU ALTN CONT

(b) P49 APU Auxiliary Panel

1) 49C2, APU PRIME CONT

2) 49C3, APU START

(3) Open the left APU access door, 315AL, and right APU access door, 316AR:

MECH | INSP

(a) While you hold the left access door in the closed position, open the four latches on the right access door.

NOTE: The left access door will open fully and the right access door will drop approximately one inch (2.5 cm) from the fuselage frame when the last latch is opened.

(b) Open the left access door to the fully open position and manually lock the hold-open strut.

NOTE: You push the center knob down and turn the knob clockwise to manually lock the hold-open strut.

(c) Push the right access door up and pull the detent latch aft until the latch disengages and releases the access door from the fuselage frame.

NOTE: The location of the detent latch is at the forward end of the right access door.

(d) Open the right access door to the fully open position and manually lock the hold-open strut.

(4) Do these steps to remove the inlet and the outlet ducts from the oil cooler:

(a) Loosen the cooler inlet clamp.

(b) Remove the nuts, the washers, and the bolts that attach the cooling fan duct to the cooling fan.

(c) Remove the cooling fan duct with the cooler inlet clamp.

(d) Loosen the cooler outlet clamp.

(e) Move the outlet duct and the clamp away from the oil cooler.

C. Oil Cooler Inspection

(1) Visually examine the air ducts in the oil cooler for contamination.

(a) If you find contamination, do this task: Oil Cooler Cleaning (AMM 49-27-09/701).

MECH	INSP

(2) Examine the internal and the external sides of the oil cooler for cracks, for dents, for holes, and for defective welds.

(a) If it is necessary, replace the oil cooler.

(3) Do this task: Oil Cooler Installation (AMM 49-27-09/401).

NOTE: If the oil cooler was not removed from the APU, all of the steps to install the APU oil cooler are not necessary.