

## AUXILIARY POWER UNIT (APU) - REMOVAL/INSTALLATION

*EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14*

### 1. General

- A. This section gives the procedures for removal/installation and deactivation/reactivation of the Auxiliary Power Unit (APU).
- B. The procedures in this section are given in the sequence below. The tasks identified with (◆) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	DESCRIPTION	EFFECTIVITY
49-14-01-000-801-A	AUXILIARY POWER UNIT (APU) - REMOVAL	AIRCRAFT WITH APU T-62T-40C14
49-14-01-400-801-A	AUXILIARY POWER UNIT (APU) - INSTALLATION	AIRCRAFT WITH APU T-62T-40C14
49-14-01-040-801-A	AUXILIARY POWER UNIT (APU) - DEACTIVATION	AIRCRAFT WITH APU T-62T-40C14
49-14-01-440-801-A	AUXILIARY POWER UNIT (APU) - REACTIVATION	AIRCRAFT WITH APU T-62T-40C14

TASK 49-14-01-000-801-A

EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14

## 2. AUXILIARY POWER UNIT (APU) - REMOVAL

### A. General

(1) This task gives the necessary instructions to remove the Auxiliary Power Unit (APU).

### B. References

REFERENCE	DESIGNATION
<a href="#">AMM MPP 49-02-00/200</a>	- MAINTENANCE PRACTICES
<a href="#">AMM TASK 49-15-00-000-801-A/400</a>	APU COWLING - REMOVAL

### C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
313		APU cowling

### D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
<a href="#">GSE 138</a>	APU Removal/Installation Arm	To remove/install the APU	
<a href="#">GSE 139</a>	APU Maintenance Dolly	For APU maintenance	
<a href="#">GSE 180</a>	Hydraulic Crane	To remove/install the APU	

### E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Workstand	To get access to the APU work area	1

### F. Consumable Materials

Not Applicable

### G. Expandable Parts

Not Applicable

### H. Persons Recommended

QTY	FUNCTION	PLACE
2	Do the task	APU work area

### I. Preparation

SUBTASK 841-002-A

**WARNING: BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN [AMM MPP 49-02-00/200](#) TO PREVENT INJURY TO PERSONS AND DAMAGE TO THE MATERIAL.**

**CAUTION:** DO NOT REMOVE THE APU WITH THE AIRCRAFT ON JACKS.

- (1) On the circuit breaker panel, open these circuit breakers and attach DO-NOT-CLOSE tags to them:
  - APU FUEL SOV.
  - APU BLEED.
  - APU FIRE EXTG.
  - APU FIRE DET.
- (2) On the left power control and distribution box, open the APU GEN START circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (3) Remove the APU cowling ( [AMM TASK 49-15-00-000-801-A/400](#)).

J. Removal ([Figure 401](#))

*SUBTASK 020-002-A*

- (1) Disconnect the fuel feed hose (2) and install a cap to its connection points.
- (2) Disconnect the electrical connector (3).
- (3) Remove the screws (13) which attach the terminal cover (14).
- (4) Remove the self-locking nuts (9) and Belleville washers (8) which attach the electrical cables (7) to the APU start/generator.
- (5) Disconnect the electrical cables (7) from the APU start/generator.
- (6) Remove the self-locking nuts (6) and Belleville washers (5) which attach the electrical wires (4) to the APU start/generator.
- (7) Disconnect the electrical wires (4) from the APU start/generator.
- (8) Disconnect the two electrical connectors (10) from the firewall.
- (9) Loosen the V-band clamp (25) to disconnect the bleed-air shutoff valve.
- (10) Loosen the clamp (12) and remove the air duct (11) from the vent air inlet of the starter/generator and oil cooler.
- (11) Remove the screws (17) and washers (18), and disconnect the vent outlet duct (16) with the vent flexible duct (15) from the starter/generator mounting pad.
- (12) Remove the screws (21) and washers (22), and disconnect the air inlet duct (20) with the flexible air inlet duct (19) from the gear box mounting pad.
- (13) Remove the screws (56), washers (57), and nuts (58), and disconnect the drain collector tube (55).
- (14) (FOR AIRCRAFT WITH APU DRAIN SCAVENGE PUMP) Loosen the clamps (41) and detach the combustor drain hose (40) from the APU mounting support assembly.

**CAUTION:** MAKE SURE THAT THE ELECTRICAL HARNESS INSTALLED ADJACENT TO THE APU SUPPORTING POINT IS NOT DAMAGED WHEN THE HOISTING SLING IS CONNECTED.

- (15) Engage the APU Removal/Installation Arm to the hydraulic crane. Install the APU Removal/Installation Arm to the APU lifting point and adjust the height correctly.
- (16) Remove the screws (27), washers (28), and nuts (30) which attach the safety covers (29).
- (17) Remove the safety covers (29).
- (18) Remove the cotter pin (38) from the APU center bracket.
- (19) Remove the nut (37), washer (36), shims (35), washers (34), washers (33), bonding wire (32), and bolt (31) which attach the center links (26) to the APU center bracket.
- (20) Detach the center links (26) from the APU center bracket.
- (21) Remove the cotter pin (48) from the lateral mount brackets.
- (22) Remove the nut (47), spacer (49), washer (43), and internal bolt (42) from each lateral mount bracket (54).
- (23) Remove the nut (46), washer (50), supporting washer (51), and external elastomeric mount (52) from each lateral mount bracket (54).

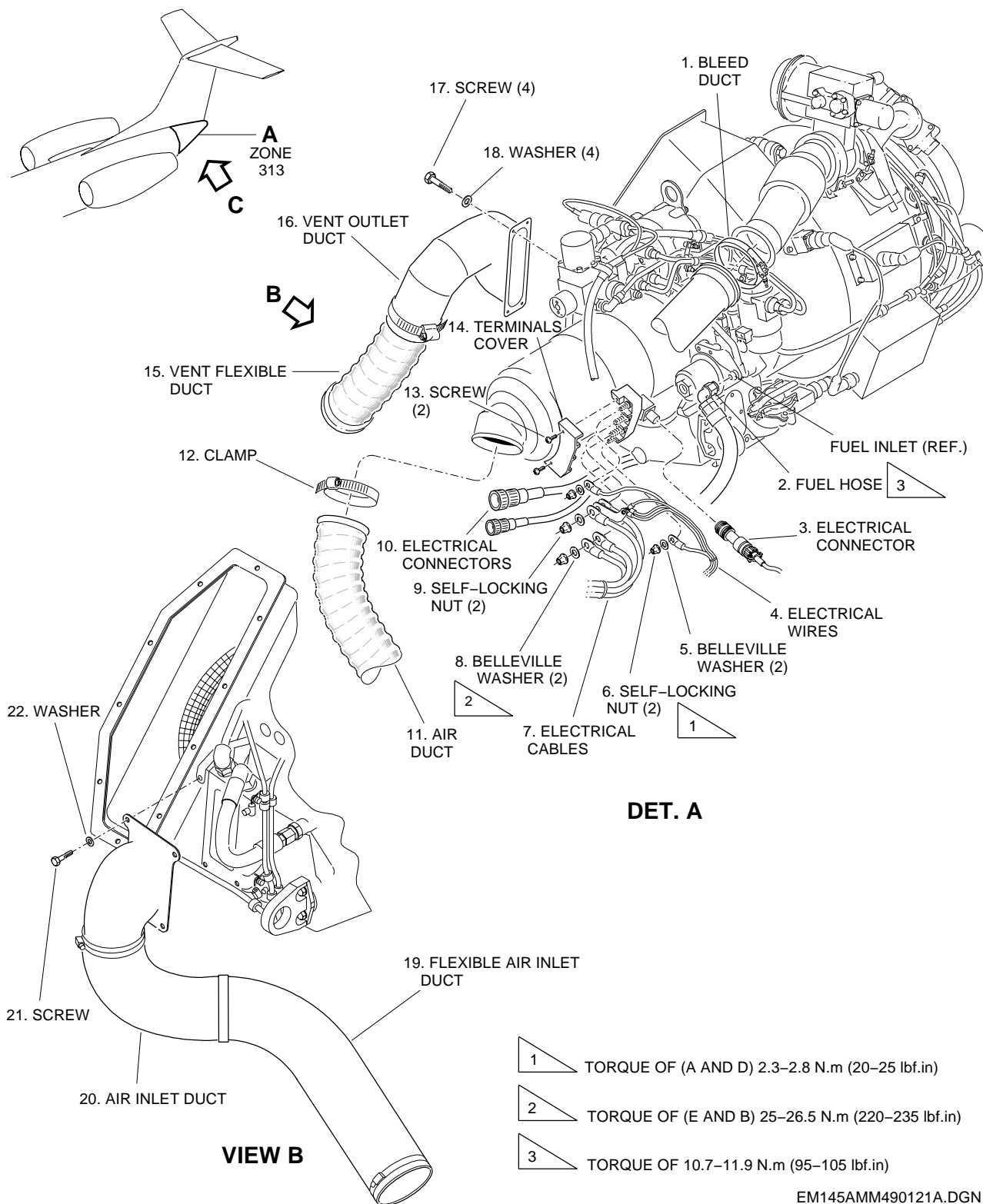
**CAUTION:** MAKE SURE THAT THE APU CONNECTIONS (WIRES, HOSES, CABLES, AND DUCTS) WILL NOT PREVENT THE APU MOVEMENT.

- (24) Move the APU from its installed location to the APU maintenance dolly.
- (25) Remove the hydraulic crane and the APU Removal/Installation Arm from the APU.
- (26) Remove the internal elastomeric mount (53) and supporting washer (44).
- (27) Put protection caps and plugs on the disconnected parts.

EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14

APU - Removal/Installation

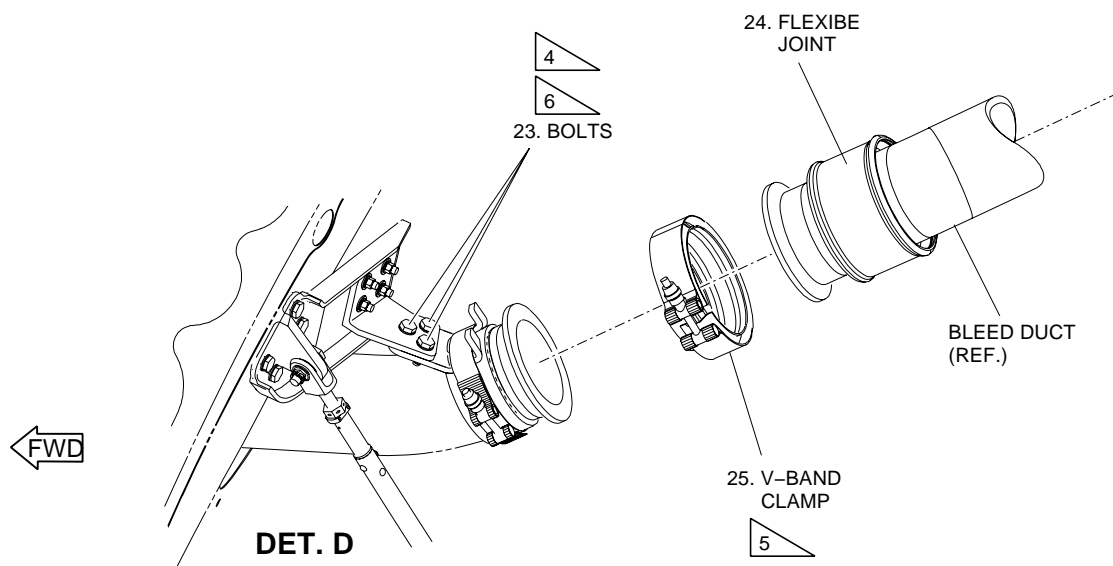
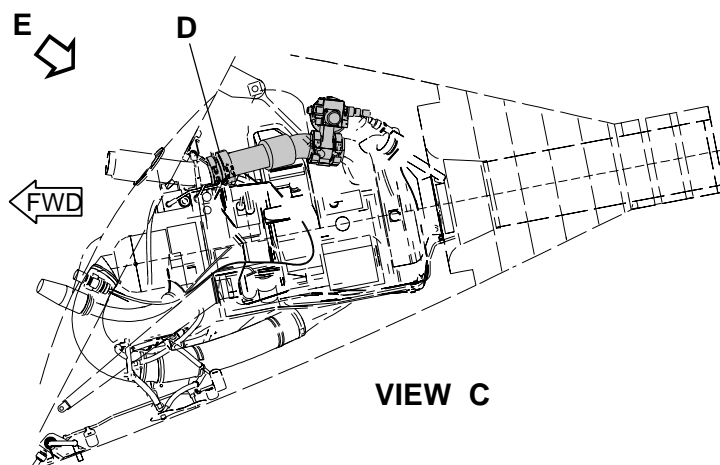
Figure 401 - Sheet 1



EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14

APU - Removal/Installation

Figure 401 - Sheet 2



4 AIRCRAFT POST-MOD S.B. 145-49-0031.

5 TORQUE: 4.5 – 5.7 N.m (40 – 50 lb.in).  
REFER TO TASK 20-10-10-910-801-A  
FOR CORRECT INSTALLATION OF V-CLAMP.

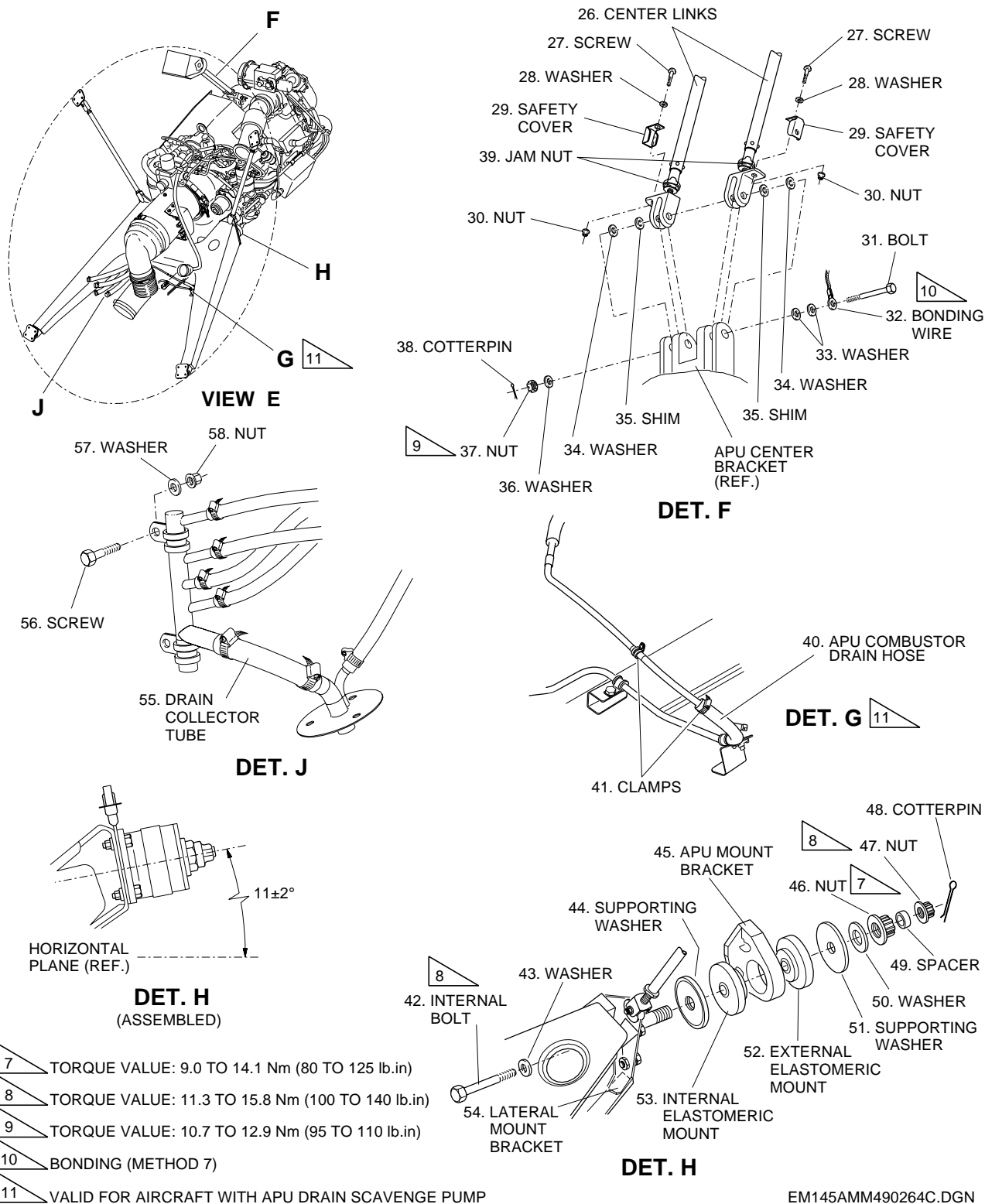
6 TORQUE: 2.8 N.m (25 lb.in).

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EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14

APU - Removal/Installation

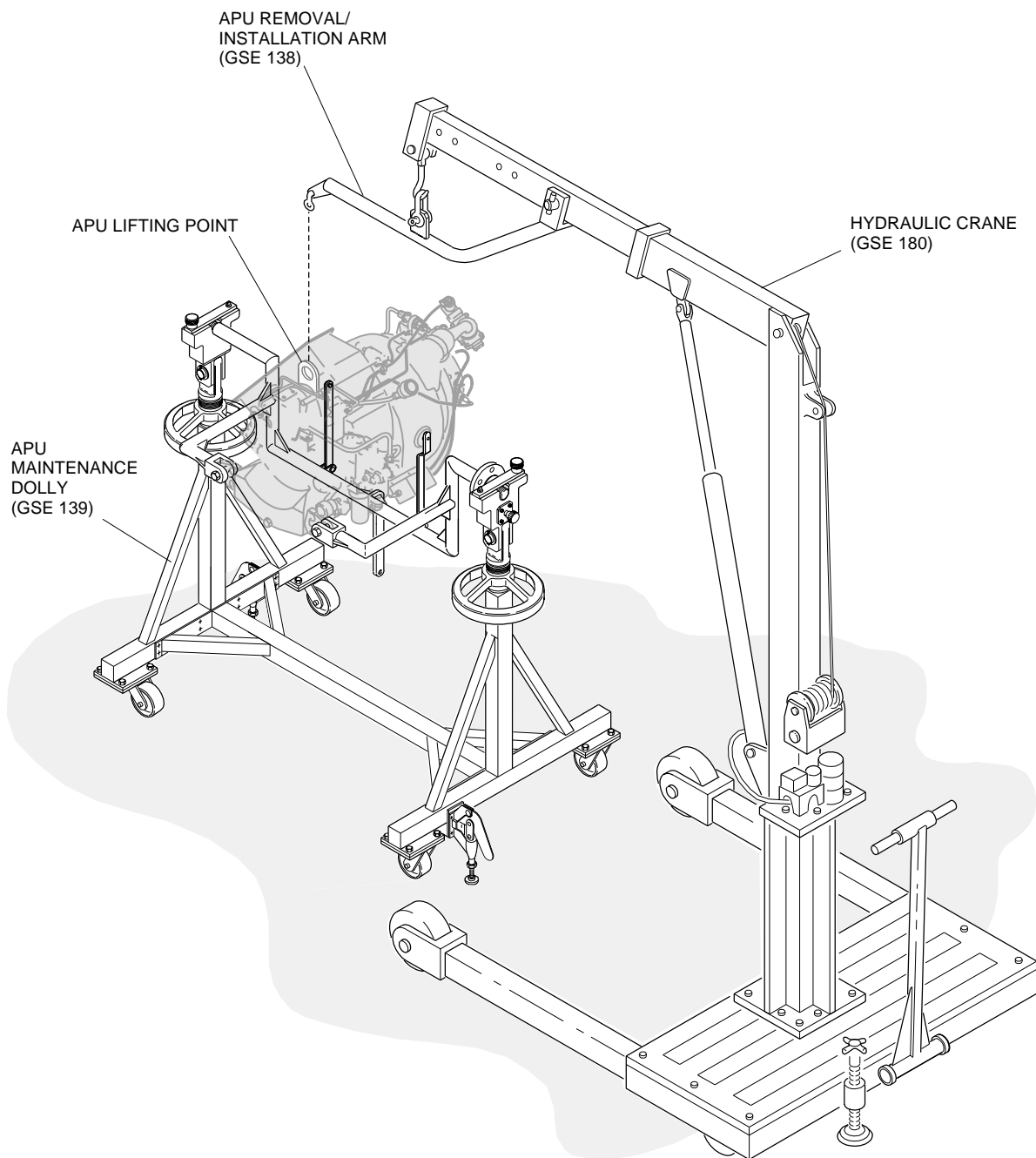
Figure 401 - Sheet 3



EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14

APU - Removal/Installation

Figure 401 - Sheet 4



145AMM490119.MCE A



TASK 49-14-01-400-801-A

EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14

### 3. AUXILIARY POWER UNIT (APU) - INSTALLATION

#### A. General

(1) This task gives the necessary instructions to install the Auxiliary Power Unit (APU).

#### B. References

REFERENCE	DESIGNATION
AMM TASK 20-13-21-700-801-A/200	ELECTRICAL BONDING TEST - STANDARD PROCEDURES
AMM TASK 20-13-21-910-801-A/200	TYPES OF ELECTRICAL BONDING AND SURFACE PREPARATION - STANDARD PROCEDURES
AMM TASK 20-13-21-910-802-A/200	ELECTRICAL BONDING PROTECTION - STANDARD PROCEDURES
AMM TASK 49-13-00-910-802-A/200	APU - START
AMM TASK 49-15-00-400-801-A/400	APU COWLING - INSTALLATION
AMM TASK 49-19-00-100-801-A/700	APU DRAIN LINES - CLEANING
S.B. 145-49-0031	-

#### C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
313		APU cowling

#### D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 138	APU Removal/Installation Arm	To remove/install the APU	
GSE 139	APU Maintenance Dolly	For APU maintenance	
GSE 180	Hydraulic Crane	To remove/install the APU	
Commercially available	Torque Wrench	To tighten the attaching screws and nuts	

#### E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Workstand	To get access to the APU work area	1

#### F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MS20995C32	Lockwire	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
2	Do the task	APU work area

I. Installation (Figure 401)

**SUBTASK 420-002-A**

**CAUTION:** DO NOT INSTALL THE APU WITH THE AIRCRAFT ON JACKS.

**NOTE:** Make sure that the APU is correctly equipped before you install it on the aircraft. Refer to the APU Qualified Interchangeability Table in the IPC Cross Reference Section.

- (1) Clean the APU drain lines ( [AMM TASK 49-19-00-100-801-A/700](#)).
- (2) Install the internal supporting washer (44) and elastomeric mount (53) on each lateral mount bracket (54).
- (3) Install the APU Removal/Installation Arm and the hydraulic crane to the APU lifting point.
- (4) Remove the APU from the APU Maintenance Dolly and install the APU on the lateral mount brackets (54).
- (5) Install the external elastomeric mount (52), supporting washer (51), washer (50), and nut (46) on each mount bracket, and tighten the nut . Refer to (Figure 401) for the torque values.
- (6) Install the internal bolt (42), washer (43), spacer (49), and nut (47) on each mount bracket, and tighten the nut. Refer to (Figure 401) for the torque values.
- (7) Install the cotter pin (48).
- (8) Put the center links (26) on its installation position on the APU center bracket.
- (9) Do the bonding procedures by method 7 ( [AMM TASK 20-13-21-910-801-A/200](#)). Refer to DET of (Figure 401), sheet 2.
- (10) Install the bolt (31), bonding wire (32), washers (33) (34) and (36), shims (35), and nut (37) to attach the center links (26) to the APU center bracket and tighten the nuts. Refer to (Figure 401) for the torque values.
- (11) Install the cotter pin (38).
- (12) Do the bonding test ( [AMM TASK 20-13-21-700-801-A/200](#)).
- (13) Do the bonding protection ( [AMM TASK 20-13-21-910-802-A/200](#)).
- (14) Install the safety covers (29) with the screws (27), washers (28), and nuts (30).
- (15) Disengage the arm with the hydraulic crane from the APU lifting point.

- (16) Remove the protection caps and plugs from the APU ducts and connectors and make sure that the ducts are clean and not clogged.
- (17) With the screws (21) and washers (22), install the air inlet duct (20) with the flexible air inlet duct (19) to the gear box mounting pad.
- (18) With the screws (17) and washers (18), install the vent outlet duct (16) with the vent flexible duct (15) to the starter/generator mounting pad.
- (19) Install the air duct (11) to the starter/generator and oil cooler vent air inlet, and tighten the attaching clamp (12).
- (20) (FOR AIRCRAFT WITH APU DRAIN SCAVENGE PUMP) Attach the combustor drain hose (40) to the APU mounting support assembly and install the clamps (41).
- (21) Install the drain collector tube (55) and install the screws (56), washers (57), and nuts (58).

**CAUTION:** BEFORE YOU INSTALL THE CLAMP, YOU MUST ALIGN THE FLANGES. TO DO THIS, MOVE THE TUBE THAT COMES FROM THE FIREWALL AS NECESSARY TO ALIGN IT WITH THE TUBE THAT COMES FROM THE BLEED VALVE AND NOT ON THE CONTRARY. OR DAMAGE TO THE FLEXIBLE JOINT WILL OCCUR.

- (22) Connect the bleed-air shutoff valve duct as follows:
  1. (FOR AIRCRAFT POST-MOD. [S.B. 145-49-0031](#)) Loosen the bolts (23) but do not remove them.
  2. Move the tube that comes from the firewall until you align its flange with the bleed duct (1) flange. Keep the alignment between the flexible joint (24) and the tube.
  3. (FOR AIRCRAFT POST-MOD. [S.B. 145-49-0031](#)) Torque the bolts (23).
  4. Install the packing and V-band clamp (25) to attach the bleed-air shutoff valve duct.

(23) Install the two electrical connectors (10) to the firewall.

(24) Connect the electrical connector (3) and electrical wires (4) to the APU start/generator.

**CAUTION:** SEE THEIR IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLES ARE INSTALLED CORRECTLY. INCORRECT INSTALLATION OF THE CABLES WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT ELECTRICAL EQUIPMENT.

- (25) Connect the electrical cables (7) to the APU start/generator.
- (26) Tighten the self-locking nuts (6) and Belleville washers (5) that attach the electrical cables (7) to the APU start/generator. Refer to (Figure 401) for the torque values.
- (27) Put the terminal cover (14) in its installation position and tighten the screws (13).
- (28) Install the fuel feed hose (2). Refer to (Figure 401) for the torque values.

J. Follow-on

*SUBTASK 842-002-A*

- (1) On the circuit breaker panel, remove the DO-NOT-CLOSE tags and close these circuit breakers:
  - APU FUEL SOV.
  - APU BLEED.
  - APU FIRE EXTG.
  - APU FIRE DET.
- (2) On the left power control and distribution box, remove the DO-NOT-CLOSE tag and close the APU GEN START circuit breaker.
- (3) Wait for a minimum of 10 minutes after the controller is powered to synchronize the controller and DMM, before you make APU operation.
- (4) Operate the APU ( [AMM TASK 49-13-00-910-802-A/200](#)) and examine the fuel lines and connection points for leaks and general conditions. If applicable, repair as necessary.
- (5) Do a visual inspection of the fire detectors for dents, chaffing, loose brackets or damages.
- (6) Install the APU cowling ( [AMM TASK 49-15-00-400-801-A/400](#)).

TASK 49-14-01-040-801-A

*EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14*

4. AUXILIARY POWER UNIT (APU) - DEACTIVATION

A. General

- (1) This procedure refers to item 49-00-00 - AUXILIARY POWER UNIT (APU) of the DDPM.
- (2) It is permitted to operate the aircraft with the APU inoperative if it is deactivated and the APU will not be necessary during operation.

B. Zones and Accesses

Not Applicable

C. Tools and Equipment

Not Applicable

D. Auxiliary Items

Not Applicable

E. Consumable Materials

Not Applicable

F. Expandable Parts

Not Applicable

G. Persons Recommended

QTY	FUNCTION	PLACE
1	Do the task	Cockpit

H. Deactivation

*SUBTASK 040-002-A*

- (1) Open and safety the APU circuit breakers:
  - APU CONTROL (on Circuit Breaker Panel)
  - APU CONTROL (On Left Distribution Box at Left Aft Console)
- (2) Install an "INOP" placard on the APU Control Panel.

TASK 49-14-01-440-801-A

*EFFECTIVITY: AIRCRAFT WITH APU T-62T-40C14*

5. AUXILIARY POWER UNIT (APU) - REACTIVATION

A. General

(1) This procedure refers to item 49-00-00 - AUXILIARY POWER UNIT (APU) of the DDPM.

B. Zones and Accesses

Not Applicable

C. Tools and Equipment

Not Applicable

D. Auxiliary Items

Not Applicable

E. Consumable Materials

Not Applicable

F. Expandable Parts

Not Applicable

G. Persons Recommended

<i>QTY</i>	<i>FUNCTION</i>	<i>PLACE</i>
1	Do the task	Cockpit and APU

H. Reactivation

*SUBTASK 440-002-A*

(1) Close the APU circuit breakers:

- APU CONTROL (on Circuit Breaker Panel)
- APU CONTROL (On Left Distribution Box at Left Aft Console)

(2) Do the APU troubleshooting.

(3) Remove the "INOP" placard from the APU Control Panel.