PILOT VALVE - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to remove/install the pilot valve of the pressure fueling system.

   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*
28-23-03-000-801-A	PILOT VALVE - REMOVAL	ACFT WITH WET WINGSTUB
28-23-03-400-801-A	PILOT VALVE - INSTALLATION	ACFT WITH WET WINGSTUB
28-23-03-000-802-A	PILOT VALVE - REMOVAL	ACFT WITH DRY WINGSTUB
28-23-03-400-802-A	PILOT VALVE - INSTALLATION	ACFT WITH DRY WINGSTUB

TASK 28-23-03-000-801-A
EFFECTIVITY: ACFT WITH WET WINGSTUB

2. PILOT VALVE - REMOVAL

A. General

(1) This task is applicable to the LH fuel tank and to the RH fuel tank.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM MPP 06-44-00/100	- COMPONENT LOCATION
AMM MPP 28-00-00/200	- MAINTENANCE PRACTICES
AMM TASK 12-11-01-600-802-A/300	FUEL-TANK PRESSURE DEFUELING - SERVICING
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 28-11-01-000-801-A/400	FUEL-TANK ACCESS PANELS - REMOVAL
AMM TASK 57-56-01-000-801-A/400	INBOARD AND OUTBOARD FLAP LOWER SHROUDS - REMOVAL

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223	223IZ	Control pedestal - cockpit
541	541CB	LH Underwing area
641	641CB	RH Underwing area

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Pin Extractor Tool P/N M81969/14-11, or equivalent	To insert/extract contact pin	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	LH/RH Underwing area

I. Preparation

SUBTASK 841-002-A

WARNING:
- **BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN AMM MPP 28-00-00/200 TO PREVENT INJURY TO PERSONS AND DAMAGE TO MATERIAL.**
- **MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT IN THE FLAP TRAVEL AREA.**

(1) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(2) Defuel the tanks (AMM TASK 12-11-01-600-802-A/300).

(3) Put the FLAP SELECTOR LEVER, on control pedestal 223IZ (AMM MPP 06-41-03/100), at the 45-degree position, to set the flaps to that position.

(4) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

(5) Open the outboard flap lower shroud (AMM TASK 57-56-01-000-801-A/400).

(6) On the circuit breaker panel, open the FUEL REFUELING 1/2/3 circuit breakers and attach a DO-NOT-CLOSE tag to them.

(7) Remove the access panels (AMM MPP 06-44-00/100) and (AMM TASK 28-11-01-000-801-A/400) shown below to get access to the pilot valves:

(a) LH fuel tank:

- 541CB.

(b) RH fuel tank:

- 641CB.

J. Removal (Figure 401)

SUBTASK 020-002-A

CAUTION: WHEN YOU REMOVE THE PILOT VALVE, DO NOT CUT THE HARNESS. ONLY DISCONNECT THE CONTACT PINS FROM THE SPLICES.

(1) Remove the contact pin (1) from the splice (2).

NOTE: Use extractor P/N M81969/14-11.

(2) Remove the elbow (5) from the pilot valve (12).

(3) Remove the elbow (6) from the nipple (7).

(4) Remove the nipple (7) and O-ring (8) from the pilot valve (12).

(5) Discard the O-ring (8).

(6) Remove the bolts (9) and washers (10) from the bracket (11).

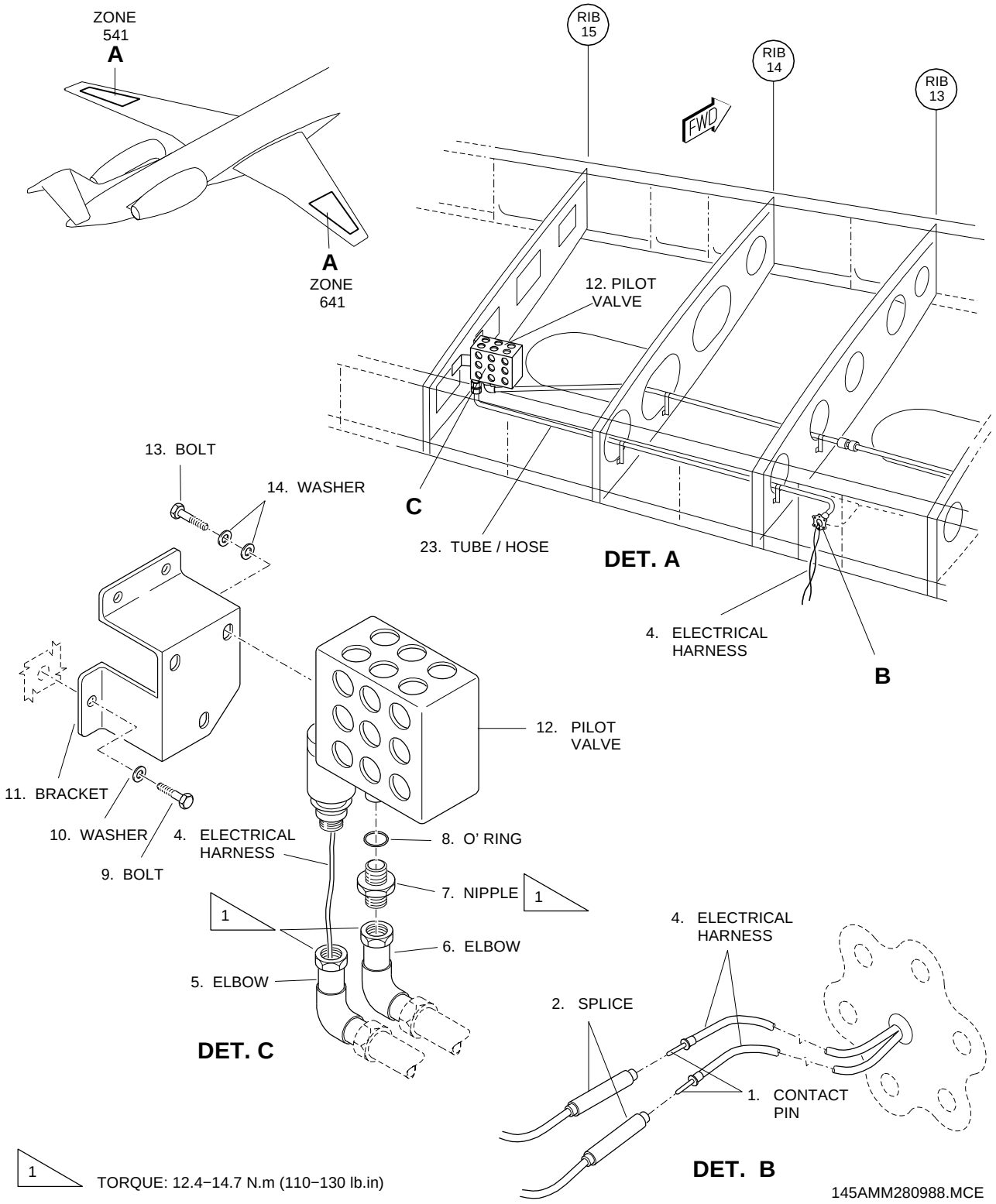
CAUTION: CAREFULLY REMOVE THE PILOT VALVE TO PREVENT DAMAGE TO THE ELECTRICAL HARNESS.

(7) Remove the electrical harness (4) from the elbow (5) and the tube/hose (23).

(8) Remove the bracket (11) and pilot valve (12) from the fuel tank.

(9) Remove the bolts (13) and washers (14) from the bracket (11) and pilot valve (12).

EFFECTIVITY:: ACFT WITH WET WINGSTUB
Pilot Valves - Removal/Installation
Figure 401



TASK 28-23-03-400-801-A
EFFECTIVITY: ACFT WITH WET WINGSTUB

3. PILOT VALVE - INSTALLATION

A. General

(1) This task is applicable to the LH fuel tank and to the RH fuel tank.

B. References

REFERENCE	*DESIGNATION*
28-23-00	-
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM MPP 06-44-00/100	- COMPONENT LOCATION
AMM MPP 28-00-00/200	- MAINTENANCE PRACTICES
AMM TASK 12-11-01-600-801-A/300	FUEL-TANK PRESSURE REFUELING - SERVICING
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 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 28-11-01-400-801-A/400	FUEL-TANK ACCESS PANELS - INSTALLATION
AMM TASK 57-56-01-400-801-A/400	INBOARD AND OUTBOARD FLAP LOWER SHROUDS - INSTALLATION
SWPM 20-00-03	Wire Termination Code and Tooling - Description
WM 28-23-50	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223	223IZ	Control pedestal - cockpit
541	541CB	LH underwing area
641	641CB	RH underwing area

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Pin Extractor Tool P/N M81969/14-11, or equivalent	To extract/insert contact pin	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
M39029/1-16-20	Contact pin	02
Molykote DC-33 Light	Lubricant	AR
Commercially available	Adhesive tape	AR

G. Expendable Parts

ITEM	*IPC REFERENCE (VENDOR REFERENCE)*	*QTY*
O-ring	28-23-00	1

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	LH/RH underwing area

I. Preparation

SUBTASK 841-003-A

(1) If you will install a new pilot valve, install new contact pins (1) to the pilot valve electrical harnesses (4). Refer to SWPM 20-00-03 (contact pin code: MAA).

(2) Lightly apply Molykote lubricant to the O-ring (8).

(3) Put a piece of adhesive tape on the contact pin (1) to prevent scratches on the tube/hose inner side.

(4) Prepare the pilot valve base surface for bonding. Do the bonding procedure by method 3 (AMM TASK 20-13-21-910-801-A/200).

J. Installation (Figure 401)

SUBTASK 420-002-A

WARNING: BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN AMM MPP 28-00-00/200 TO PREVENT INJURY TO PERSONS AND DAMAGE TO MATERIAL.

(1) Put the bracket (11) and the pilot valve (12) together and install the bolts (13) and the washers (14).

CAUTION: DO NOT USE SAFETY WIRE TO PULL THE ELECTRICAL HARNESS THROUGH THE TUBE/HOSE.

(2) Put the electrical harness (4) into the elbow (5) and tube/hose (23).

NOTE: If necessary, use wax string and shop air to pull the electrical harness through the tube/hose.

(3) Install the contact pin (1) in the splice (2) (WM 28-23-50).

NOTE: • Use insertion tool P/N M81969/14-11.

• Polarity markings of harness (4) are not relevant.

(4) Install the O-ring (8) and the nipple (7).

(5) Put the bracket (11) and the pilot valve (12) in position.

(6) Install the bolts (9) and washers (10).

(7) Do the bonding protection for the pilot valve base (AMM TASK 20-13-21-910-802-A/200).

(8) Install the elbow (5) on the pilot valve (12).

(9) Install the elbow (6) on the nipple (7).

K. Follow-on

SUBTASK 842-002-A

(1) Close the outboard-flap lower shroud (AMM TASK 57-56-01-400-801-A/400).

(2) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(3) Put the Flap Selector Lever, on the control pedestal (AMM MPP 06-41-03/100), in the zero-degree position.

(4) De-energize the aircraft (AMM TASK 20-40-01-860-801-A/200).

(5) Install these access panels (AMM MPP 06-44-00/100 and AMM TASK 28-11-01-400-801-A/400):

(a) LH fuel tank:

• 541CB.

(b) RH fuel tank:

• 641CB.

(6) On the circuit breaker panel, close the FUEL REFUELING 1/2/3 circuit breakers and remove the DO-NOT-CLOSE tag from them.

(7) Refuel the tanks (AMM TASK 12-11-01-600-801-A/300) as applicable.

(8) Examine the work area for leakage and correct as necessary.

TASK 28-23-03-000-802-A
EFFECTIVITY: ACFT WITH DRY WINGSTUB

4. PILOT VALVE - REMOVAL

A. General

(1) This task is applicable to the LH fuel tank and to the RH fuel tank.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM MPP 06-44-00/100	- COMPONENT LOCATION
AMM MPP 28-00-00/200	- MAINTENANCE PRACTICES
AMM TASK 12-11-01-600-802-A/300	FUEL-TANK PRESSURE DEFUELING - SERVICING
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 28-11-01-000-802-A/400	FUEL-TANK ACCESS PANELS - REMOVAL
AMM TASK 57-56-01-000-801-A/400	INBOARD AND OUTBOARD FLAP LOWER SHROUDS - REMOVAL

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223	223IZ	Control pedestal - cockpit
541	541CB	LH underwing area
641	641CB	RH underwing area

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Pin Extractor Tool P/N M81969/14-11or equivalent	To insert/extract contact pin	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	LH/RH underwing area

I. Preparation

SUBTASK 841-004-A

WARNING:
- **BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN AMM MPP 28-00-00/200 TO PREVENT INJURY TO PERSONS AND DAMAGE TO MATERIAL.**
- **MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT IN THE FLAP TRAVEL AREA.**

(1) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(2) Defuel the tanks (AMM TASK 12-11-01-600-802-A/300).

(3) Put the FLAP SELECTOR LEVER, on control pedestal 223IZ (AMM MPP 06-41-03/100), in the 45-degree position, to set the flaps to that position.

(4) De-energize the aircraft (AMM TASK 20-40-01-860-801-A/200).

(5) Open the outboard flap lower shroud (AMM TASK 57-56-01-000-801-A/400).

(6) On the circuit breaker panel, open the FUEL REFUELING 1/2/3 circuit breakers and attach a DO-NOT-CLOSE tag to them.

(7) Remove these access panels (AMM MPP 06-44-00/100 andAMM TASK 28-11-01-000-802-A/400) to get access to the pilot valves:

(a) LH fuel tank:

- 541CB.

(b) RH fuel tank:

- 641CB.

J. Removal (Figure 402) (Figure 403) (Figure 404)

SUBTASK 020-003-A

CAUTION: WHEN YOU REMOVE THE PILOT VALVE, DO NOT CUT THE HARNESS. ONLY DISCONNECT THE CONTACT PINS FROM THE SPLICES.

(1) Remove the contact pin (1) from the splice (2).

NOTE: Use extractor tool P/N M81969/14-11.

(2) Remove the elbow (5) from the pilot valve (12).

(3) Remove the elbow (6) from the nipple (7).

(4) Remove the nipple (7) and O-ring (8) from the pilot valve (12).

(5) Discard the O-ring (8).

(6) Remove the bolts (9) and washers (10) from the bracket (11).

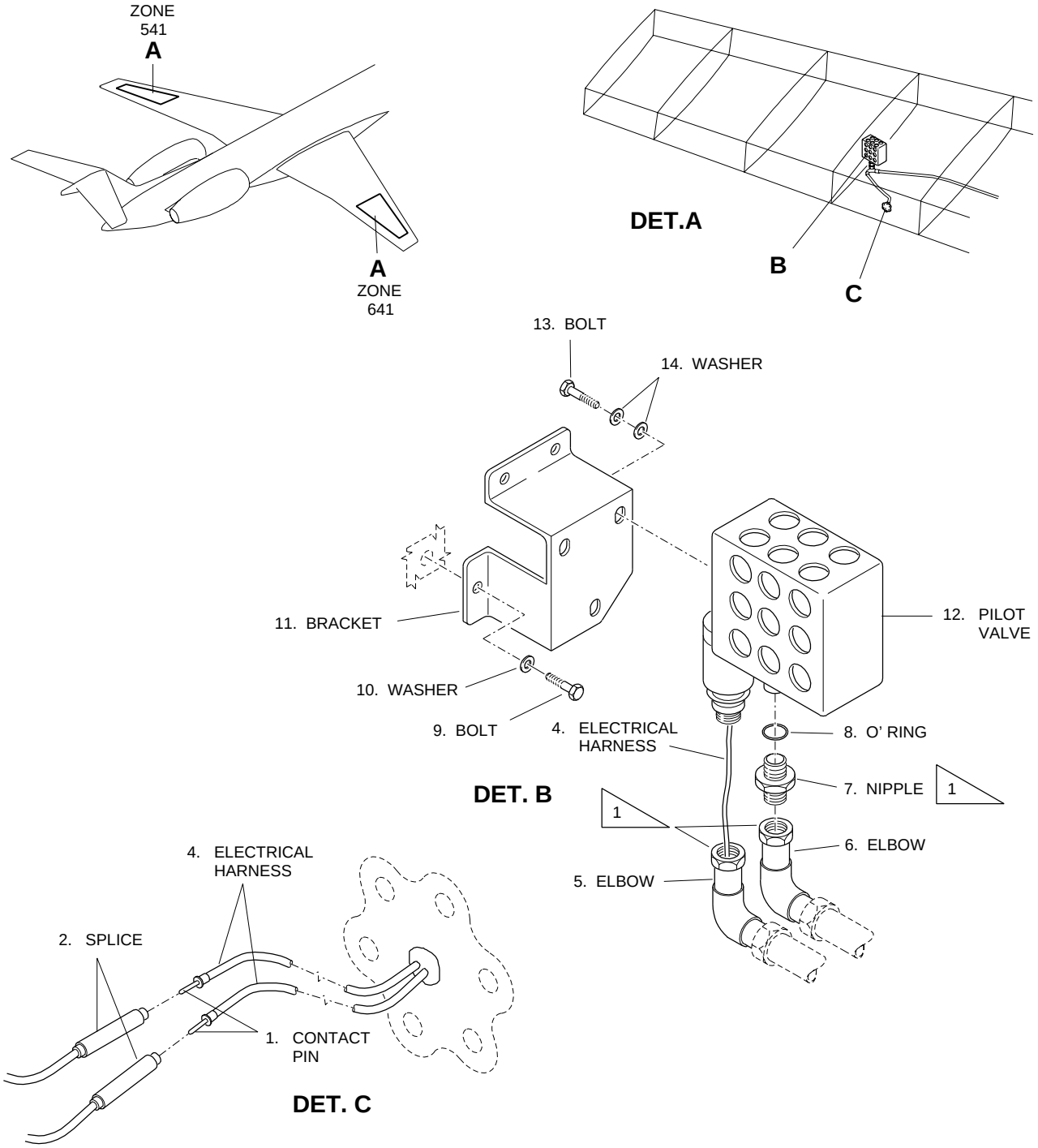
CAUTION: CAREFULLY REMOVE THE PILOT VALVE TO PREVENT DAMAGE TO THE ELECTRICAL HARNESS.

(7) Remove the electrical harness (4) from the elbow (5) and the tube/hose.

(8) Remove the bracket (11) and pilot valve (12) from the fuel tank.

(9) Remove the bolts (13) and washers (14) from the bracket (11) and pilot valve (12).

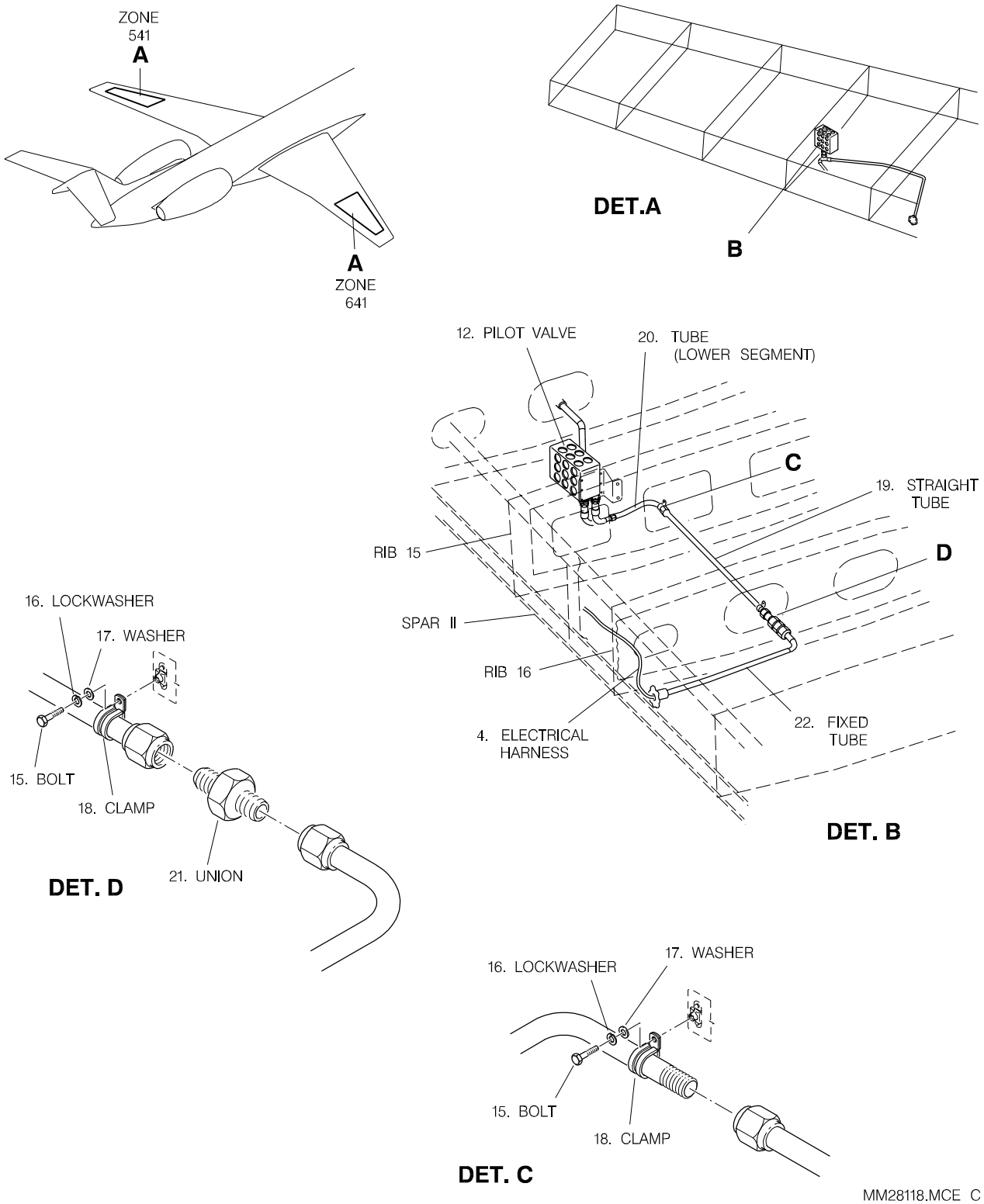
EFFECTIVITY:: ACFT WITH DRY WINGSTUB
Pilot Valve - Removal/Installation
Figure 402



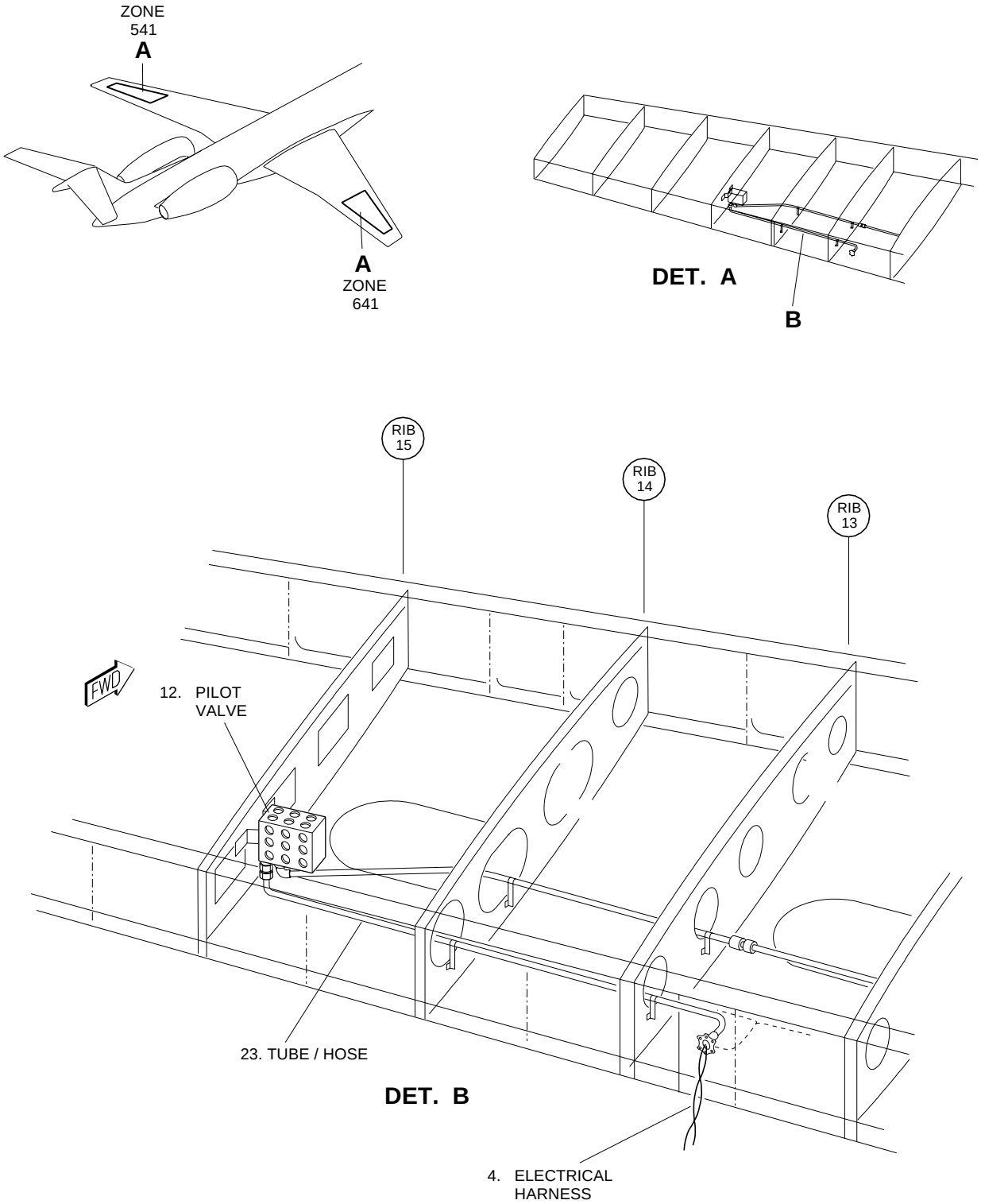
1 TORQUE: 12.4-14.7 N.m (110-130 lb.in)

145AMM280073.MCE F

EFFECTIVITY:: PRE-MOD SB 145-28-0006
Pilot Valve - Removal/Installation
Figure 403



EFFECTIVITY:: POST-MOD SB 145-28-0006
Pilot Valve - Removal/Installation
Figure 404



145AMM280119C.MCE

TASK 28-23-03-400-802-A
EFFECTIVITY: ACFT WITH DRY WINGSTUB

5. PILOT VALVE - INSTALLATION

A. General

(1) This task is applicable to the LH fuel tank and to the RH fuel tank.

B. References

REFERENCE	*DESIGNATION*
28-23-00	-
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM MPP 06-44-00/100	- COMPONENT LOCATION
AMM MPP 28-00-00/200	- MAINTENANCE PRACTICES
AMM TASK 12-11-01-600-801-A/300	FUEL-TANK PRESSURE REFUELING - SERVICING
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 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 28-11-01-400-802-A/400	FUEL-TANK ACCESS PANELS - INSTALLATION
AMM TASK 57-56-01-400-801-A/400	INBOARD AND OUTBOARD FLAP LOWER SHROUDS - INSTALLATION
SB145-28-0006	-
SWPM 20-00-03	Wire Termination Code and Tooling - Description
WM 28-23-50	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223	223IZ	Control pedestal - cockpit
541	541CB	LH underwing area
641	641CB	RH underwing area

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Pin Extractor Tool P/N M81969/14-11, or equivalent	To extract/insert contact pin	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
M39029/1-16-20	Contact pin	02
Molykote DC-33 Light	Lubricant	AR
Commercially available	Adhesive tape	AR

G. Expendable Parts

ITEM	*IPC REFERENCE (VENDOR REFERENCE)*	*QTY*
O-ring	28-23-00	1

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	LH/RH underwing area

I. Preparation

SUBTASK 841-005-A

(1) If you will install a new pilot valve, install new contact pins (1) to the pilot valve electrical harnesses (4). Refer to SWPM 20-00-03 (contact pin code: MAA).

(2) Lightly apply Molykote lubricant to the O-ring (8).

(3) Put a piece of adhesive tape on the contact pin (1) to prevent scratches inside the tube/hose.

(4) Prepare the pilot valve base surface for bonding. Do the bonding procedure by method 3 (AMM TASK 20-13-21-910-801-A/200).

J. Installation (Figure 402) (Figure 403) (Figure 404)

SUBTASK 420-003-A

WARNING: BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN AMM MPP 28-00-00/200 TO PREVENT INJURY TO PERSONS AND DAMAGE TO MATERIAL.

(1) Do the steps below (for aircraft PRE-MOD SB145-28-0006 only):

(a) Remove the bolts (15), lock washer (16), and washer (17) from the clamps (18).

(b) Remove the straight tube (19) from the tube (20) and from the union (21).

(c) Remove the union from the fixed tube (22).

CAUTION: DO NOT USE SAFETY WIRE TO PULL THE ELECTRICAL HARNESS THROUGH THE TUBE/HOSE.

(d) Put the electrical harness into the elbow (5) and tube/hose (20).

NOTE: If necessary, use wax string and shop air to pull the electrical harness through the tube/hose.

(e) Put the electrical harness into the straight tube (19), union (21), and fixed tube (22).

(f) Install the union (21) in the fixed tube (22) and in the straight tube (19).

(g) Install the straight tube (19) in the tube (20) and install the bolts (15), lock washers (16), washers (17), and clamps (18).

(2) Do the step that follows (for aircraft POST-MOD SB145-28-0006 only):

CAUTION: DO NOT USE SAFETY WIRE TO PULL THE ELECTRICAL HARNESS THROUGH THE TUBE/HOSE.

(a) Put the electrical harness into the elbow (5) and tube/hose (23).

NOTE: If necessary, use wax string and shop air to pull the electrical harness through the tube/hose.

(3) Install the contact pin (1) in the splice (2) (WM 28-23-50).

NOTE:
- Use insertion tool P/N M81969/14-11.
- Polarity markings of harness (4) are not relevant.

(4) Install the O-ring (8) and the nipple (7).

(5) Put the bracket (11) and the pilot valve (12) together and install the bolts (13) and the washers (14).

(6) Put the bracket (11) and the pilot valve (12) in the fuel tank.

(7) Install the bolts (9) and washers (10).

(8) Do the bonding protection for the pilot valve base (AMM TASK 20-13-21-910-802-A/200).

(9) Install the elbow (5) on the pilot valve (12).

(10) Install the elbow (6) on the nipple (7).

K. Follow-on

SUBTASK 842-003-A

(1) Close the outboard flap lower shroud (AMM TASK 57-56-01-400-801-A/400).

(2) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(3) Put the Flap Selector Lever, on control pedestal 223IZ (AMM MPP 06-41-03/100), in the zero-degree position.

(4) De-energize the aircraft (AMM TASK 20-40-01-860-801-A/200).

(5) Install these access panels (AMM MPP 06-44-00/100 and AMM TASK 28-11-01-400-802-A/400):

(a) LH fuel tank:

- 541CB.

(b) RH fuel tank:

- 641CB.

(6) On the circuit breaker panel, close the FUEL REFUELING 1/2/3 circuit breakers and remove the DO-NOT-CLOSE tag from them.

(7) Refuel the tanks (AMM TASK 12-11-01-600-801-A/300) as applicable.

(8) Examine the work area for leakage and correct as necessary.