



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

ENGINE SHUT-OFF VALVE - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to remove/install the engine shut-off valve.
- 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
28-21-05-000-801-A	ENGINE SHUT-OFF VALVE - REMOVAL	ACFT WITH WET WINGSTUB
28-21-05-400-801-A	ENGINE SHUT-OFF VALVE - INSTALLATION	ACFT WITH WET WINGSTUB
28-21-05-000-802-A	ENGINE SHUT-OFF VALVE - REMOVAL	ACFT WITH DRY WINGSTUB
28-21-05-400-802-A	ENGINE SHUT-OFF VALVE - INSTALLATION	ACFT WITH DRY WINGSTUB



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TASK 28-21-05-000-801-A

EFFECTIVITY: ACFT WITH WET WINGSTUB

2. ENGINE SHUT-OFF VALVE - REMOVAL

A. General

- (1) Obey the instructions below to remove the engine shut-off valve.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
AMM MPP 28-00-00/200	- MAINTENANCE PRACTICES
AMM TASK 12-11-01-600-801-A/300	FUEL-TANK PRESSURE REFUELING - SERVICING

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
155	155DZ/155EZ	LH landing gear bay
156	156DZ/156EZ	RH landing gear bay

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Containers	To collect residual fuel from open lines	AR

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Landing gear bay

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.

- (1) Defuel the fuel tanks as applicable (AMM TASK 12-11-01-600-801-A/300).



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- (2) On the fuel panel, make sure that the XFEED switch is set at OFF.
- (3) On the circuit breaker panel, open the circuit breakers below and attach a DO-NOT-CLOSE tag to them:
 - FUEL PUMPS 1A/1B/1C.
 - FUEL PUMPS 2A/2B/2C.
 - START 1/2.
 - FUEL SOV 1/2.
 - FUEL CROSS-FEED.
- (4) Open access panels 155DZ/155EZ or 156DZ/156EZ as applicable (AMM MPP 06-41-01/100) to get access to the engine shut-off valves.

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

SUBTASK 020-002-A

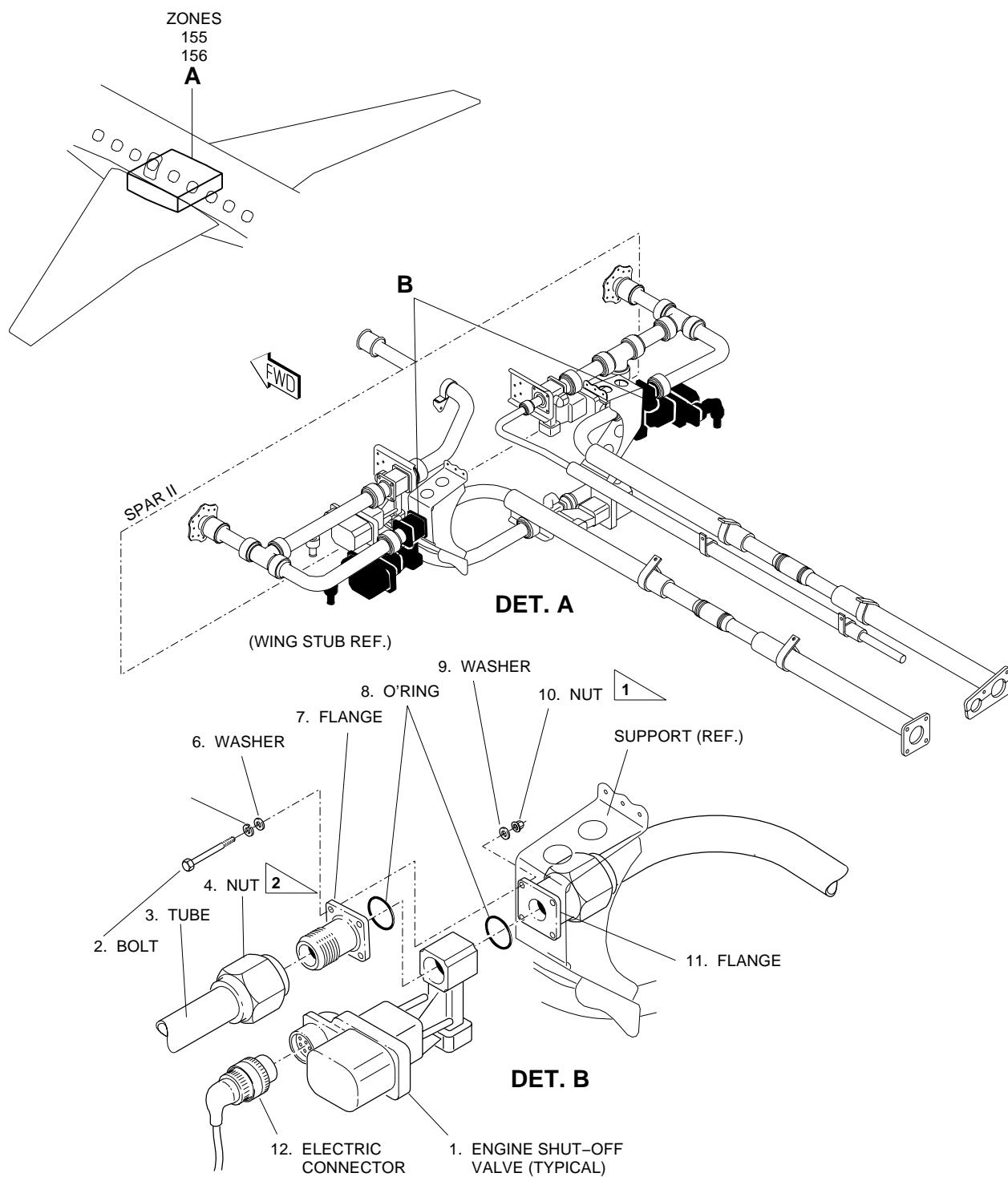
WARNING: USE APPLICABLE CONTAINERS TO COLLECT THE REMAINING FUEL FROM THE OPEN LINES AND KEEP THE WORK AREA CLEAN AND SAFE.

- (1) Disconnect the electric connector (12) from the engine shut-off valve (1).
- (2) Loosen the nut (4).
- (3) Remove the nuts (10), washers (7) and (9), spring washers (5), and bolts (2).
- (4) Turn the tube (3) and remove the flange (7).
- (5) Remove the engine shut-off valve (11).
- (6) Remove and discard the O-rings (10).
- (7) Cover all disconnected points with applicable plugs or caps to prevent contamination.

EFFECTIVITY: ACFT WITH WET WINGSTUB

Engine Shut-off Valve - Removal/Installation

Figure 401



1 TORQUE: 2.26 – 2.82 N.m (20 – 25 lb.in)

2 TORQUE : 56.5–79.1 N.m (500–700 lb.in)

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TASK 28-21-05-400-801-A

EFFECTIVITY: ACFT WITH WET WINGSTUB

3. ENGINE SHUT-OFF VALVE - INSTALLATION

A. General

- (1) Obey the instructions below to install the engine shut-off valve.

B. References

REFERENCE	DESIGNATION
28-21-00	-
AMM MPP 06-41-01/100	-
AMM MPP 28-00-00/200	- MAINTENANCE PRACTICES
AMM MPP 28-11-01/400	- REMOVAL/INSTALLATION
AMM TASK 12-11-01-600-801-A/300	FUEL-TANK PRESSURE REFUELING - SERVICING
AMM TASK 28-21-05-700-801-A/500	ENGINE 1/2 SHUT-OFF VALVES - OPERATIONAL CHECK
AMM TASK 28-21-11-700-801-A/500	FUEL-FEED-LINE LEAK TEST - OPERATIONAL TEST
AMM TASK 28-41-00-200-801-A/600	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
155	155DZ/155EZ	LH landing gear bay
156	156DZ/156EZ	RH landing gear bay

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Torque wrench	To tighten the attachment nuts	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
Molykote DC-33 Light	Lubricant	AR

G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
O-ring	28-21-00	2



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H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Landing gear bay

I. Preparation

SUBTASK 841-003-A

- (1) On the circuit breaker panel, make sure that the circuit breakers below are open and with a DO-NOT-CLOSE tag attached to them:
 - FUEL PUMPS 1A/1B/1C.
 - FUEL PUMPS 2A/2B/2C.
 - START 1/2.
 - FUEL SOV 1/2.
 - FUEL CROSS-FEED.
- (2) Remove the protection caps or plugs from the disconnected points, if applicable.
- (3) Lightly apply Molykote lubricant to the O-rings (8).

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) Install the O-rings (8) to the flanges (7) and (11).
- (2) Install the engine shut-off valve (1) between the flanges (7) and (11).
- (3) Install the bolts (2), spring washers (5), washers (6) and (9), and nuts (10).
- (4) Turn the tube (3) and install the nut (4) to the flange (7).
- (5) Tighten the nuts (4) and (10).
- (6) Install the electric connector (12) on the engine shut-off valve (1).

K. Follow-on

SUBTASK 842-002-A

- (1) On the circuit breaker panel, close the circuit breakers below and remove the DO-NOT-CLOSE tag from them:
 - FUEL PUMPS 1A/1B/1C.
 - FUEL PUMPS 2A/2B/2C.
 - START 1/2.
 - FUEL SOV 1/2.



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- FUEL CROSS-FEED.
- (2) Refuel the tanks as applicable ([AMM TASK 12-11-01-600-801-A/300](#)).
- (3) Do the Fuel-Feed-Line Leak Test ([AMM TASK 28-21-11-700-801-A/500](#)), and examine the engine shut-off valves and connections for leakage. Correct as necessary.
- (4) Do the engine shut-off valve adjustment/test ([AMM TASK 28-21-05-700-801-A/500](#)).
- (5) Do an inspection on the fuel quantity indication harness (AMM TASK 28-41-00-200-801-A/600).
- NOTE:** The inspection of fuel quantity indication harness is a part of Critical Design Configuration Control Limitations (CDCCL) in the Airworthiness Limitations of the Maintenance Review Board Report (MRB).
- (6) Install access panels 155DZ/155EZ or 156DZ/156EZ as applicable (AMM MPP 06-41-01/100 and [AMM MPP 28-11-01/400](#)).



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TASK 28-21-05-000-802-A

EFFECTIVITY: ACFT WITH DRY WINGSTUB

4. ENGINE SHUT-OFF VALVE - REMOVAL

A. General

- (1) Obey the instructions below to remove the engine shut-off valve.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
AMM MPP 28-00-00/200	- MAINTENANCE PRACTICES
AMM TASK 12-11-01-600-802-A/300	FUEL-TANK PRESSURE DEFUELING - SERVICING

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
192	192AL	Center lower fairing
192	192BR	Center lower fairing

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Containers	To collect residual fuel from the open lines	AR

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Center lower fairing

I. Preparation

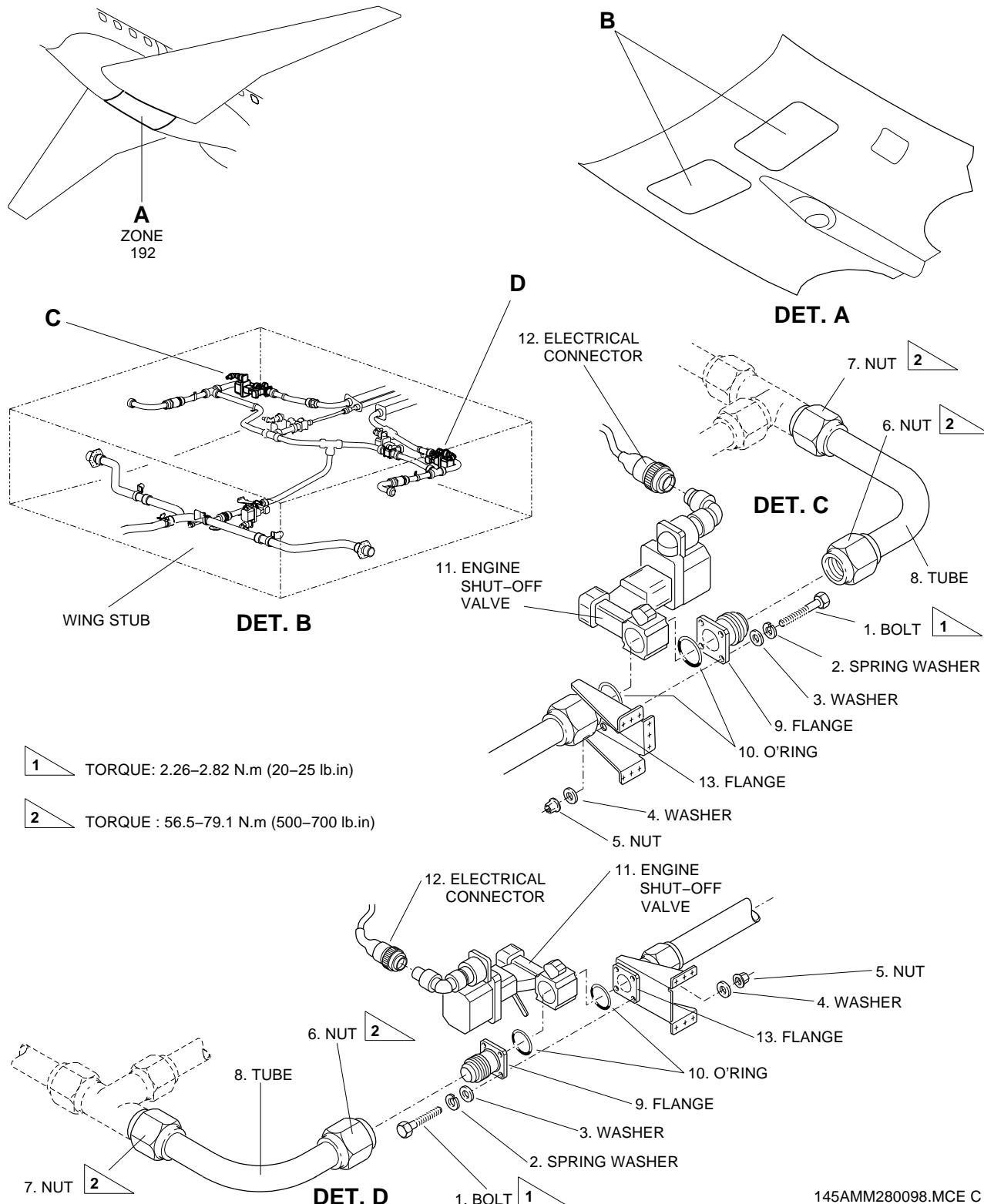
SUBTASK 841-004-A

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.

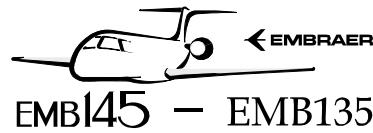
- (1) Defuel the LH or RH tank as applicable ([AMM TASK 12-11-01-600-802-A/300](#)).

- (2) On the fuel panel, make sure that the XFEED switch is set at OFF.
 - (3) On the circuit breaker panel, open the circuit breakers below and attach a DO-NOT-CLOSE tag to them:
 - FUEL PUMPS 1A/1B/1C.
 - FUEL PUMPS 2A/2B/2C.
 - START 1/2.
 - FUEL SOV 1/2.
 - FUEL CROSS-FEED.
 - (4) Open access panels 192AL and 192BR (AMM MPP 06-41-01/100) to get access to the engine shut-off valves.
- J. Removal ([Figure 402](#))
- SUBTASK 020-003-A**
- WARNING: USE APPLICABLE CONTAINERS TO COLLECT THE REMAINING FUEL FROM THE OPEN LINES AND KEEP THE WORK AREA CLEAN AND SAFE.**
- (1) Remove the bolts (1), spring washers (2), washers (3) and (4), and nuts (5).
 - (2) Loosen the nuts (6) and (7).
 - (3) Turn the tube (8) and remove the flange (9).
 - (4) Remove and discard the O-rings (10).
 - (5) Remove the engine shut-off valve (11).
 - (6) Disconnect the electric connector (12) from the engine shut-off valve (11).
 - (7) Cover all disconnected points with applicable plugs or caps to prevent contamination.

EFFECTIVITY: ACFT WITH DRY WINGSTUB
 Engine Shut-off Valve - Removal/Installation
 Figure 402



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TASK 28-21-05-400-802-A

EFFECTIVITY: ACFT WITH DRY WINGSTUB

5. ENGINE SHUT-OFF VALVE - INSTALLATION

A. General

- (1) Obey the instructions below to install the engine shut-off valve.

B. References

REFERENCE	DESIGNATION
28-21-00	-
AMM MPP 06-41-01/100	-
AMM MPP 28-00-00/200	- MAINTENANCE PRACTICES
AMM MPP 28-11-01/400	- REMOVAL/INSTALLATION
AMM TASK 12-11-01-600-801-A/300	FUEL-TANK PRESSURE REFUELING - SERVICING
AMM TASK 28-21-05-700-802-A/500	ENGINE 1/2 SHUT-OFF VALVES - OPERATIONAL CHECK
AMM TASK 28-21-11-700-802-A/500	FUEL-FEED-LINE LEAK TEST - OPERATIONAL TEST
AMM TASK 28-41-00-200-801-A/600	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
192	192BR	Center lower fairing
192	192AL	Center lower fairing

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Torque wrench	To tighten the attachment nuts	

E. Auxiliary Items

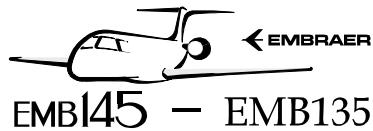
Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
Molykote DC-33 Light	Lubricant	AR

G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
O-ring	28-21-00	2



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H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Center lower fairing

I. Preparation

SUBTASK 841-005-A

- (1) On the circuit breaker panel, make sure that the circuit breakers below are open and with a DO-NOT-CLOSE tag attached to them:
 - FUEL PUMPS 1A/1B/1C.
 - FUEL PUMPS 2A/2B/2C.
 - START 1/2.
 - FUEL SOV 1/2.
 - FUEL CROSS-FEED.
- (2) Remove the protection caps or plugs from the disconnected points, if applicable.
- (3) Lightly apply Molykote lubricant to the O-rings (10).

J. Installation (Figure 402)

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) Install the O-rings (10) to the flanges (9) and (13).
- (2) Install the engine shut-off valve (11) between the flanges (9) and (13).
- (3) Install the bolts (1), spring washers (2), washers (3) and (4), and nuts (5).
- (4) Turn the tube (8) and install the nut (6) to the flange (9).
- (5) Tighten the nuts (6) and (7).
- (6) Remove the protection cap from the electric connector (12) and connect it to the engine shut-off valve (11).

K. Follow-on

SUBTASK 842-003-A

- (1) On the circuit breaker panel, close the circuit breakers below and remove the DO-NOT-CLOSE tag from them:
 - FUEL PUMPS 1A/1B/1C.
 - FUEL PUMPS 2A/2B/2C.
 - START 1/2.



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- FUEL SOV 1/2.
 - FUEL CROSS-FEED.
- (2) Refuel the fuel tanks as applicable ([AMM TASK 12-11-01-600-801-A/300](#)).
- (3) Do the Fuel-Feed-Line Leak Test ([AMM TASK 28-21-11-700-802-A/500](#)), and examine the engine shut-off valves and connections for leakage. Correct as necessary.
- (4) Do the engine shut-off valve adjustment/test ([AMM TASK 28-21-05-700-802-A/500](#)).
- (5) Do an inspection on the fuel quantity indication harness (AMM TASK 28-41-00-200-801-A/600).
- NOTE: The inspection of fuel quantity indication harness is a part of Critical Design Configuration Control Limitations (CDCCL) in the Airworthiness Limitations of the Maintenance Review Board Report (MRB).
- (6) Close access panels 192AL and 192BR (AMM MPP 06-41-01/100 and [AMM MPP 28-11-01/400](#)).

