



AIRCRAFT
MAINTENANCE MANUAL

TANK-UNIT HARNESS ASSEMBLY - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to remove and install the tank-unit harness assembly.
- 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
28-41-03-000-801-A	TANK-UNIT HARNESS ASSEMBLY - REMOVAL	ACFT WITH WET WINGSTUB
28-41-03-400-801-A	TANK-UNIT HARNESS ASSEMBLY - INSTALLATION	ACFT WITH WET WINGSTUB
28-41-03-000-802-A	TANK-UNIT HARNESS ASSEMBLY - REMOVAL	ACFT WITH DRY WINGSTUB
28-41-03-400-802-A	TANK-UNIT HARNESS ASSEMBLY - INSTALLATION	ACFT WITH DRY WINGSTUB



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TASK 28-41-03-000-801-A

EFFECTIVITY: ACFT WITH WET WINGSTUB

2. TANK-UNIT HARNESS ASSEMBLY - REMOVAL

A. General

- (1) Obey the instructions below to remove the tank-unit harness assembly.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
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 28-11-01-000-801-A/400	FUEL-TANK ACCESS PANELS - REMOVAL

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
155	155BZ	Wing stub
156	156BZ	Wing stub
192	192AL/192BR	Fuselage external access doors and panels
531	531AB/531BB/531CB/531DB/531EZ	Left-wing access doors and panels
541	541AB/541BB/541CB/541DB	Left-wing access doors and panels
631	631AB/631BB/631CB/631DB/631EZ	Right-wing access doors and panels
641	641AB/641BB/641CB/641DB	Right-wing access doors and panels

D. Tools and Equipment

Not Applicable

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	Underwing area



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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 tanks ([AMM TASK 12-11-01-600-802-A/300](#)).
- (2) On the circuit breaker panel, open the FUEL QTY 1/2 circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (3) (For aircraft with HLEIS) On the circuit breaker panel, open these circuit breakers and attach a DO-NOT-CLOSE tag to them.
 - REFUEL1 - DC BUS;
 - REFUEL2 - DC BUS.
- (4) Open access panels (AMM MPP 06-41-01/100), ([AMM MPP 06-44-00/100](#)) and ([AMM TASK 28-11-01-000-801-A/400](#)) shown below to get access to the tank unit harness:
 - (a) LH fuel tank:
 - 155BZ/192AL/531AB/531BB/531CB/531DB/531EZ/541AB/541BB/541CB/541DB.
 - (b) RH fuel tank:
 - 156BZ/192BR/631AB/631BB/631CB/631DB/631EZ/641AB/641BB/641CB/641DB.

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

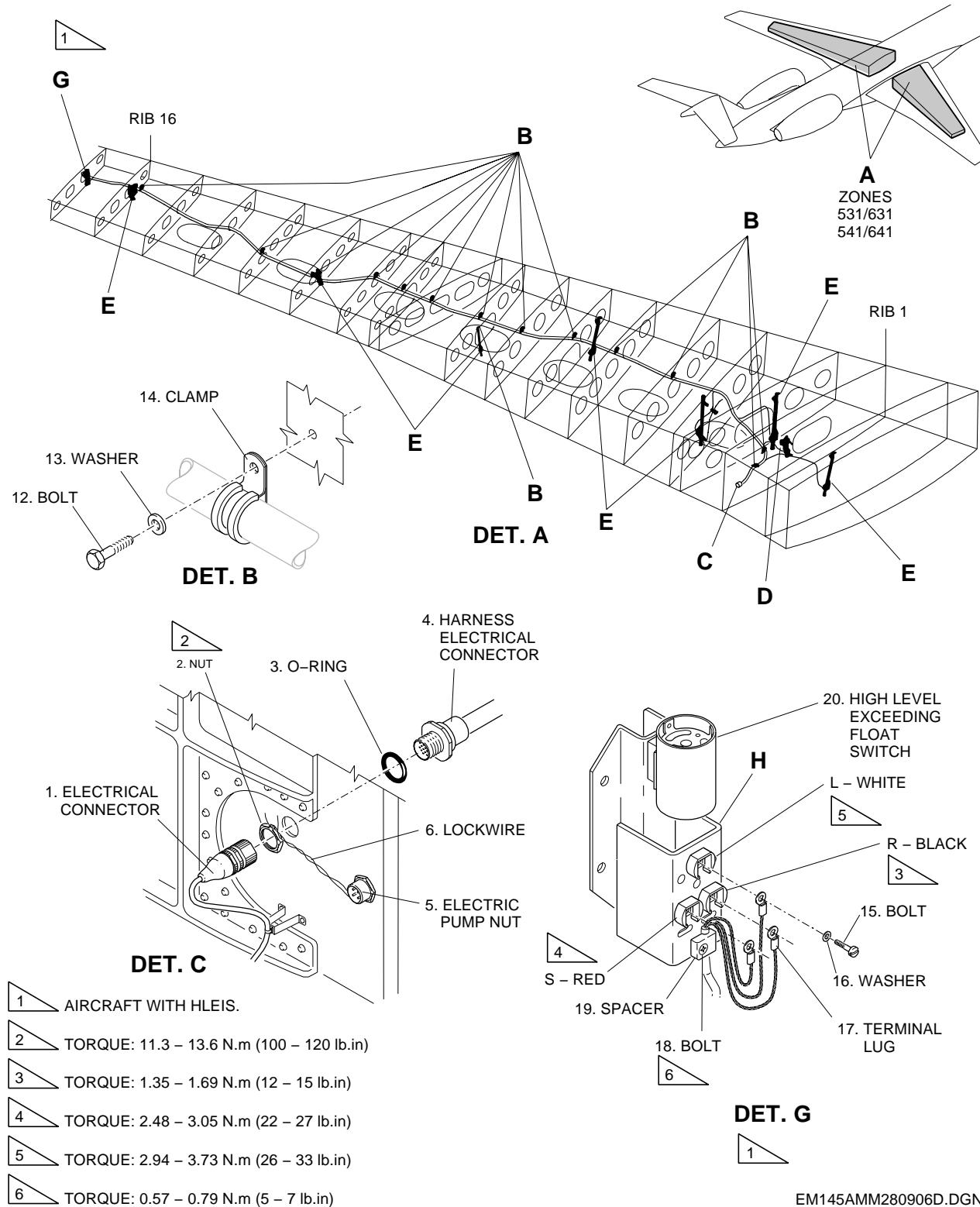
SUBTASK 020-002-A

- (1) Disconnect the electrical connector (1).
- (2) Remove the lockwire (6) and nut (2).
- (3) Remove and discard the O-ring (3).
- (4) Remove the bolts (7) and washers (8) from the terminal lugs (9) of the tank units and low level sensor.
- (5) Loosen the bolts (10) and spacers (11).
- (6) (For aircraft with HLEIS) Remove the bolts (15) and washers (16) from the terminal lugs (17) of the high level exceeding float switch. Loosen the bolt (18) and spacer (19).
- (7) Remove the bolts (12), washers (13), and clamps (14).
- (8) Remove the electrical harness from the tank: carefully pull the harness through the ribs and grommets.

EFFECTIVITY: EMB-145LR/LU AND EMB-135LR/KL MODELS

Tank-Unit Harness Assembly - Removal/Installation

Figure 401 - Sheet 1

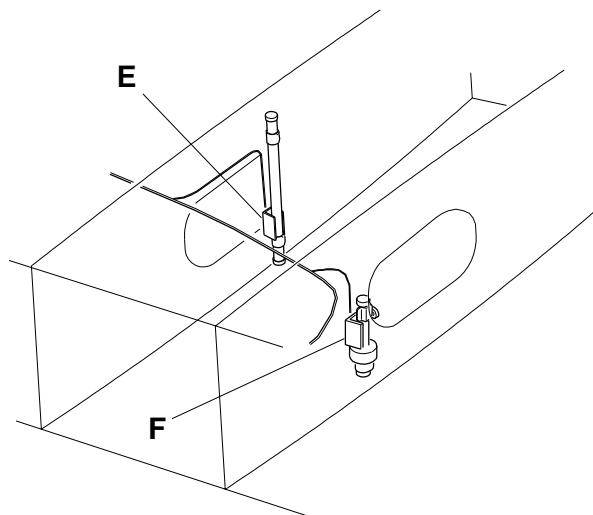


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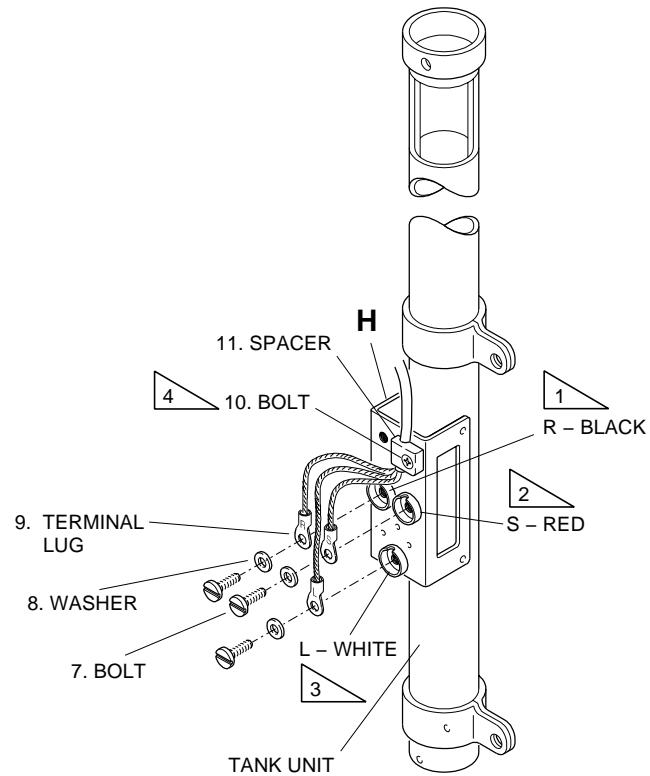
EFFECTIVITY: EMB-145LR/LU AND EMB-135LR/KL MODELS

Tank-Unit Harness Assembly - Removal/Installation

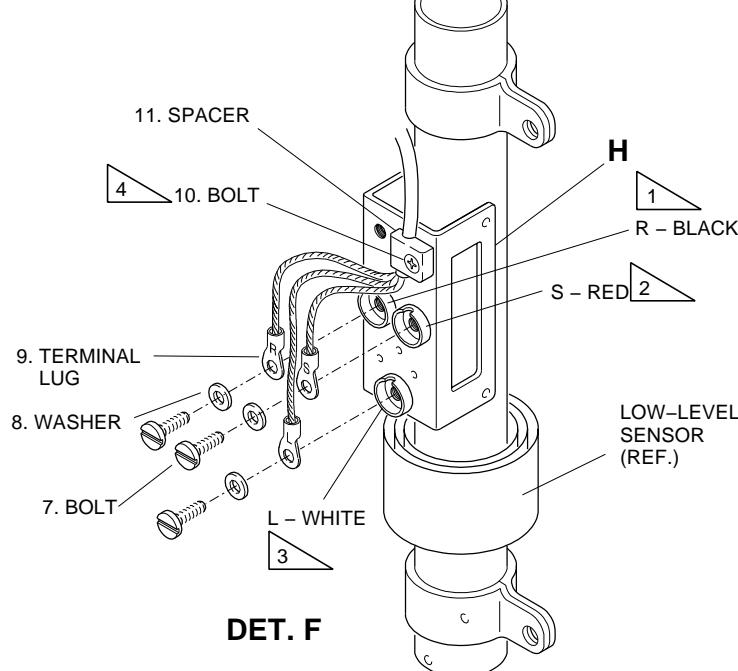
Figure 401 - Sheet 2



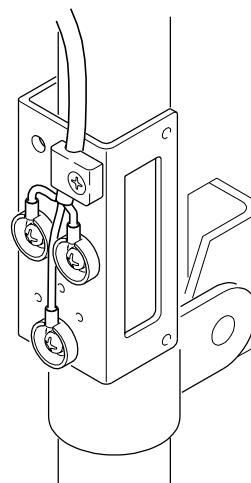
DET. D



DET. E



DET. F



**DET. H
(TYPICAL)**

- | | | | |
|---|---|---|---|
| 1 | TORQUE: 1.35 – 1.69 N.m (12 – 15 lb.in) | 3 | TORQUE: 2.94 – 3.73 N.m (26 – 33 lb.in) |
| 2 | TORQUE: 2.48 – 3.05 N.m (22 – 27 lb.in) | 4 | TORQUE: 0.57 – 0.79 N.m (5 – 7 lb.in) |

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TASK 28-41-03-400-801-A

EFFECTIVITY: ACFT WITH WET WINGSTUB

3. TANK-UNIT HARNESS ASSEMBLY - INSTALLATION

A. General

- (1) Obey the instructions below to install the tank-unit harness assembly.

B. References

REFERENCE	DESIGNATION
28-41-03	-
AMM MPP 06-41-01/100	-
AMM MPP 06-44-00/100	- COMPONENT LOCATION
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 28-11-01-400-801-A/400	FUEL-TANK ACCESS PANELS - INSTALLATION
AMM TASK 28-41-00-200-801-A/600	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
155	155BZ	Wing stub
156	156BZ	Wing stub
192	192AL/192BR	Fuselage external access doors and panels
531	531AB/531BB/531CB/531DB/531EZ	Left-wing access doors and panels
541	541AB/541BB/541CB/541DB	Left-wing access doors and panels
631	631AB/631BB/631CB/631DB/631EZ	Right-wing access doors and panels
641	641AB/641BB/641CB/641DB	Right-wing access doors and panels

D. Tools and Equipment

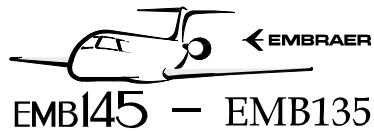
Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

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



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G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
O-ring	28-41-03	1

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Underwing area

I. Installation (Figure 401)

SUBTASK 420-002-A

- (1) Lightly apply Molykote grease to the O-ring (3).
- (2) Install the O-ring (3) on the harness electrical connector (4).
- (3) Through the ribs and grommets, put the electrical harness in its position in the tank.
- (4) Prepare the connector support surface for bonding. Do the bonding procedures method 13 ([AMM TASK 20-13-21-910-801-A/200](#)).
- (5) Install the harness electrical connector (4) with the nut (2). With lockwire (6), safety nut (2) to the electric pump nut (5).
- (6) Do the bonding protection for the connector (4) ([AMM TASK 20-13-21-910-802-A/200](#)).
- (7) Install the clamps (14), bolts (12), and washers (13).

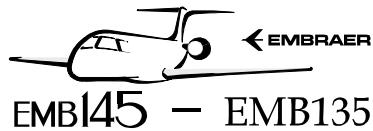
CAUTION: MAKE SURE THAT EACH TERMINAL LUG IS INSTALLED CORRECTLY. THE LETTERS "R", "S", AND "L" ON THE TERMINAL LUGS MUST AGREE WITH THOSE ON THE TANK UNITS AND LOW LEVEL SENSOR.

- (8) Put the terminal lugs (9) on the tank units and low level sensor.
- (9) Install the bolts (7) and washers (8).

CAUTION: WHEN YOU TIGHTEN THE SPACER:

- MAKE SURE THAT THE SPACER DOES NOT DAMAGE THE HARNESS OR THE WIRES OF THE TERMINALS.
- MAKE SURE THAT THE IDENTIFICATION TAG OF THE HARNESS IS OUT OF THE SPACER. THIS HELPS YOU TO IDENTIFY THE WIRES OF THE TANK UNITS.

- (10) Tighten the spacers (11) and bolts (10).
- (11) (For aircraft with HLEIS) Put the terminal lugs (17) on the high level exceeding float switch (20). Install the washers (16) and bolts (15) and tighten the spacer (19) and bolt (18).
- (12) Connect the electrical connector (1).



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J. Follow-on

SUBTASK 842-002-A

- (1) 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).

- (2) Close access panels (AMM MPP 06-41-01/100), ([AMM MPP 06-44-00/100](#)) and ([AMM TASK 28-11-01-400-801-A/400](#)):

- (a) LH fuel tank:

- 155BZ/192AL/531AB/531BB/531CB/531DB/531EZ/541AB/541BB/541CB/541DB.

- (b) RH fuel tank:

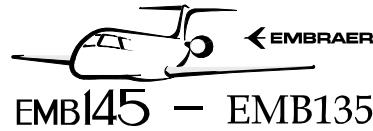
- 156BZ/192BR/631AB/631BB/631CB/631DB/631EZ/641AB/641BB/641CB/641DB.

- (3) On the circuit breaker panel, close the FUEL QTY 1/2 circuit breaker and remove the DO-NOT-CLOSE tag from it.

- (4) (For aircraft with HLEIS) On the circuit breaker panel, remove the DO-NOT-CLOSE tag and close these circuit breakers:

- REFUEL1 - DC BUS;
- REFUEL2 - DC BUS.

- (5) Refuel the tanks ([AMM TASK 12-11-01-600-801-A/300](#)) as applicable.



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TASK 28-41-03-000-802-A

EFFECTIVITY: ACFT WITH DRY WINGSTUB

4. TANK-UNIT HARNESS ASSEMBLY - REMOVAL

A. General

(1) Obey the instructions below to remove the tank-unit harness assembly.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
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 28-11-01-000-802-A/400	FUEL-TANK ACCESS PANELS - REMOVAL

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
155	155BZ	Wing stub
156	156BZ	Wing stub
192	192AL/192BR	Fuselage external access doors and panels
531	531AB/531BB/531CB/531DB/531EZ	Left-wing access doors and panels
541	541AB/541BB/541CB/541DB	Left-wing access doors and panels
631	631AB/631BB/631CB/631DB/631EZ	Right-wing access doors and panels
641	641AB/641BB/641CB/641DB	Right-wing access doors and panels

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

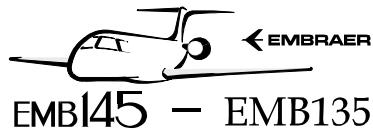
Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Underwing area



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I. Preparation

SUBTASK 841-003-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) Defuel the tanks ([AMM TASK 12-11-01-600-802-A/300](#)).
- (2) On the circuit breaker panel, open the FUEL QTY 1/2 circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (3) (For aircraft with HLEIS) On the circuit breaker panel, open these circuit breakers and attach a DO-NOT-CLOSE tag to them.
 - REFUEL1 - DC BUS;
 - REFUEL2 - DC BUS.
- (4) Open the access panels (AMM MPP 06-41-01/100), ([AMM MPP 06-44-00/100](#)) and ([AMM TASK 28-11-01-000-802-A/400](#)) shown below to get access to the tank unit harness:
 - (a) LH fuel tank:
 - 155BZ/192AL/531AB/531BB/531CB/531DB/531EZ/541AB/541BB/541CB/541DB.
 - (b) RH fuel tank:
 - 156BZ/192BR/631AB/631BB/631CB/631DB/631EZ/641AB/641BB/641CB/641DB.

J. Removal ([Figure 402](#))

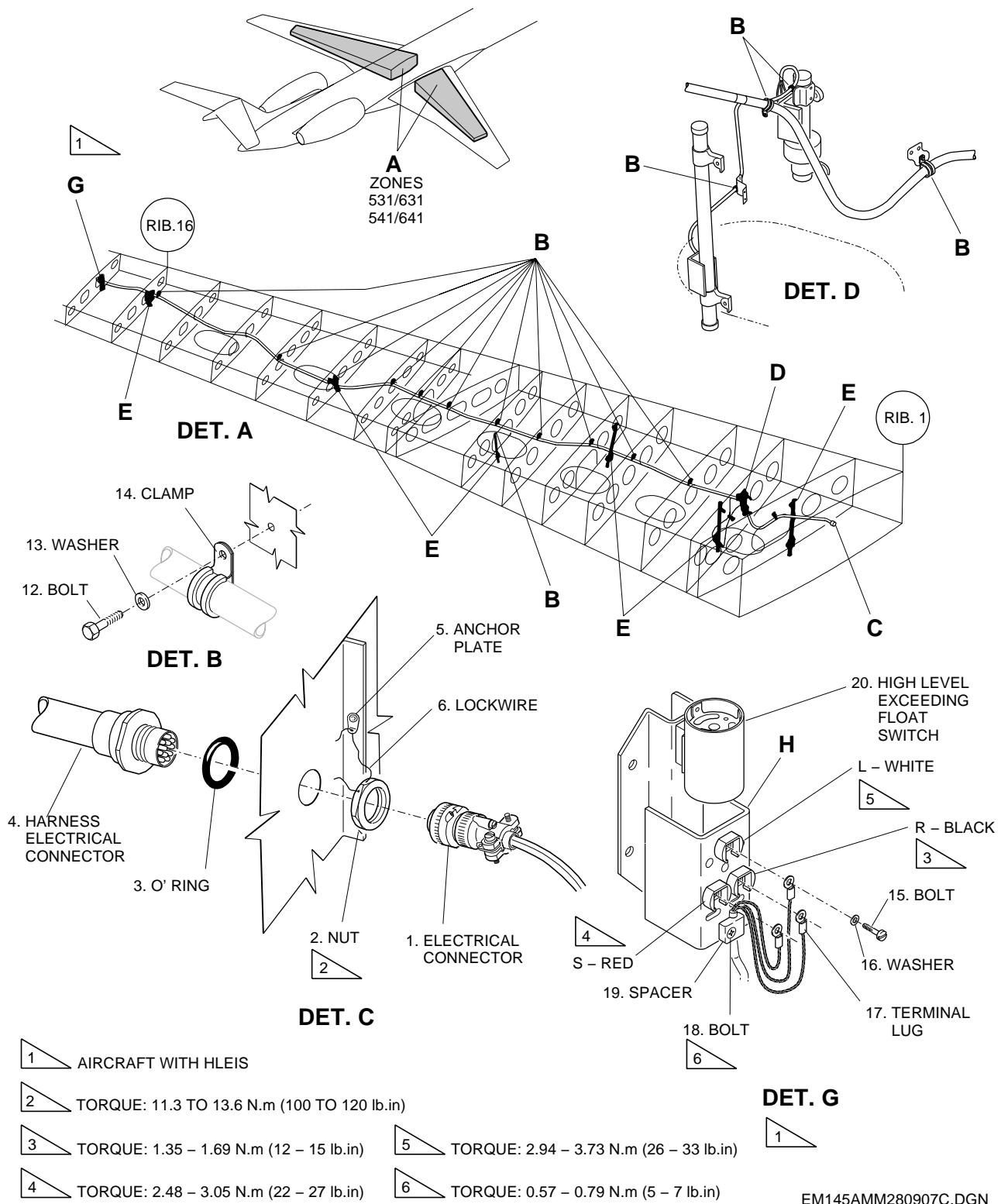
SUBTASK 020-003-A

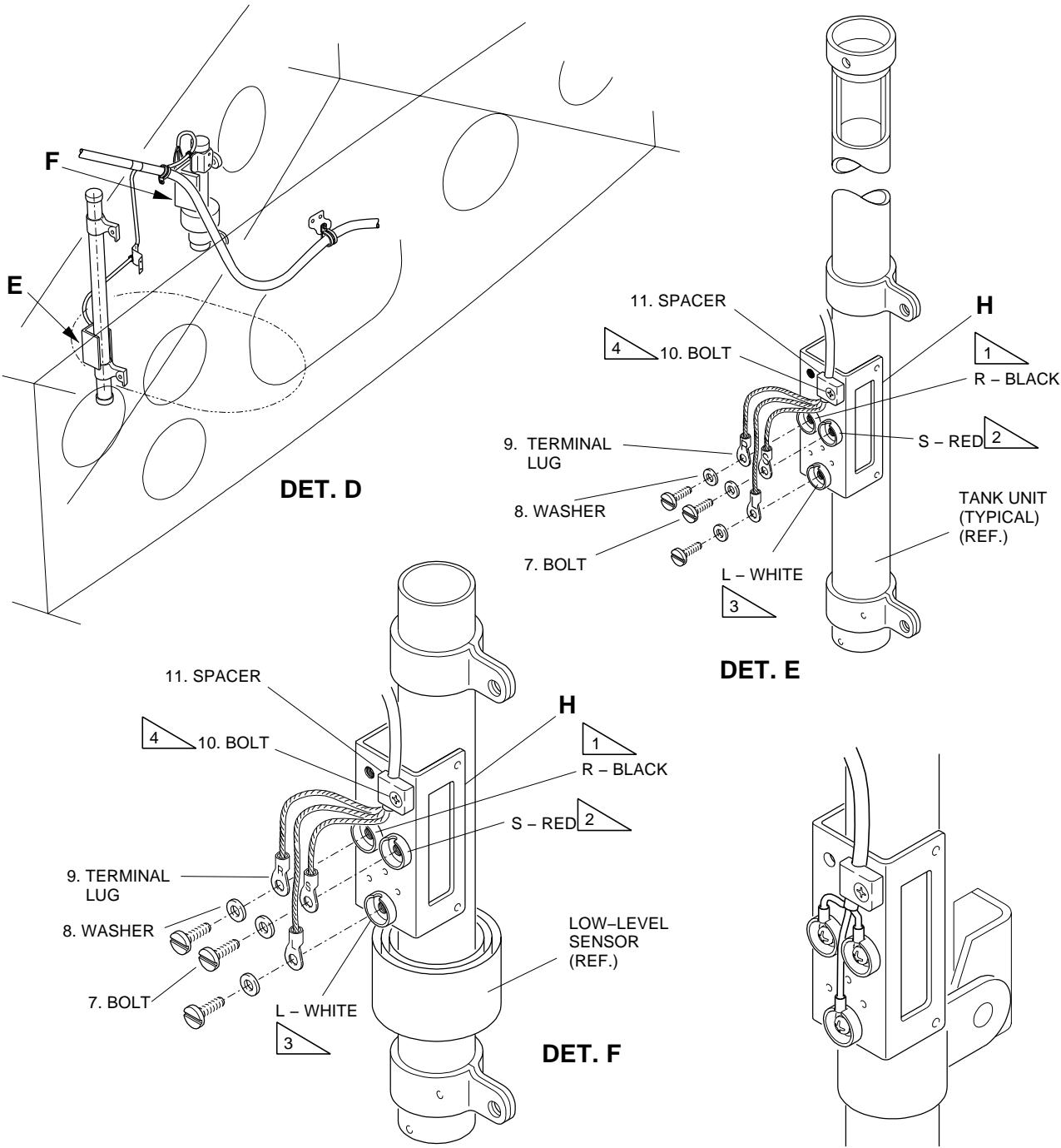
- (1) Disconnect the electrical connector (1).
- (2) Remove the lockwire (6) and nut (2).
- (3) Remove and discard the O-ring (3).
- (4) Remove the bolts (7) and washers (8) from the terminal lugs (9) of the tank units and low level sensor.
- (5) Loosen the bolts (10) and spacers (11).
- (6) (For aircraft with HLEIS) Remove the bolts (15) and washers (16) from the terminal lugs (17) of the high level exceeding float switch. Loosen the bolt (18) and spacer (19).
- (7) Remove the bolts (12), washers (13), and clamps (14).
- (8) Remove the electrical harness from the tank: carefully pull the harness through the ribs and grommets.

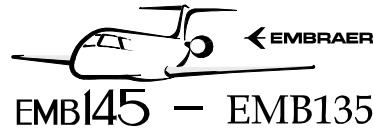
EFFECTIVITY: EMB-145MR/MP/MK/ER/EP/EU AND EMB-135ER/KE MODELS

Tank-Unit Harness Assembly - Removal/Installation

Figure 402 - Sheet 1



EFFECTIVITY: EMB-145MR/MP/MK/ER/EP/EU AND EMB-135ER/KE MODELS
Tank-Unit Harness Assembly - Removal/Installation
Figure 402 - Sheet 2




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TASK 28-41-03-400-802-A

EFFECTIVITY: ACFT WITH DRY WINGSTUB

5. TANK-UNIT HARNESS ASSEMBLY - INSTALLATION

A. General

(1) Obey the instructions below to install the tank-unit harness assembly.

B. References

REFERENCE	DESIGNATION
28-41-03	-
AMM MPP 06-41-01/100	-
AMM MPP 06-44-00/100	- COMPONENT LOCATION
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 28-11-01-400-802-A/400	FUEL-TANK ACCESS PANELS - INSTALLATION
AMM TASK 28-41-00-200-801-A/600	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
155	155BZ	Wing stub
156	156BZ	Wing stub
192	192AL/192BR	Fuselage external access doors and panels
531	531AB/531BB/531CB/531DB/531EZ	Left-wing access doors and panels
541	541AB/541BB/541CB/541DB	Left-wing access doors and panels
631	631AB/631BB/631CB/631DB/631EZ	Right-wing access doors and panels
641	641AB/641BB/641CB/641DB	Right-wing access doors and panels

D. Tools and Equipment

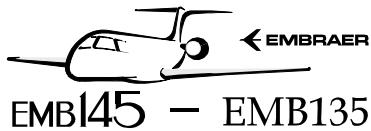
Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

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



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G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
O-ring	28-41-03	1

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Underwing area

I. Installation (Figure 402)

SUBTASK 420-003-A

- (1) Lightly apply Molykote grease to the O-ring (3).
- (2) Install the O-ring (3) on the harness electrical connector (4).
- (3) Through the ribs and grommets, put the electrical harness in its position in the tank.
- (4) Prepare the connector support surface for bonding. Do the bonding procedures method 13 ([AMM TASK 20-13-21-910-801-A/200](#)).
- (5) Install the harness electrical connector (4) with the nut (2) and lockwire (6). Use the anchor plate (5) of rib 1 to safety.
- (6) Do the bonding protection for the connector (4) ([AMM TASK 20-13-21-910-802-A/200](#)).
- (7) Install the clamps (14), bolts (12), and washers (13).

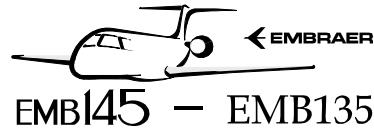
CAUTION: MAKE SURE THAT EACH TERMINAL LUG IS INSTALLED CORRECTLY. THE LETTERS "R", "S", AND "L" ON THE TERMINAL LUGS MUST AGREE WITH THOSE ON THE TANK UNITS AND LOW LEVEL SENSOR.

- (8) Put the terminal lugs (9) on the tank units and low level sensor.
- (9) Install the bolts (7) and washers (8).

CAUTION: WHEN YOU TIGHTEN THE SPACER:

- MAKE SURE THAT THE SPACER DOES NOT DAMAGE THE HARNESS OR THE WIRES OF THE TERMINALS.
- MAKE SURE THAT THE IDENTIFICATION TAG OF THE HARNESS IS OUT OF THE SPACER. THIS HELPS YOU TO IDENTIFY THE WIRES OF THE TANK UNITS.

- (10) Tighten the spacers (11) and bolts (10).
- (11) (For aircraft with HLEIS) Put the terminal lugs (17) on the high level exceeding float switch (20). Install the washers (16) and bolts (15) and tighten the spacer (19) and bolt (18).
- (12) Connect the electrical connector (1).



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J. Follow-on

SUBTASK 842-003-A

- (1) 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).

- (2) Close access panels (AMM MPP 06-41-01/100), ([AMM MPP 06-44-00/100](#)) and ([AMM TASK 28-11-01-400-802-A/400](#)):
 - (a) LH fuel tank:
 - 155BZ/192AL/531AB/531BB/531CB/531DB/531EZ/541AB/541BB/541CB/541DB.
 - (b) RH fuel tank:
 - 156BZ/192BR/631AB/631BB/631CB/631DB/631EZ/641AB/641BB/641CB/641DB.
- (3) On the circuit breaker panel, close the FUEL QTY 1/2 circuit breaker and remove the DO-NOT-CLOSE tag from it.
- (4) (For aircraft with HLEIS) On the circuit breaker panel, remove the DO-NOT-CLOSE tag and close these circuit breakers:
 - REFUEL1 - DC BUS;
 - REFUEL2 - DC BUS.
- (5) Refuel the tanks ([AMM TASK 12-11-01-600-801-A/300](#)) as applicable.

