

## ELECTRIC MOTOR-DRIVEN PUMP - REMOVAL/INSTALLATION

*EFFECTIVITY: ALL*

### 1. General

- A. This section gives the procedures to remove/install the EMDP (Electric-Motor-Driven Pump).
- B. The procedures for removal and installation of the EMDP of system 1 and system 2 are equivalent.
- C. The only difference between the two hydraulic pumps is their position in relation to the electrical-motor cooling-air scoop. Such a difference is shown in Figure 401.
- D. You can get access to the EMDP of system 1 through access panel 193BL (AMM MPP 06-41-01/100).
- E. You can get access to the EMDP of system 2 through 193CR (AMM MPP 06-41-01/100).
- F. If the replacement is because of a mechanical failure, examine the pressure and case drain filter elements for contamination ([AMM TASK 29-10-08-000-801-A/400](#)).
- G. 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 |
|------------------------------------|---------------------|-------------|
| <a href="#">29-10-04-000-801-A</a> | EMDP - REMOVAL      | ALL         |
| <a href="#">29-10-04-400-801-A</a> | EMDP - INSTALLATION | ALL         |

TASK 29-10-04-000-801-A

EFFECTIVITY: ALL

## 2. EMDP - REMOVAL

### A. General

(1) This task gives the procedures to remove the EMDP.

### B. References

| REFERENCE                                       | DESIGNATION                                 |
|---|---|
| AMM MPP 06-41-01/100                            | -   |
| <a href="#">AMM TASK 29-10-00-860-802-A/200</a> | HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP |

### C. Zones and Accesses

| ZONE | PANEL/DOOR | LOCATION                          |
|------|------------|-----------------------------------|
| 193  | 193BL      | Hydraulic compartment of system 1 |
| 193  | 193CR      | Hydraulic compartment of system 2 |

### D. Tools and Equipment

Not Applicable

### E. Auxiliary Items

| ITEM                   | DESCRIPTION   | PURPOSE   | QTY |
|------------------------|---|---|-----|
| Commercially available | Rubber Gloves, Phosphate Ester-Base, Fluid-Resistant  | Protection for the hands                                | 1   |
| Commercially available | Rubber Goggles, Phosphate Ester-Base, Fluid-Resistant | Protection for the eyes                                 | 1   |
| Commercially available | Drip Pan  | To collect the hydraulic fluid when you remove the EMDP | 1   |

### F. Consumable Materials

Not Applicable

### G. Expandable Parts

Not Applicable

### H. Persons Recommended

| QTY | FUNCTION      | PLACE  |
|-----|---------------|--|
| 1   | Does the task | Hydraulic compartment of system 1 and system 2 |

### I. Preparation

*SUBTASK 841-002-A*

- (1) On the circuit breaker panel, open the ELEC PUMP 1 and (or) ELEC PUMP 2 circuit breaker(s) and attach a DO-NOT-CLOSE tag to it (them).
- (2) Depressurize the related hydraulic system ( [AMM TASK 29-10-00-860-802-A/200](#)).
- (3) Remove access panel 193BL and (or) 193CR (AMM MPP 06-41-01/100).

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

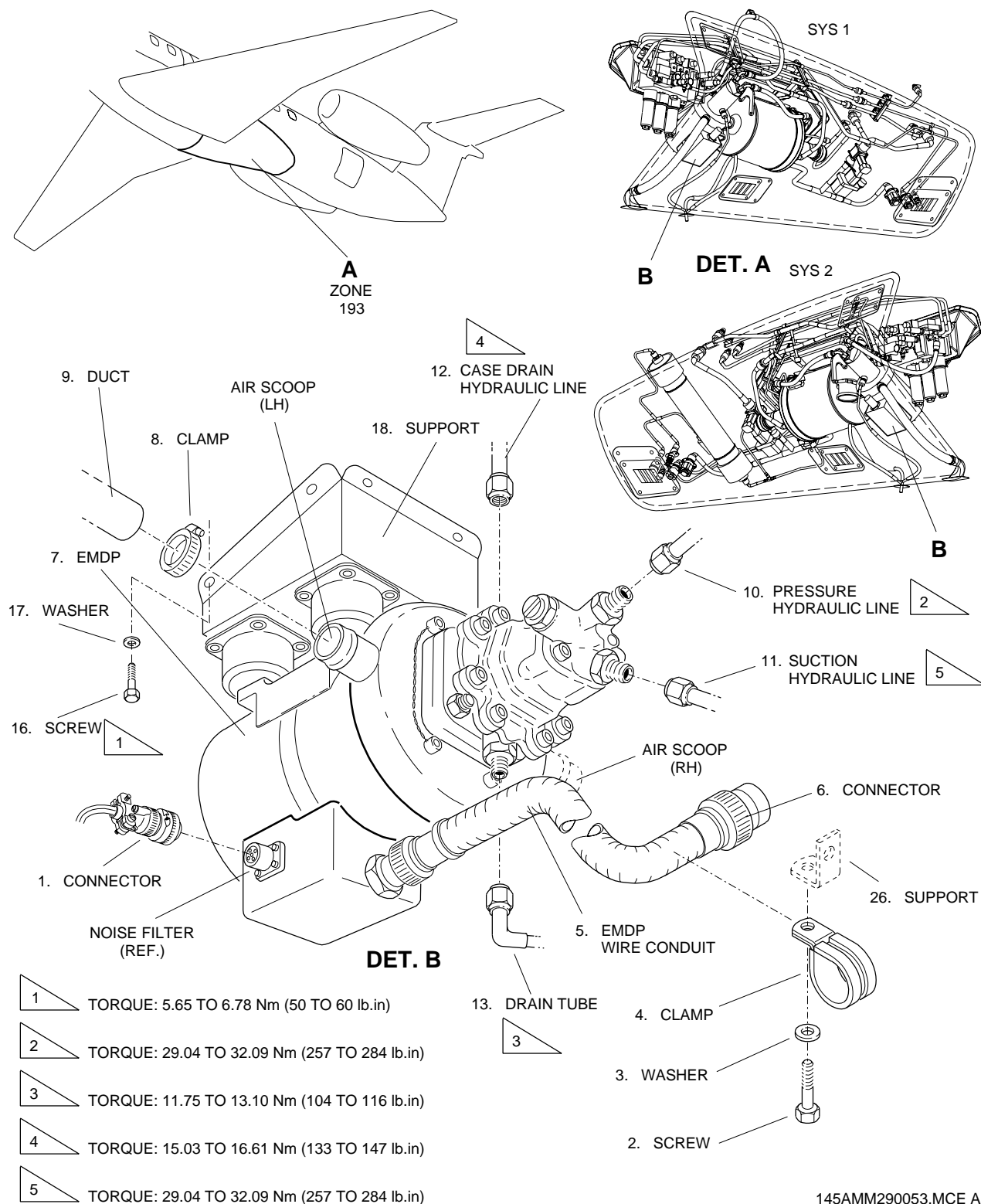
*SUBTASK 020-002-A*

**WARNING: THE HYDRAULIC SYSTEM CONTAINS PHOSPHATE-ESTER HYDRAULIC FLUID. THE FLUID CAN CAUSE IRRITATION IN YOUR SKIN OR INJURY TO YOUR EYES. USE THE APPLICABLE GOGGLES AND RUBBER GLOVES. IF THE FLUID TOUCHES YOU, FLUSH YOUR SKIN WITH WATER. IF IT GETS IN YOUR EYES, FLUSH THEM WITH WATER AND GET MEDICAL HELP.**

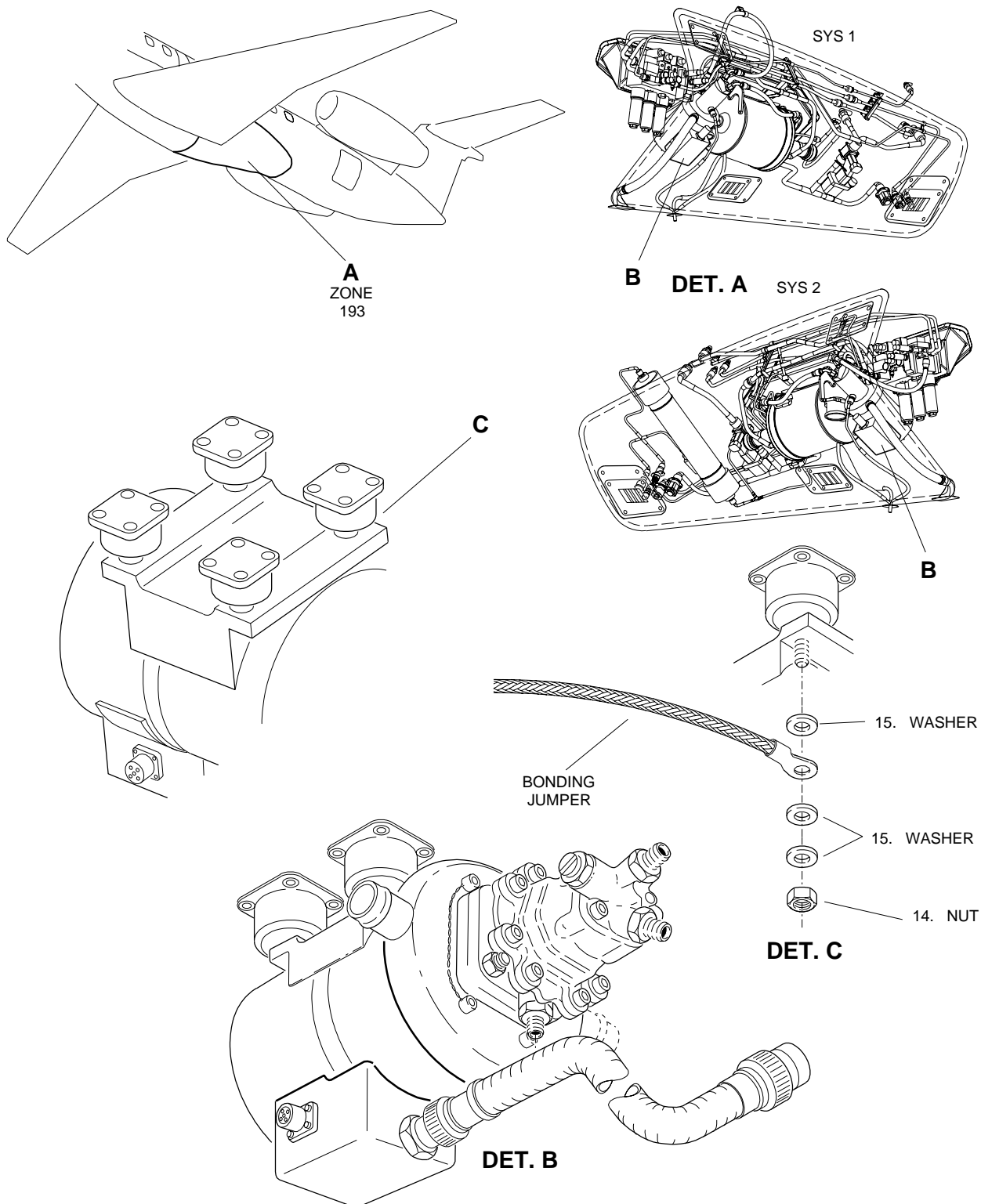
**CAUTION: DO NOT TOUCH THE ELECTRICAL PINS OF THE CONNECTORS. DAMAGE CAN OCCUR TO THE INTERNAL ESDS COMPONENTS.**

- (1) Disconnect the electrical connector (1) from the noise filter.
- (2) Put ESD protective cap on electrical connector (1).
- (3) Remove the screw (2) and washer (3) that attach the clamp (4) of the EMDP wire conduit (5).
- (4) Remove the clamp (4) of the EMDP wire conduit (5).
- (5) Disconnect the electrical connector (6) from the aircraft.
- (6) Put ESD protective cap on electrical connector (6).
- (7) Remove the clamp (8) that attaches the air-scoop outlet duct (9) from the EMDP (7).
- (8) Disconnect the air-scoop outlet duct (9).
- (9) Disconnect the pressure (10), suction (11), case drain (12) hydraulic lines, and drain tube (13).
- (10) Remove the nut (14) and the washers (15) that attach the end of the bonding jumper to the EMDP (7).
- (11) Hold the EMDP (7) and remove the screws (16) and washers (17) that attach the support (18) of the EMDP (7) to the rack.
- (12) Remove the support (18) together with the EMDP (7).

EFFECTIVITY: ALL  
EMDP - Removal/Installation  
Figure 401 - Sheet 1



EFFECTIVITY: ALL  
EMDP - Removal/Installation  
Figure 401 - Sheet 2

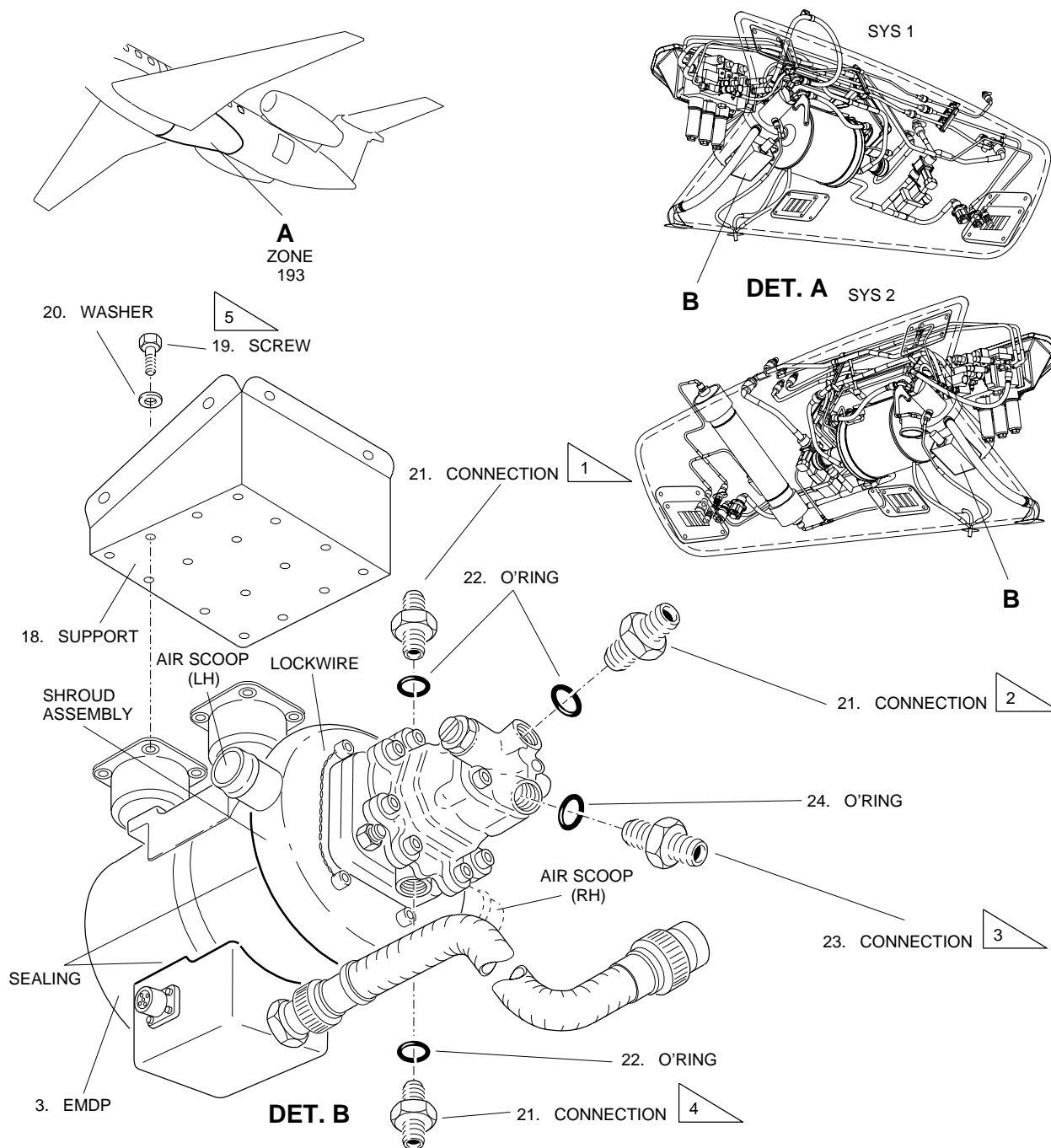


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EFFECTIVITY: ALL

Connections of the EMDP - Removal/Installation

Figure 402



1 TORQUE: 10.73 TO 11.86 Nm (95 TO 105 lb.in)

2 TORQUE: 10.73 TO 11.86 Nm (95 TO 105 lb.in)

3 TORQUE: 17.51 TO 18.64 Nm (155 TO 165 lb.in)

4 TORQUE: 10.73 TO 11.86 Nm (95 TO 105 lb.in)

5 TORQUE: 1.69 TO 2.26 Nm (15 TO 20 lb.in)

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TASK 29-10-04-400-801-A  
EFFECTIVITY: ALL

### 3. EMDP - INSTALLATION

#### A. General

(1) This task gives the procedures to install the EMDP.

#### B. References

| REFERENCE                                       | DESIGNATION   |
|---|---|
| AMM MPP 06-41-01/100                            | -   |
| <a href="#">AMM TASK 12-13-01-600-802-A/300</a> | HYDRAULIC SYSTEM RESERVOIR - REPLENISHMENT                                |
| <a href="#">AMM TASK 20-13-21-910-801-A/200</a> | TYPES OF ELECTRICAL BONDING AND SURFACE PREPARATION - STANDARD PROCEDURES |
| <a href="#">AMM TASK 29-10-00-860-801-A/200</a> | HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS                                |
| <a href="#">AMM TASK 29-10-00-860-803-A/200</a> | HYDRAULIC SYSTEM - BLEED OF AIR   |
| IPC 29-10-04                                    | ELECTRIC MOTOR DRIVEN PUMP  |

#### C. Zones and Accesses

| ZONE | PANEL/DOOR | LOCATION                          |
|------|------------|-----------------------------------|
| 193  | 193BL      | Hydraulic compartment of system 1 |
| 193  | 193CR      | Hydraulic compartment of system 2 |

#### D. Tools and Equipment

| ITEM                   | DESCRIPTION   | PURPOSE              | QTY |
|------------------------|---------------|----------------------|-----|
| Commercially available | Torque wrench | To apply the torques |     |

#### E. Auxiliary Items

| ITEM                   | DESCRIPTION   | PURPOSE                  | QTY |
|------------------------|---|--------------------------|-----|
| Commercially available | Rubber Gloves, Phosphate Ester-Base, Fluid-Resistant  | Protection for the hands | 1   |
| Commercially available | Rubber Goggles, Phosphate Ester-Base, Fluid-Resistant | Protection for the eyes  | 1   |

#### F. Consumable Materials

| SPECIFICATION<br>(BRAND) | DESCRIPTION        | QTY |
|--------------------------|--------------------|-----|
| MIL-S-8802D              | Sealant PR 1422-A2 | AR  |

G. Expendable Parts

| ITEM     | IPC REFERENCE<br>(VENDOR REFERENCE) | QTY   |
|----------|-------------------------------------|-------|
| O-ring   | IPC 29-10-04                        | 3/LRU |
| O-ring   | IPC 29-10-04                        | 1/LRU |
| Lockwire | IPC 29-10-04                        | AR    |

H. Persons Recommended

| QTY | FUNCTION      | PLACE  |
|-----|---------------|--|
| 1   | Does the task | Hydraulic compartment of system 1 and system 2 |

I. Preparation (Figure 402)

**SUBTASK 841-003-A**

- (1) Remove the screws (19) and washers (20) that attach the EMDP (7) to the support (18).
- (2) Remove the connections (21) with the related O-rings (22) from the used EMDP (7).
- (3) Remove the connections (23) with the related O-ring (24) from the used EMDP (7).
- (4) Discard the O-rings (22) removed in step (2).
- (5) Discard the O-ring (24) removed in step (3).
- (6) Install the connections (21) with the related new O-rings (22) to the new EMDP (7). Torque the connections (21) as given in (Figure 402).
- (7) Install the connection (23) with the related new O-ring (24) to the new EMDP (7). Torque the connection (23) as given in (Figure 402).
- (8) If necessary, change the position of the shroud assembly (25) of the new EMDP (7) to connect the air-scoop outlet duct (9). Then safety the shroud assembly (25).
- (9) Apply the sealing compound to all areas of the EMDP (7) where water can go into.
- (10) Put the new EMDP (7) on the support (18) and install the washers (20) and screws (19). Torque the screws (19) as given in (Figure 402).

J. Installation (Figure 401)

**SUBTASK 420-002-A**

**CAUTION:** DO NOT TOUCH THE ELECTRICAL PINS OF THE CONNECTORS. DAMAGE CAN OCCUR TO THE INTERNAL ESDS COMPONENTS.

- (1) Put the new EMDP (7) together with its support (18) to the rack of the hydraulic system.
- (2) Install the washers (17) and screws (16). Torque the screws (16) as given in (Figure 401).

- (3) Install the end of the bonding jumper to the new EMDP (7) with the washers (15) and nut (14). Refer to [AMM TASK 20-13-21-910-801-A/200](#).
- (4) Connect the pressure hydraulic (10) line and drain tube (13). Torque as given in (Figure 401).
- (5) Connect the suction hydraulic line (11).
- (6) Fill the EMDP (7) through the case drain hydraulic line (12).
- (7) Connect the case drain hydraulic line (12). Torque as given in (Figure 401).
- (8) Remove the ESD protective cap from the electrical connector (1).
- (9) Connect the electrical connector (1) to the noise filter.
- (10) Install the EMDP wire conduit (5) on the clamp (4).
- (11) Install the clamp (4) to its support (26).
- (12) Remove the ESD protective cap from the electrical connector (6).
- (13) Connect the electrical connector (6) to the EMDP (7).
- (14) Connect the air-scoop outlet duct (9) and attach with the clamp (8).

K. Follow-on

*SUBTASK 842-002-A*

- (1) On the circuit breaker panel, close the ELEC PUMP 1 and (or) ELEC PUMP 2 circuit breaker(s) and remove the DO-NOT-CLOSE tag from it (them).
- (2) Pressurize the related hydraulic system through the EMDP ( [AMM TASK 29-10-00-860-801-A/200](#)). Do the bleed of air from the hydraulic system lines ( [AMM TASK 29-10-00-860-803-A/200](#)).
- (3) Torque the connections of the suction hydraulic line (11) as given in (Figure 401).
- (4) Fill the hydraulic reservoir ( [AMM TASK 12-13-01-600-802-A/300](#)).
- (5) Pressurize the related hydraulic system through the EMDP ( [AMM TASK 29-10-00-860-801-A/200](#)). Make sure that there are no leaks in the EMDP and that the pressure shown on the MFD (Multi-Function Display) is  $2900 \pm 200$  psi.
- (6) Install access panels 193BL and (or) 193CR (AMM MPP 06-41-01/100).

