

ENGINE DRAIN LINES - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

- A. This section gives the procedure to remove/install the engine drain lines.
- 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 |
|--------------------|-----------------------------------|-------------|
| 71-71-01-000-801-A | ENGINE DRAIN LINES - REMOVAL | ALL |
| 71-71-01-400-801-A | ENGINE DRAIN LINES - INSTALLATION | ALL |

TASK 71-71-01-000-801-A

EFFECTIVITY: ALL

2. ENGINE DRAIN LINES - REMOVAL

A. General

(1) These procedures are applicable to the LH and RH engines.

B. References

| REFERENCE | DESIGNATION |
|---------------------------------|--------------------------------|
| AMM MPP 71-00-00/200 | - MAINTENANCE PRACTICES |
| AMM TASK 71-12-01-000-801-A/400 | ENGINE LOWER COWLING - OPENING |

C. Zones and Accesses

| ZONE | PANEL/DOOR | LOCATION |
|------|------------|-------------------------|
| 413 | | LH Engine lower cowling |
| 423 | | RH Engine lower cowling |

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

| ITEM | DESCRIPTION | PURPOSE | QTY |
|------------------------|-------------|---|-----|
| Commercially available | Ladder | To get access to the engine | 1 |
| Commercially available | Containers | To collect fluids from the engine drain lines | AR |

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

| QTY | FUNCTION | PLACE |
|-----|---------------|--------|
| 1 | Does the task | Engine |

I. Preparation

SUBTASK 841-002-A

WARNING: BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN [AMM MPP 71-00-00/200](#) TO PREVENT INJURY TO PERSONS AND DAMAGE TO MATERIAL.

(1) On the circuit breaker panel, open the circuit breakers below and attach a DO-NOT-CLOSE tag to them:

- START 1/2.
- (2) Put the ladder in the work area.
- (3) Open the lower cowling ([AMM TASK 71-12-01-000-801-A/400](#)) to get access to the engine drains.

J. Removal ([Figure 401](#)) ([Figure 402](#))

SUBTASK 020-002-A

- WARNING:**
- **USE APPLICABLE CONTAINERS TO COLLECT THE REMAINING FLUIDS FROM THE OPEN LINES TO KEEP THE WORK AREA CLEAN AND SAFE.**
 - **THE PHOSPHATE-ESTER-BASE OIL CAUSES INJURY TO THE SKIN AND EYES ITS VAPORS ARE HIGHLY CORROSIVE. BE CAREFUL NOT TO TOUCH THIS OIL. YOU MUST USE GLOVES AND GOGGLES.**

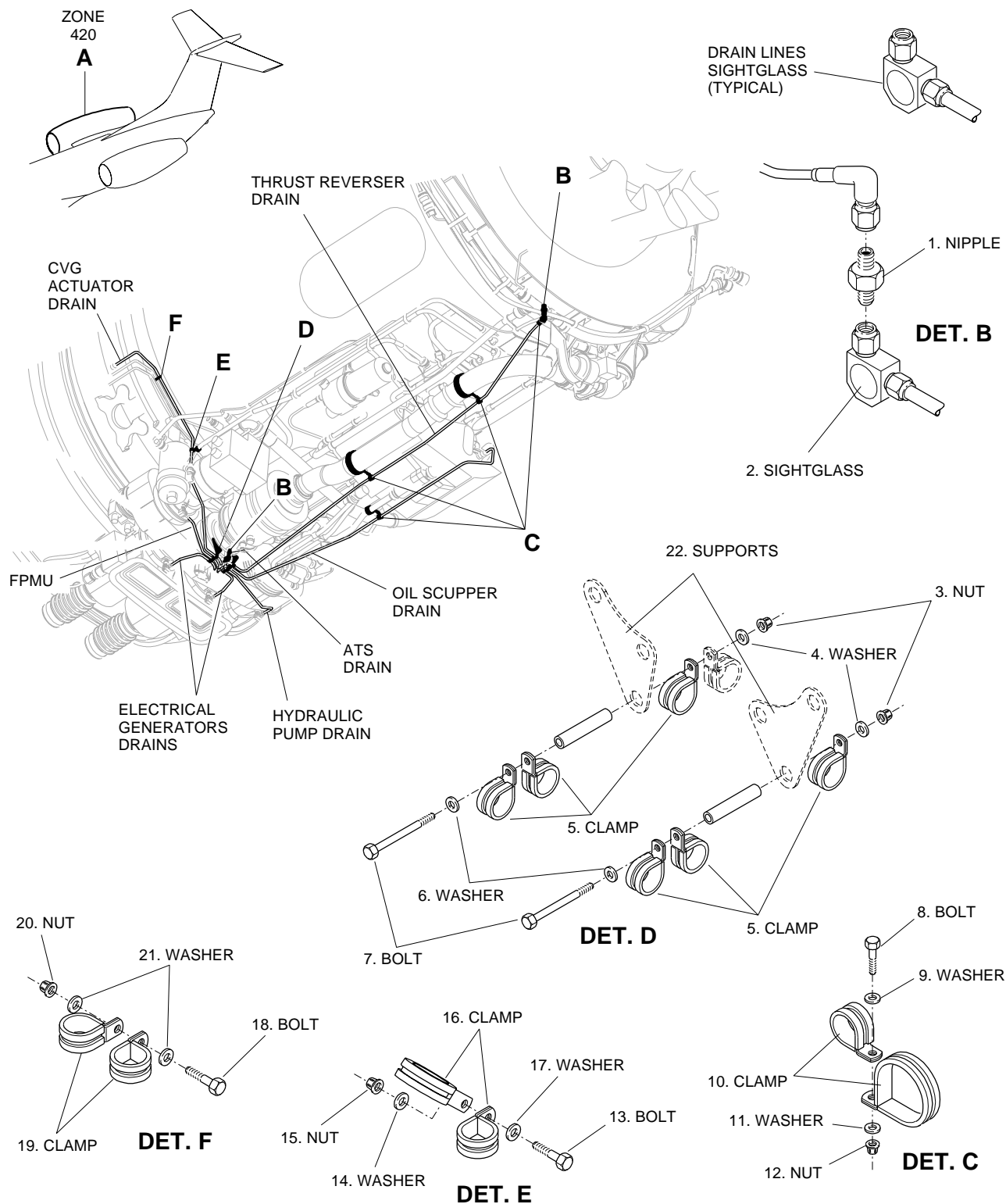
CAUTION: ALWAYS CLEAN THE HYDRAULIC FLUID THAT FALLS FROM THE ENGINE. DAMAGE COULD COME FROM ITS CORROSIVE ACTION.

- (1) Remove the bolts (7), nuts (3) and washers (4) and (6) that attach the clamps (5) to the supports (22).
- (2) Remove the bolts (8), nuts (12), and washers (9) and (11) that attach the clamps (10).
- (3) Remove the bolt (13), nut (15), and washers (14) and (17) that attach the clamps (16).
- (4) Remove the bolt (18), nut (20), and washers (21) that attach the clamps (19).
- (5) Disconnect the drain lines at the LRUs below:
 - CGV actuator.
 - Electrical generators.
 - Hydraulic pump.
 - Fuel pump.
 - Oil scupper.
 - Reverse line drain.
- (6) For engines with sightglasses: when necessary, disconnect from the nipples (1) the drain sightglasses (2), which are installed in the drain lines.
- (7) For engines without sightglasses: when necessary, disconnect from the nipples the elbows, which are installed in the drain lines.
- (8) Install the protection caps to the disconnected points.

EFFECTIVITY: ENGINE WITH SIGHTGLASSES

Engine Drains - Removal/Installation

Figure 401

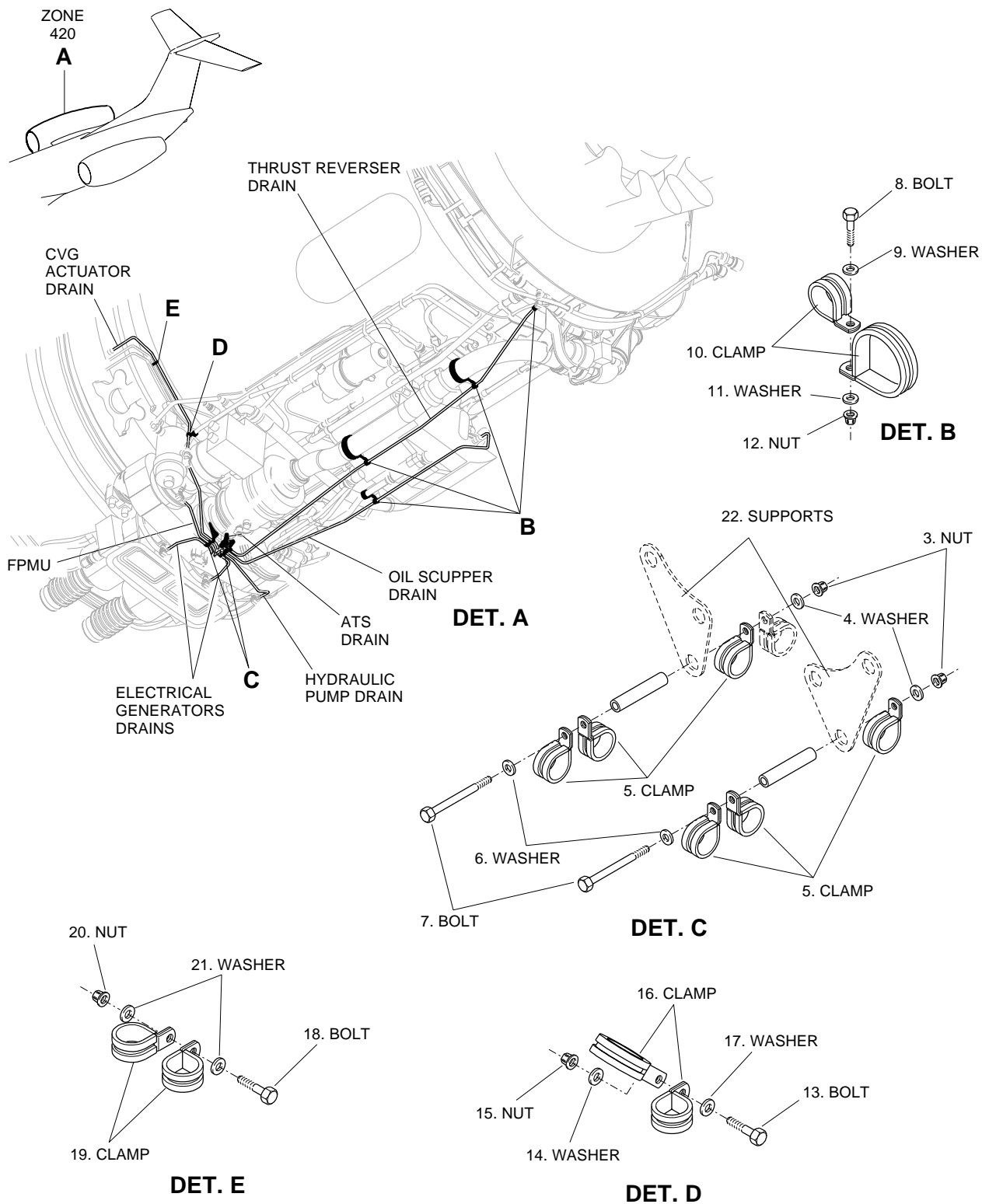


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EFFECTIVITY: ENGINE WITHOUT SIGHTGLASSES

Engine Drains - Removal/Installation

Figure 402



EM145AMM710225A.DGN

TASK 71-71-01-400-801-A

EFFECTIVITY: ALL

3. ENGINE DRAIN LINES - INSTALLATION

A. General

(1) These procedures are applicable to the LH and RH engines.

B. References

| REFERENCE | DESIGNATION |
|---|--------------------------------|
| AMM MPP 71-00-00/200 | - MAINTENANCE PRACTICES |
| AMM TASK 71-12-01-400-801-A/400 | ENGINE LOWER COWLING - CLOSING |

C. Zones and Accesses

| ZONE | PANEL/DOOR | LOCATION |
|------|------------|-------------------------|
| 413 | | LH Engine lower cowling |
| 423 | | RH Engine lower cowling |

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

| ITEM | DESCRIPTION | PURPOSE | QTY |
|------------------------|-------------|-----------------------------|-----|
| Commercially available | Ladder | To get access to the engine | 1 |

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

| QTY | FUNCTION | PLACE |
|-----|---------------|--------|
| 1 | Does the task | Engine |

I. Installation (Figure 401) (Figure 402)

SUBTASK 420-002-A

WARNING: • **BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN [AMM MPP 71-00-00/200](#) TO PREVENT INJURY TO PERSONS AND DAMAGE TO MATERIAL.**

- **USE APPLICABLE CONTAINERS TO COLLECT THE REMAINING FLUIDS FROM THE OPEN LINES TO KEEP THE WORK AREA CLEAN AND SAFE.**
- **THE PHOSPHATE-ESTER-BASE OIL CAUSES INJURY TO THE SKIN AND EYES ITS VAPORS ARE HIGHLY CORROSIVE. BE CAREFUL NOT TO TOUCH THIS OIL. YOU MUST USE GLOVES AND GOGGLES.**

CAUTION: ALWAYS CLEAN THE HYDRAULIC FLUID THAT FALLS FROM THE ENGINE. DAMAGE COULD COME FROM ITS CORROSIVE ACTION.

- (1) Remove the protection caps from the disconnected points, if applicable.
- (2) Before you install the engine drains, make sure that all line drains are clean.
- (3) For engines with sightglasses: when necessary, connect the drain sightglasses (2) to the nipples (1), which are installed in the drain lines.
- (4) For engines without sightglasses: when necessary, connect the elbows to the nipples, which are installed in the drain lines.
- (5) Connect the drain lines at the LRUs below:
 - CGV actuator.
 - Electrical generators.
 - Hydraulic pump.
 - Fuel pump.
 - Oil scupper.
 - Reverse line drain.
- (6) Install the bolts (7) with washers (6) and (4), nuts (3) and clamps (5) to the supports (22).
- (7) Install the bolts (8) with washers (9) and (11), nuts (12), and clamps (10).
- (8) Install the bolt (13) with washer (14) and (17), nut (15) and clamps (16).
- (9) Install the bolt (18), washer (21), nut (20) and clamps (19).

J. Follow-on

SUBTASK 842-002-A

- (1) Close the lower cowling ([AMM TASK 71-12-01-400-801-A/400](#)).
- (2) Remove the ladder.



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