



AIRCRAFT MAINTENANCE MANUAL

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



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EMB145 - EMB135

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:



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- 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.

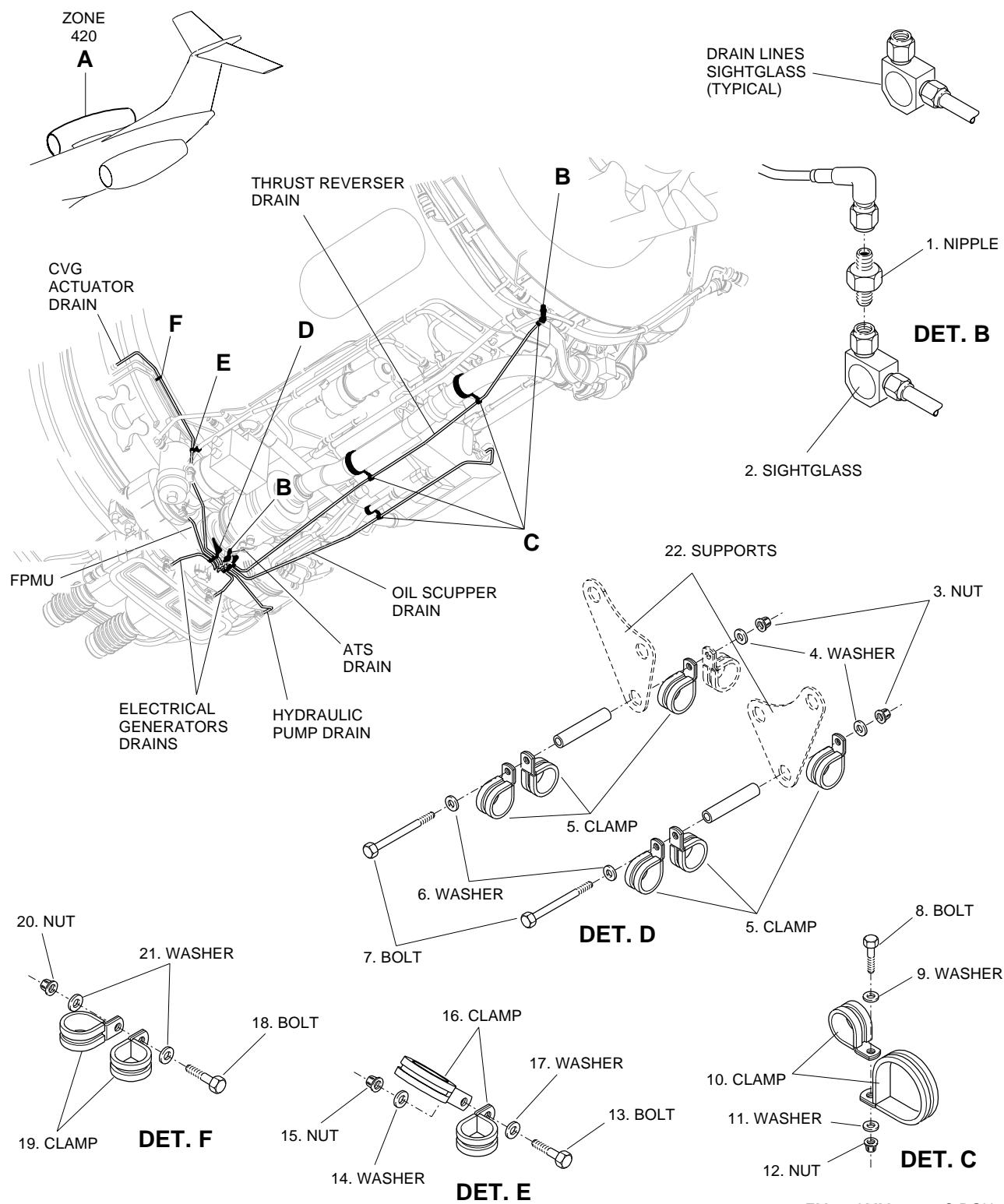
CAUTION: ALWAYS CLEAN THE HYDRAULIC FLUID THAT FALLS FROM THE ENGINE. DAMAGE COULD COME FROM ITS CORROSIVE ACTION.

- (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

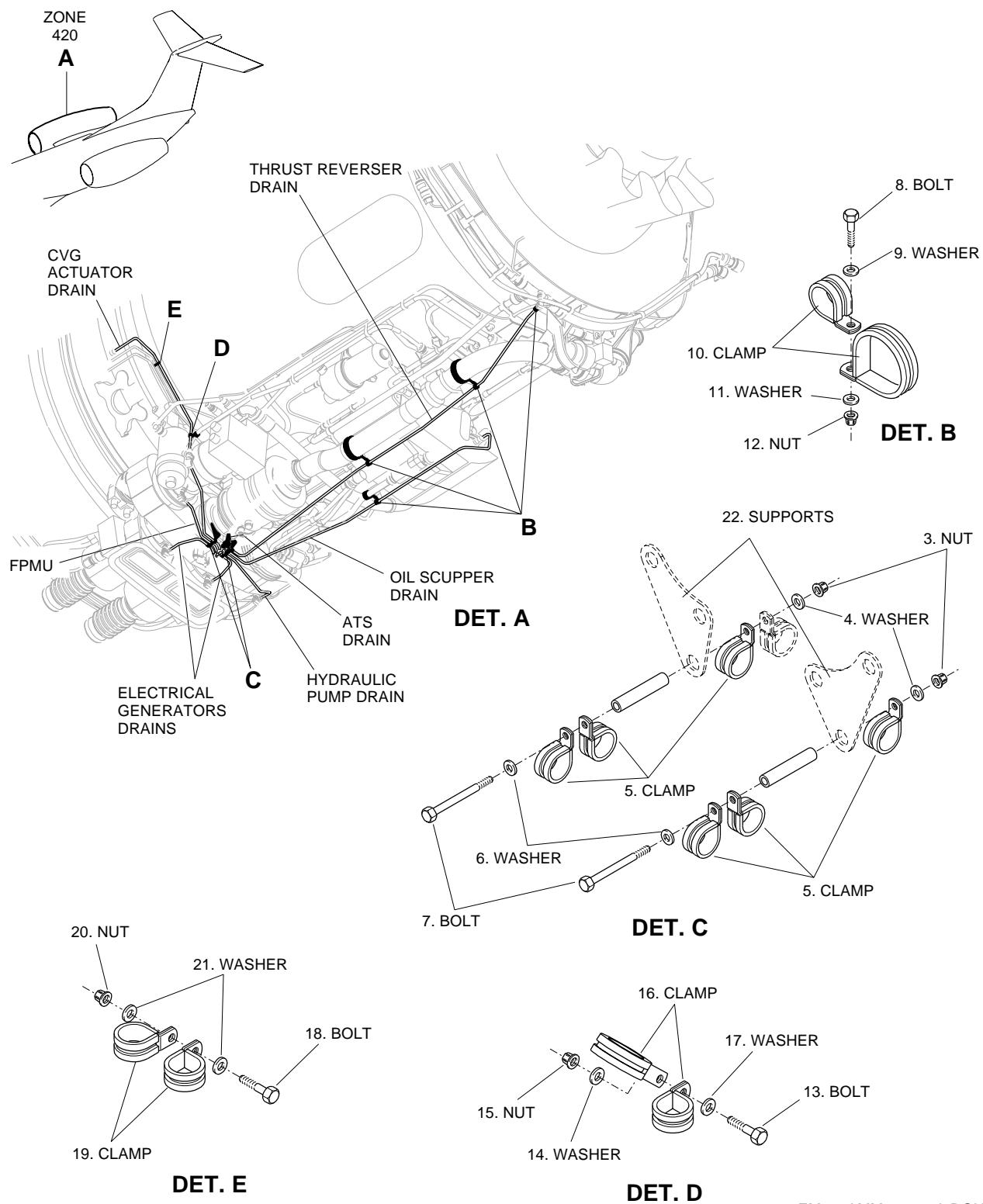
Figure 401



EFFECTIVITY: ENGINE WITHOUT SIGHTGLASSES

Engine Drains - Removal/Installation

Figure 402



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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

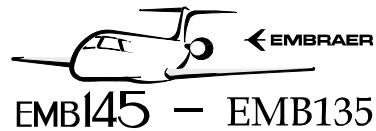
Not Applicable

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.

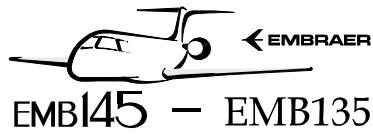
CAUTION: ALWAYS CLEAN THE HYDRAULIC FLUID THAT FALLS FROM THE ENGINE. DAMAGE COULD COME FROM ITS CORROSIVE ACTION.

- (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.



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