

## EXHAUST NOZZLE - REMOVAL/INSTALLATION

*EFFECTIVITY: ALL*

### 1. General

- A. This section gives the procedures to remove/install the engine exhaust nozzle. These procedures are applicable to the LH and RH engines.
- 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
78-11-01-000-801-A	ENGINE EXHAUST NOZZLE - REMOVAL	ALL
78-11-01-400-801-A	ENGINE EXHAUST NOZZLE - INSTALLATION	ALL

TASK 78-11-01-000-801-A

EFFECTIVITY: ALL

## 2. ENGINE EXHAUST NOZZLE - REMOVAL

### A. General

(1) Obey the instructions below to remove the engine exhaust nozzle.

### B. References

REFERENCE	DESIGNATION
<a href="#">AMM MPP 78-10-00/200</a>	- MAINTENANCE PRACTICES
<a href="#">AMM TASK 71-11-01-000-801-A/400</a>	ENGINE UPPER COWLING - REMOVAL
<a href="#">AMM TASK 71-12-01-000-802-A/400</a>	ENGINE LOWER COWLING - REMOVAL
<a href="#">AMM TASK 71-13-01-000-801-A/400</a>	NACELLE APRON - REMOVAL

### C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
412	LH Upper Cowling	Engine Nacelle
422	RH Upper Cowling	Engine Nacelle
413	LH Lower Cowling	Engine Nacelle
423	RH Lower Cowling	Engine Nacelle

### D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
<a href="#">GSE 184</a>	Lifter - Nacelle Exhaust Module LH/RH	To remove/install the engine exhaust nozzle	
Commercially available	Workstand	To get access to the work area	
Commercially available	Hoist	To lift the exhaust nozzle	

### E. Auxiliary Items

Not Applicable

### F. Consumable Materials

Not Applicable

### G. Expandable Parts

Not Applicable

### H. Persons Recommended

QTY	FUNCTION	PLACE
2	Do the task	In the work area

I. Preparation

SUBTASK 841-002-A

**WARNING:** • REFER TO THE GROUND SAFETY PRECAUTIONS GIVEN IN **AMM MPP 78-10-00/200** WHEN YOU DO THE ENGINE EXHAUST NOZZLE MAINTENANCE PROCEDURES.

- DO NOT TOUCH THE ENGINE COMPONENTS UNTIL THEY ARE COOL. TEMPERATURE STAYS HOT AFTER ENGINE STOPS.

- (1) Put the workstand in the work area.
- (2) Remove the engine lower cowling (**AMM TASK 71-12-01-000-802-A/400**).
- (3) Remove the engine upper cowling (**AMM TASK 71-11-01-000-801-A/400**).
- (4) Remove the nacelle apron (**AMM TASK 71-13-01-000-801-A/400**).
- (5) Remove the nacelle trailing-edge fairing.

J. Removal (**Figure 401**)

SUBTASK 020-002-A

**WARNING:** REFER TO THE GROUND SAFETY PRECAUTIONS GIVEN IN **AMM MPP 78-10-00/200** WHEN YOU DO THE ENGINE EXHAUST NOZZLE MAINTENANCE PROCEDURES.

**CAUTION:** DO NOT HIT THE EXHAUST NOZZLE, OR THE AIRCRAFT, DURING THE REMOVAL PROCEDURE.

- (1) Get access and install the lifter to the engine exhaust nozzle.

**NOTE:** The front adapter of the lifter permits RH and LH side installation. Put the lifter on the adapter right side to install the right exhaust nozzle, and on the adapter left side to install the left exhaust nozzle.

- (2) Connect the hoist to the lifter, and adjust the hoist correctly.
- (3) Loosen the bolts (1), washers (2) and nuts (3) that attach the exhaust nozzle (4) to the engine mounting flange.
- (4) Adjust the height of the hoist correctly.
- (5) Loosen the torque of the bolts (1) and nuts (3).
- (6) Remove the bolts (1), washers (2), and nuts (3), but let a minimum of four bolts with washers and nuts to attach the exhaust nozzle at the top of the engine rear mount ring.

**NOTE:** When you remove the nuts (3) from the bolts (1) in the upper and lower mounts, be careful and do not let the bolt get out of its place, if you will install the exhaust nozzle again.

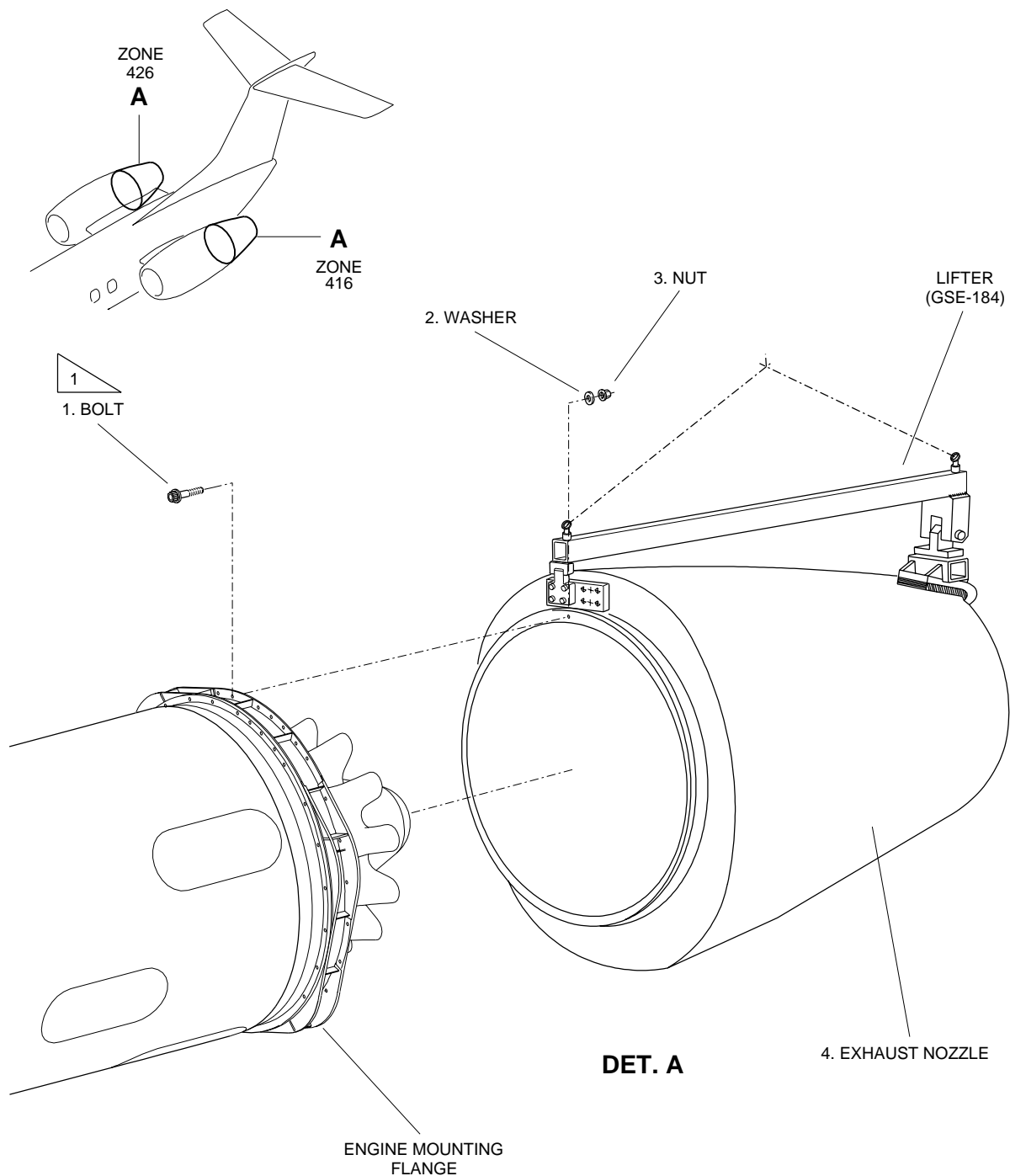
- (7) Adjust the height of the hoist again, remove the remaining bolts on the top of the engine rear mount ring, and remove the exhaust nozzle from the engine.
- (8) Put the exhaust nozzle on a wooden platform to prevent damage.

- (9) Disconnect the hoist from the lifter, and remove the lifter from the exhaust nozzle.

EFFECTIVITY: ALL

Engine Exhaust Nozzle - Removal/Installation

Figure 401 - Sheet 1



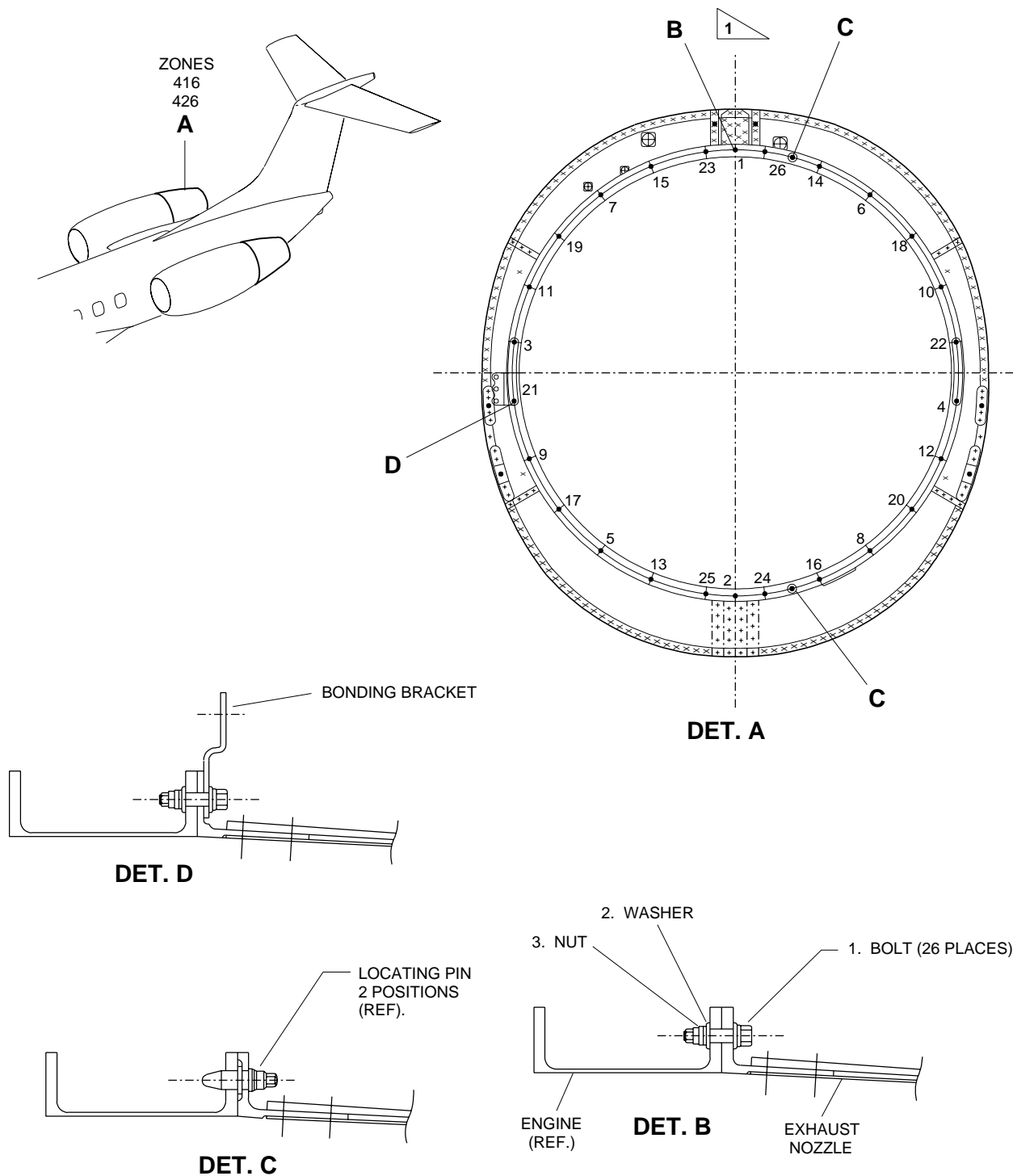
1 INITIAL TORQUE: 5 N.m (45 lb.in)  
FINAL TORQUE: 10 N.m (90 lb.in)

145AMM780003.MCE A

EFFECTIVITY: ALL

Engine Exhaust Nozzle - Removal/Installation

Figure 401 - Sheet 2



TASK 78-11-01-400-801-A  
EFFECTIVITY: ALL

### 3. ENGINE EXHAUST NOZZLE - INSTALLATION

#### A. General

(1) Obey the instructions below to install the engine exhaust nozzle.

#### B. References

REFERENCE	DESIGNATION
AMM MPP 78-10-00/200	- MAINTENANCE PRACTICES
AMM TASK 71-11-01-400-801-A/400	ENGINE UPPER COWLING - INSTALLATION
AMM TASK 71-12-01-400-802-A/400	ENGINE LOWER COWLING - INSTALLATION
AMM TASK 71-13-01-400-801-A/400	APRON - INSTALLATION

#### C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
412	LH Upper Cowling	Engine Nacelle
422	RH Upper Cowling	Engine Nacelle
413	LH Lower Cowling	Engine Nacelle
423	RH Lower Cowling	Engine Nacelle

#### D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 184	Lifter - Nacelle Exhaust Module LH/RH	To remove/install the engine exhaust nozzle	
Commercially available	Workstand	To get access to the work area	
Commercially available	Hoist	To lift the exhaust nozzle	
Commercially available	Torque Wrench (0 to 600 lbs)	To torque the exhaust nozzle bolts	

#### E. Auxiliary Items

Not Applicable

#### F. Consumable Materials

Not Applicable

#### G. Expandable Parts

Not Applicable

#### H. Persons Recommended

QTY	FUNCTION	PLACE
2	Do the task	In the work area

I. Installation (Figure 401)

SUBTASK 420-002-A

**WARNING: REFER TO THE GROUND SAFETY PRECAUTIONS GIVEN IN [AMM MPP 78-10-00/200](#) WHEN YOU DO THE EXHAUST NOZZLE MAINTENANCE PROCEDURES.**

**CAUTION:**

- DO NOT HIT THE ENGINE EXHAUST MIXER, EXHAUST CONE OR THE AIRCRAFT, WHEN YOU INSTALL THE EXHAUST NOZZLE.
- MAKE SURE THAT THE LOCATING PINS ARE IN THE CORRECT POSITION, WHEN YOU INSTALL THE EXHAUST NOZZLE.
- MAKE SURE THAT THE BOLTS IN THE UPPER AND LOWER MOUNTS ARE CORRECTLY INSTALLED BEFORE YOU INSTALL THE EXHAUST NOZZLE ON THE ENGINE.

- (1) Install the lifter to the exhaust nozzle and connect the hoist to the lifter.

**NOTE:** The front adapter of the lifter permits RH and LH side installation. Put the lifter on the adapter right side to install the right exhaust nozzle, and on the adapter left side to install the left exhaust nozzle.

- (2) Operate the hoist to lift the exhaust nozzle and install the exhaust nozzle to the engine. Make sure that the locating pins are in the correct position.
- (3) Install the bolts (1) with washers (2) and nuts (3) to attach the exhaust nozzle to the engine rear mount ring. Refer to figure 401 for the torque sequence and torque values.

**NOTE:**

- The bolts and nuts that attach the exhaust nozzle have initial and final torque sequence. Obey the same sequence shown in figure 401 to apply the initial and final torque values.
- Be careful and do not let the bolts (1) get out of their place, when you put the exhaust nozzle in position.

- (4) Remove the lifter from the engine exhaust nozzle. Disconnect the lifter from the hoist.

J. Follow-on

SUBTASK 842-002-A

- (1) Install the upper cowling ([AMM TASK 71-11-01-400-801-A/400](#)).
- (2) Install the nacelle apron ([AMM TASK 71-13-01-400-801-A/400](#)).
- (3) Install the lower cowling ([AMM TASK 71-12-01-400-802-A/400](#)).
- (4) Install the nacelle trailing-edge fairing.
- (5) Remove all tools, material, and equipment from the work area. Make sure that the area is clean.