



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

T/R DOOR-ACTUATOR FITTING BUSHING - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to remove and install the bushings of the Pivot-Door Actuator Fitting on the Engine Thrust Reverser.
- B. This procedure is necessary only when the bushings installed in the Pivot-Door Actuator Fitting are loose.
- C. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

<i>TASK NUMBER</i>	<i>DESCRIPTION</i>	<i>EFFECTIVITY</i>
54-30-02-000-801-A	T/R DOOR-ACTUATOR FITTING BUSHING - REMOVAL	ALL
54-30-02-400-801-A	T/R DOOR-ACTUATOR FITTING BUSHING - INSTALLATION	ALL



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TASK 54-30-02-000-801-A

EFFECTIVITY: ALL

2. T/R DOOR-ACTUATOR FITTING BUSHING - REMOVAL

A. General

- (1) This procedure gives the instructions to remove the bushings of the Pivot-Door Actuator Fitting on the Engine Thrust Reverser.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-43-00/100	- COMPONENT LOCATION
AMM MPP 78-30-00/200	- MAINTENANCE PRACTICES
AMM TASK 78-31-01-940-801-A/200	THRUST REVERSER - OPENING PROCEDURE
AMM TASK 78-32-01-000-801-A/400	THRUST-REVERSER DOOR ACTUATOR - REMOVAL
AMM TASK 78-33-01-980-801-A/200	ISOLATION CONTROL UNIT - INHIBITION PROCEDURES

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
416	416HT/416BB/416MT/416NT/416FB/416GB	LH Thrust reverser
426	426HT/426BB/426MT/426NT/426FB/426GB	RH Thrust reverser

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Workstand	To get access to the work area	
Commercially available	Punch	To remove the bushings	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does to task	Thrust reverser

I. Preparation

SUBTASK 841-002-A

WARNING: BEFORE YOU DO THE TASK, OBEY THE SAFETY PRECAUTIONS GIVEN IN AMM MPP 78-30-00/200 TO PREVENT INJURY TO PERSONS AND DAMAGE TO MATERIAL.

- (1) On the circuit breaker panel, open the circuit breaker:
 - START 1 (location tip: POWERPLANT/THRUST REVERSER1)
 - START 2 (location tip: POWERPLANT/THRUST REVERSER2)
- (2) Attach a DO-NOT-CLOSE tag to them.
- (3) Put a DO-NOT-OPERATE-THE-THRUST-REVERSERS sign on the instrument panel, in the cockpit.
- (4) Open the thrust reverser doors ([AMM TASK 78-31-01-940-801-A/200](#)).
- (5) Inhibit the ICU ([AMM TASK 78-33-01-980-801-A/200](#)).
- (6) Install the Hold-Open Rods to the thrust-reverser door-actuator shaft.
- (7) Put the workstand under the engine thrust reverser.
- (8) Remove access panels 416HT, 426HT, 416MT, 416NT, 426MT, and 426NT ([AMM MPP 06-43-00/100](#) - upper actuator shaft) or access panels 416BB, 426BB, 416FB, 416GB, 426FB, and 426GB ([AMM MPP 06-43-00/100](#) - lower actuator shaft), as applicable. Refer to [Figure 401](#).
- (9) Remove the actuator shaft ([AMM TASK 78-32-01-000-801-A/400](#)).

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

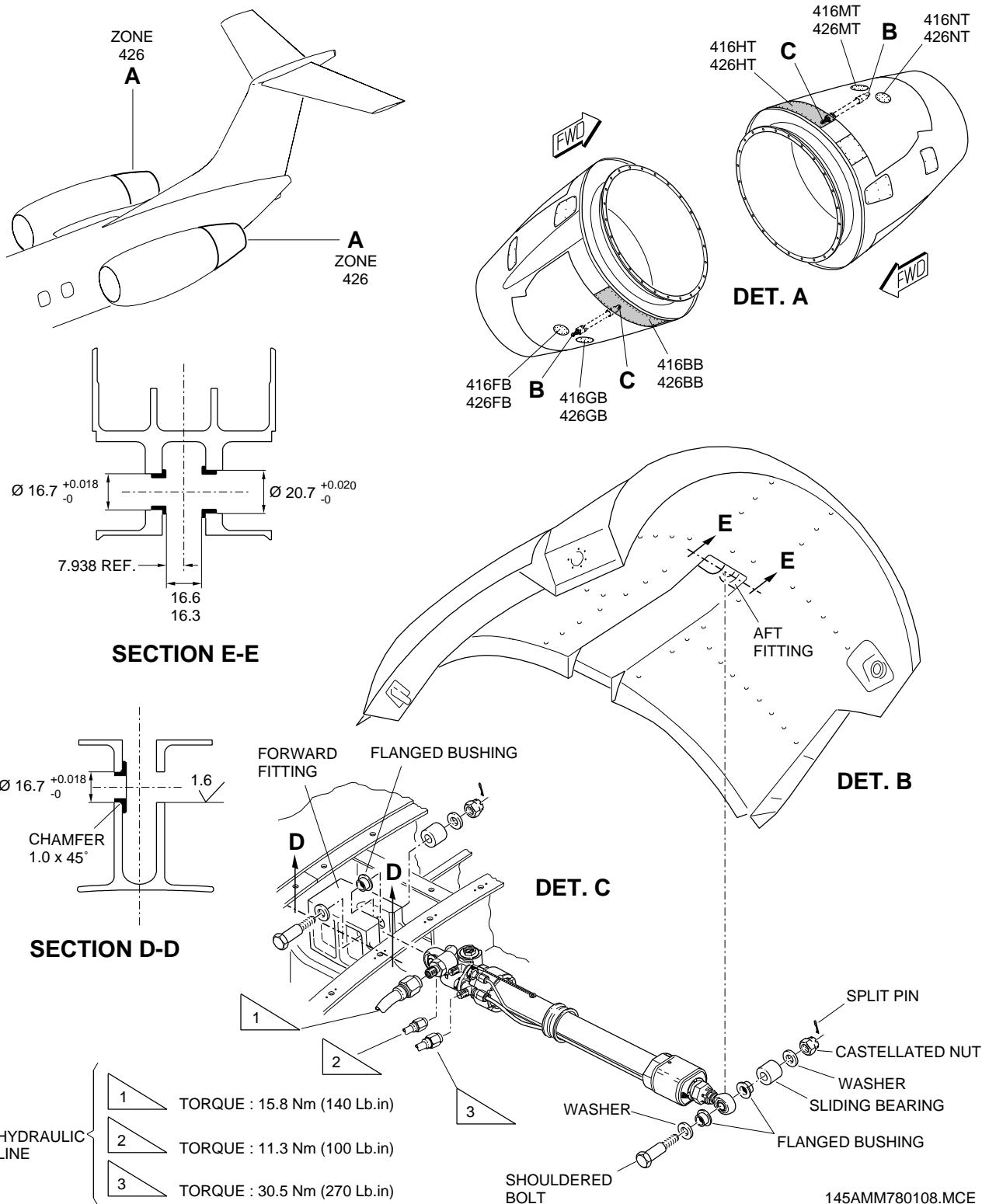
SUBTASK 020-002-A

- (1) With a Ø 16.5-mm punch through the outer access panel, remove the bushing slowly and uniformly from the door through the slot in the actuator heatshield on the inner surface of the door.
- (2) With a Ø 20.7-mm punch, do the same procedure as above for the removal of the bushing installed on the forward structure of the fitting.

EFFECTIVITY: ALL

Actuators - LH/RH Thrust Reverser - Removal/Installation

Figure 401





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TASK 54-30-02-400-801-A

EFFECTIVITY: ALL

3. T/R DOOR-ACTUATOR FITTING BUSHING - INSTALLATION

A. General

- (1) This procedure gives the instructions to install the bushings of the Pivot-Door Actuator Fitting on the Engine Thrust Reverser.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-43-00/100	- COMPONENT LOCATION
AMM TASK 78-31-01-700-801-A/500	THRUST REVERSER - OPERATIONAL CHECK
AMM TASK 78-31-01-940-802-A/200	THRUST REVERSER - CLOSURE PROCEDURE
AMM TASK 78-32-01-400-801-A/400	THRUST-REVERSER DOOR ACTUATOR - INSTALLATION
AMM TASK 78-33-01-980-801-A/200	ISOLATION CONTROL UNIT - INHIBITION PROCEDURES

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
416	416HT/416BB/416MT/416NT/416FB/416GB	LH Thrust reverser
426	426HT/426BB/426MT/426NT/426FB/426GB	RH Thrust reverser

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Workstand	To get access to the work area	
Commercially available	Punch	To install the bushings	
Commercially available	Pliers	To install the bushings	
Commercially available	Liquid Nitrogen	To freeze the bushings	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
ASTM-D-740	Methyl-ethyl-ketone	AR

G. Expandable Parts

Not Applicable



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H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Thrust reverser

I. Installation

SUBTASK 420-002-A

CAUTION: FOR EACH FLANGED BUSHING REMOVED, PUT AN OVERSIZE FLANGED BUSHING WHICH AGREES WITH THE DIAMETER OF THE HOLE. REFER TO FIGURE 401.

- (1) With a micrometer, inspect the diameter of each hole in the fitting from which the bushings were removed. The holes must obey the tolerances shown in Figure 401.
- (2) Inspect the holes for abrasions, scratches, and gouges, and remove burrs with glass paper.
- (3) If the holes are satisfactory in size, the holes must be cleaned with methyl-ethyl-ketone or other applicable cleaner together with a lint-free cloth.

WARNING: WHEN YOU TOUCH THE MATERIAL OR COMPONENT WITH LIQUID NITROGEN, BE CAREFUL NOT TO PERMIT IT TO GET IN THE SKIN OR EYES:

- USE FACE SHIELDS.
- USE GLOVES.
- THE COMPONENTS MUST BE HELD WITH TONGS OR OTHER TYPE OF HANDLING TOOL.

- (4) Let the bushing stay in liquid nitrogen for 5 minutes.
- (5) Remove the bushing from the liquid nitrogen, with tongs or other handling tool, and install the bushing into the fitting immediately.
- (6) Lightly hit the bushing into position. For this, get access through the opposite side hole and use a 16.5 mm-dia. punch, a pair of pliers, and a block against the head of the bushing.
- (7) Do the same procedure as above for the smaller bushing on the left side. Use the same punch.

J. Follow-on

SUBTASK 842-002-A

- (1) Install the actuator shaft ([AMM TASK 78-32-01-400-801-A/400](#)).
- (2) Install access panels 416HT, 426HT, 416MT, 416NT, 426MT, and 426NT ([AMM MPP 06-43-00/100](#) - upper actuator shaft) or access panels 416BB, 426BB, 416FB, 416GB, 426FB, and 426GB ([AMM MPP 06-43-00/100](#) - lower actuator shaft), as applicable. Refer to Figure 401.



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- (3) On the circuit breaker panel, close these circuit breakers:
 - START 1 (location tip: POWERPLANT/THRUST REVERSER1)
 - START 2 (location tip: POWERPLANT/THRUST REVERSER2)
- (4) Remove the DO-NOT-CLOSE tag from them.
- (5) Remove the DO-NOT-OPERATE-THE-THRUST-REVERSERS sign from the instrument panel, in the cockpit.
- (6) Remove the Hold-Open Rods from the thrust-reverser door-actuator shaft.
- (7) Deinhibit the ICU ([AMM TASK 78-33-01-980-801-A/200](#)).
- (8) Close the thrust reverser doors ([AMM TASK 78-31-01-940-802-A/200](#)).
- (9) Remove the workstand from the work area.
- (10) Do the engine thrust-reverser operational check ([AMM TASK 78-31-01-700-801-A/500](#)) and examine the system for leaks.

