PIVOT DOOR BEARING - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to remove and install the pivot door bearing.

   B. These procedures are applicable to the LH and RH thrust reversers.

   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).

TASK NUMBER	*DESCRIPTION*	*EFFECTIVITY*
78-31-06-000-801-A	PIVOT DOOR BEARING- REMOVAL	ALL
78-31-06-400-801-A	PIVOT DOOR BEARING - INSTALLATION	ALL

TASK 78-31-06-000-801-A
EFFECTIVITY: ALL

2. PIVOT DOOR BEARING- REMOVAL

A. General

(1) Obey these instructions to remove the pivot door bearing.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 78-31-02-000-801-A/400	THRUST-REVERSER UPPER DOOR - REMOVAL
AMM TASK 78-31-03-000-801-A/400	THRUST-REVERSER LOWER DOOR - REMOVAL
S.B.145-78-0032	-
Shim bearing	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
416	-	LH Thrust Reverser
426	-	RH Thrust Reverser

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 199	Wrench-Torque, Lock Nut	To remove the bearing nut	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expendable Parts

ITEM	*IPC REFERENCE (VENDOR REFERENCE)*	*QTY*
145-78239-001	Shim bearing	2
145-78239-003	Shim bearing	2
145-78239-005	Shim bearing	2
145-78239-007	Shim bearing	2
145-78239-009	Shim bearing	2
145-78239-011	Shim bearing	2

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Engine LH/RH thrust reverser

I. Preparation (Figure 402)

SUBTASK 841-002-A

(1) Remove the engine thrust-reverser upper door (AMM TASK 78-31-02-000-801-A/400) or the engine thrust-reverser lower door (AMM TASK 78-31-03-000-801-A/400), as applicable.

(2) Measure the shim gap (dimension “X”) for the left and right pivot door bearings of the door. This dimension is from the outboard face of the ball bearing nut (not the internal ball) to the surface of the door pivot fitting (12). Refer to DET. C, SECTION D-D of Figure 402. Record the dimension in Table 401:

Table 401 - SHIM GAP DIMENSION

	LEFT PIVOT DOOR BEARING OF THE DOOR	**RIGHT PIVOT DOOR BEARING OF THE DOOR**
UPPER DOOR		
LOW-ER DOOR		

J. Removal (Figure 401)

SUBTASK 020-002-A

(1) For aircraft PRE-MOD S.B.145-78-0032, remove the striker nut (5) and deploy microswitch striker (6).

(2) From the outer side of the door, bend up the locking tabs (9) to unlock the lockwasher (8).

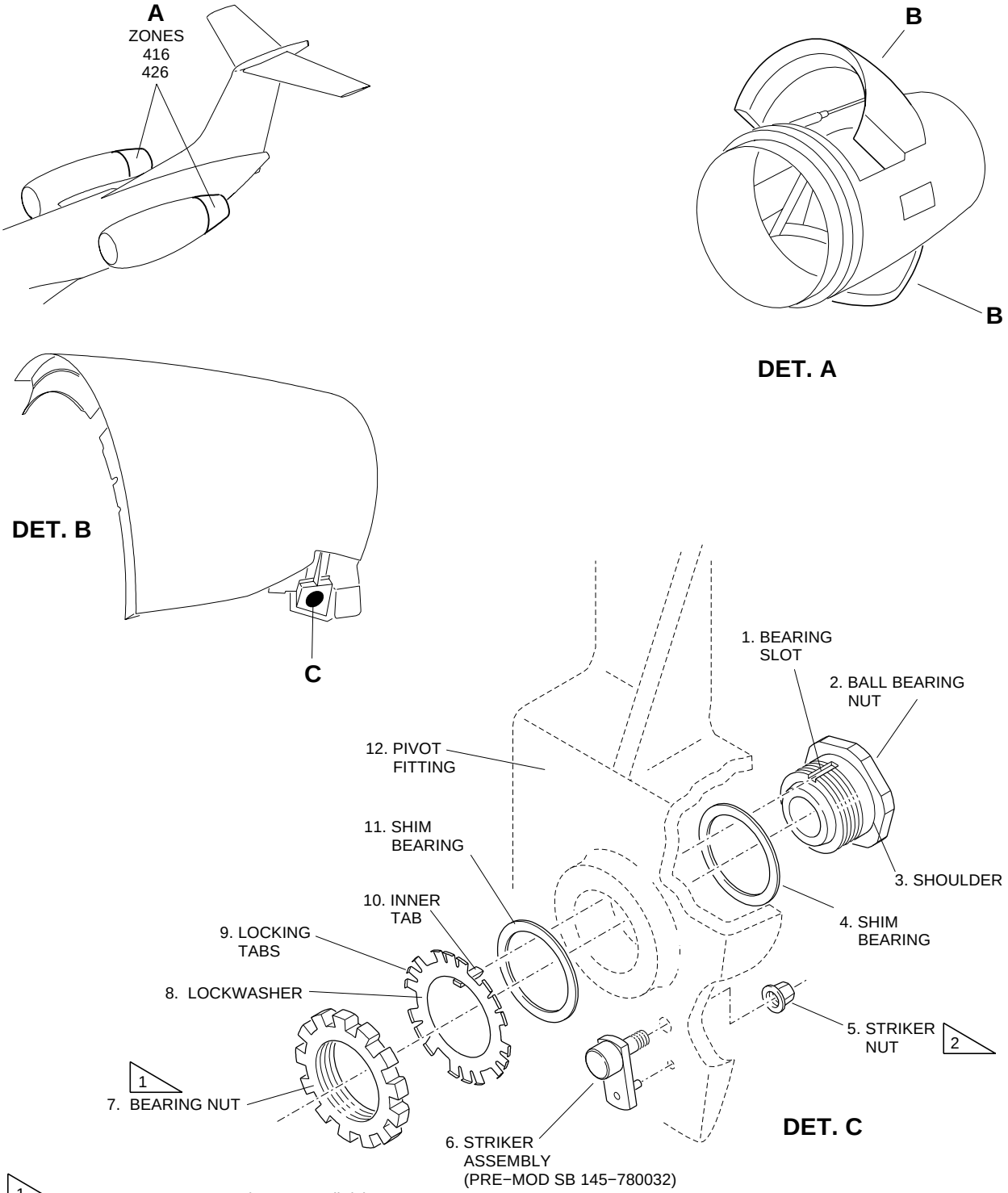
(3) Record the thicknesses and positions of the shims on each bearing that you will remove in steps (4) and (5).

(4) Use GSE 199 to remove the bearing nut (7), lockwasher (8) and, if applicable, the shim bearing (11) installed on the outer side of the door.

(5) From the inner side of the door, remove the ball bearing nut (2) and shim bearing (4).

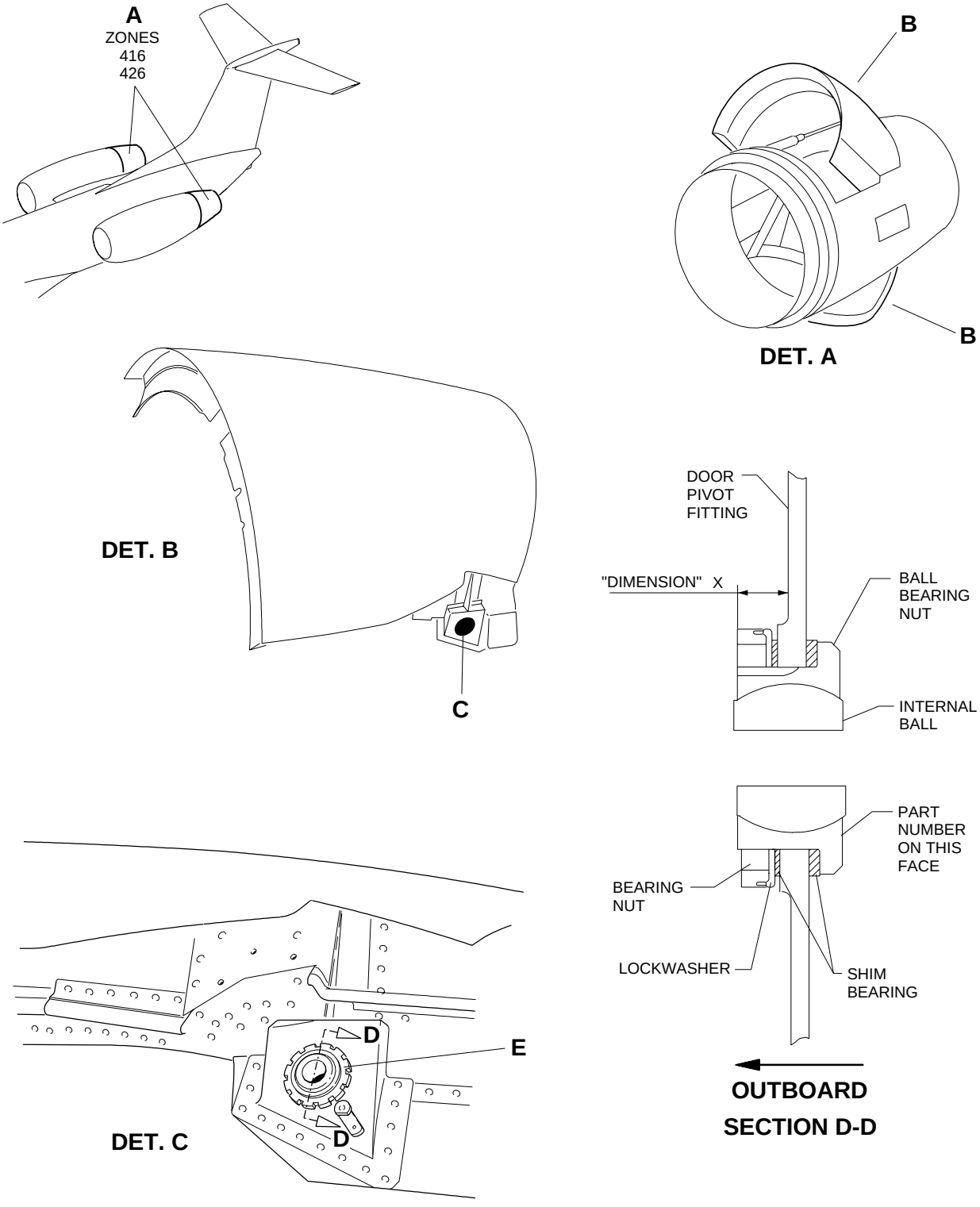
EFFECTIVITY: ALL

Pivot Door Bearing - Removal/Installation
Figure 401



EFFECTIVITY: ALL

Pivot Door Bearing - Shim Gap Dimension
Figure 402



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TASK 78-31-06-400-801-A
EFFECTIVITY: ALL

3. PIVOT DOOR BEARING - INSTALLATION

A. General

(1) Obey these instructions to install the pivot door bearing.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 78-31-02-400-801-A/400	THRUST-REVERSER UPPER DOOR - INSTALLATION
AMM TASK 78-31-03-400-801-A/400	THRUST-REVERSER LOWER DOOR - INSTALLATION
AMM TASK 78-31-06-200-802-A/600	PIVOT DOOR BEARING BORE - INSPECTION/CHECK
CPM 51-14-00	-
Cotter pin	-
S.B.145-78-0032	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
416	-	LH Thrust Reverser
426	-	RH Thrust Reverser

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 199	Wrench-Torque, Lock Nut	To torque the bearing nut	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-L-8937D	Molykote 3402 lubricant	AR
MIL-C-5591	Alodine 1200	AR
MEP 09-060	Corrosion Inhibiting Compound (CA-1000)	AR
PR1791A	Sealant	AR

G. Expendable Parts

ITEM	*IPC REFERENCE (VENDOR REFERENCE)*	*QTY*
MS24665-370	Cotter pin	4

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Engine LH/RH thrust reverser

I. Installation (Figure 401) (Figure 402)

SUBTASK 420-002-A

(1) Do the pivot door bearing bore inspection/check (AMM TASK 78-31-06-200-802-A/600).

(2) Apply Alodine 1200 to the sides of the holes in which the ball bearing nut (2) will be installed. Refer to CPM 51-14-00.

(3) Get the ball bearing nut (2) and the lockwasher (8).

(4) Use masking tape to prevent contamination on both faces of the ball bearing nut during the work.

(5) Make sure that the angle of the inner tab (10) in the lockwasher (8) is the same as the angle at the bottom of the bearing slot (1) in the ball bearing nut (2). Adjust the angle of the inner tab to match the slot.

(6) Clean the shims bearing that you removed before.

(7) Protect the thread of the bearing nut with masking tape before the Molykote application to prevent contamination during the work. Apply Molykote 3402C lubricant to the face of the bearing nut and to the face of the lockwasher that will be in contact and let it dry.

(8) Apply CA-1000 to the shoulder (3) of the ball bearing nut that will go into the hole in the bearing housing and also apply it to the shim(s). Be careful not to contaminate the bearing ball with the sealant.

(9) Put the shim (4) on the ball bearing nut (2).

CAUTION: WHEN YOU INSTALL THE BALL BEARING NUT IN THE PIVOT FITTING, THE THREAD MUST NOT TOUCH THE SIDES OF THE HOLE. THE THREAD OF THE BALL BEARING NUT CAN PICK UP PARTICLES OF METAL FROM THE PIVOT FITTING. DO NOT USE TOOLS TO PUSH THE BALL BEARING NUT INTO THE PIVOT FITTING.

(10) From the inner side of the door bearing housing, install the ball bearing nut (2) with the shim bearing (4). Make sure that the shims are in the same position as when they were removed.

(11) Use a clean cloth to remove unwanted CA-1000 sealing compound from the thread of the ball bearing nut.

(12) If the shim (4) installed in the inner side of the pivot fitting has a thickness of 0.5 mm (0.20”) or less, put a new shim (11) between the lockwasher (8) and the pivot fitting (12). The total thickness of the shims in the bearing must be less than 1.4 mm (0.06”). The threads of the ball bearing nut must not touch the fitting when you install the bearing nut. Make sure that the ball bearing nut (2) is straight in the hole. Use a clean cloth to remove unwanted sealant from the thread of the ball bearing nut.

CAUTION: MAKE SURE THAT THE LOCKWASHER DOES NOT GO INTO THE THREADS AND THAT THE INNER TAB (10) OF THE LOCKWASHER IS CORRECTLY POSITIONED INSIDE THE SLOT OF THE BALL BEARING NUT DURING THE INSTALLATION

(13) From the outer side of the door bearing housing, install the lockwasher (8) on the ball bearing nut thread.

(14) Remove the masking tape and install the bearing nut (7) on the ball bearing nut (2). Use GSE 199 to hand-tighten the bearing nut as far as possible. Do not bend the locking tabs (9).

(15) Remove GSE 199 and measure the shim gap (dimension “X”). Refer to SECTION D-D of (Figure 402). The thickness of the shims bearing must be less than or equal to 1.4 mm (0.06”).

(16) Compare the dimension of the shim gap got in step (15) with the dimension in Table 401. The difference must be smaller than 0.1 mm (0.004”).

(17) If the difference is more than 0.1 mm (0.004”), add or remove shims to adjust the shim dimension.

(a) If the shim gap (dimension "X") in step (15) is greater than the shim gap in table 401, add shims. Use thicker shims on the ball bearing nut

(b) If the shim gap (dimension "X") in step (15) is less than the shim gap in table 401, remove shims. Use thinner shims on the ball bearing nut

(18) Use GSE 199 to torque the bearing nut to 60 N.m (531 lb.in).

(19) Make sure that the lockwasher (8) is central on the ball bearing nut (2) and does not show distortions. If the lockwasher is not central, or if there is distortion on the lockwasher, replace the lockwasher according to step (5) then step (13) and on.

(20) Use GSE 199 to torque the bearing nut to 90 N.m (796.5 lb.in), or until two tabs on the lockwasher align with the slot in the bearing nut (That happens first). Make sure that the lockwasher is concentric on the ball bearing nut and do not show distortions. Refer to DET. C of (Figure 401)

(21) If the lockwasher is not concentric, or if there is distortion on the lockwasher, replace the lockwasher according to step (5) then step (13) and on.

(22) Try to turn the ball bearing nut (2) with your hand. The ball bearing nut must not move in the housing.

(23) If the ball bearing nut moves in the housing, do as follows:

(a) Disassemble the bearing.

(b) Examine the bearing nut, the ball bearing nut and the lockwasher for damage. If there is damage, replace the damaged part.

(c) Assemble the bearing in the housing (steps (5) and on).

(24) Bend the applicable tab on the lockwasher (8) to lock the bearing nut (7) and the ball bearing nut (2). Try to bend two tabs. If this is not possible, bend only one tab.

(25) Use a clean cloth to remove unwanted CA-1000 sealant that was squeezed out from the bearing.

(26) Remove the masking tape from the faces of the bearing.

(27) For aircraft PRE-MOD S.B.145-78-0032, install the deploy microswitch striker as follows:

(a) Clean the striker, nut and the area around the hole for the striker on the pivot housing.

NOTE: Make a clean lint-free cloth moist with an applicable solvent.

(b) Dry the area and components with a clean, dry, lint-free cloth.

(c) Apply sealant PR1791A to the threads and the contact surfaces on the striker (6) and the nut (5).

(d) Install the striker (6) and the nut (5). See DET. C of (Figure 401) for torque values.

J. Follow-on

SUBTASK 842-002-A

CAUTION: THRUST REVERSER DOORS S/N 769 AND ON HAVE CARBON FIBER SIDEWALLS. WHEN YOU INSTALL THIS DOOR, CONTACT WITH THE STRUCTURE CAN CAUSE DAMAGE TO THE SIDEWALLS. PROTECT THE EDGES OF THE SIDEWALLS WHEN YOU REMOVE THE DOORS.

(1) Install the engine thrust-reverser upper door (AMM TASK 78-31-02-400-801-A/400) or the engine thrust-reverser lower door (AMM TASK 78-31-03-400-801-A/400), as applicable.