



AIRCRAFT
MAINTENANCE MANUAL

VERTICAL STABILIZER-TO-RUDDER HINGE FITTINGS - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures for the removal and installation of the vertical stabilizer-to-rudder rear-spar hinge fittings.
- 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
55-31-01-000-801-A	VERTICAL STABILIZER-TO-RUDDER HINGE FITTINGS - REMOVAL	ALL
55-31-01-400-801-A	VERTICAL STABILIZER-TO-RUDDER HINGE FITTINGS - INSTALLATION	ALL
55-31-01-000-802-A	VERTICAL STABILIZER-TO-RUDDER UPPER AND LOWER HINGE FITTINGS - REMOVAL	ALL
55-31-01-400-802-A	VERTICAL STABILIZER-TO-RUDDER UPPER AND LOWER HINGE FITTINGS - INSTALLATION	ALL



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TASK 55-31-01-000-801-A

EFFECTIVITY: ALL

2. VERTICAL STABILIZER-TO-RUDDER HINGE FITTINGS - REMOVAL

A. General

- (1) This task gives the procedures to remove the vertical stabilizer-to-rudder rear-spar hinge fittings.

B. References

REFERENCE	DESIGNATION
AMM TASK 27-20-03-000-801-A/400	RUDDER I - REMOVAL
AMM TASK 29-10-00-860-801-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
325		Vertical stabilizer-to-rudder rear spar

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 036	Hydraulic Platform	To get access to the vertical stabilizer	
Commercially available	Torque wrench	To remove the bolts	

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Protective Gloves	For protection of technician's hands	1
Commercially available	Safety Goggles	For protection of technician's eyes	1

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Vertical stabilizer



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I. Preparation

SUBTASK 841-002-A

- (1) Depressurize the rudder hydraulic systems ([AMM TASK 29-10-00-860-801-A/200](#)).
- (2) Put hydraulic platform GSE 031 in position.
- (3) Remove rudder I (1) according to [AMM TASK 27-20-03-000-801-A/400](#).
- (4) Get access to the hinge fittings at the vertical stabilizer rear spar-to-rudder fitting assembly.

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

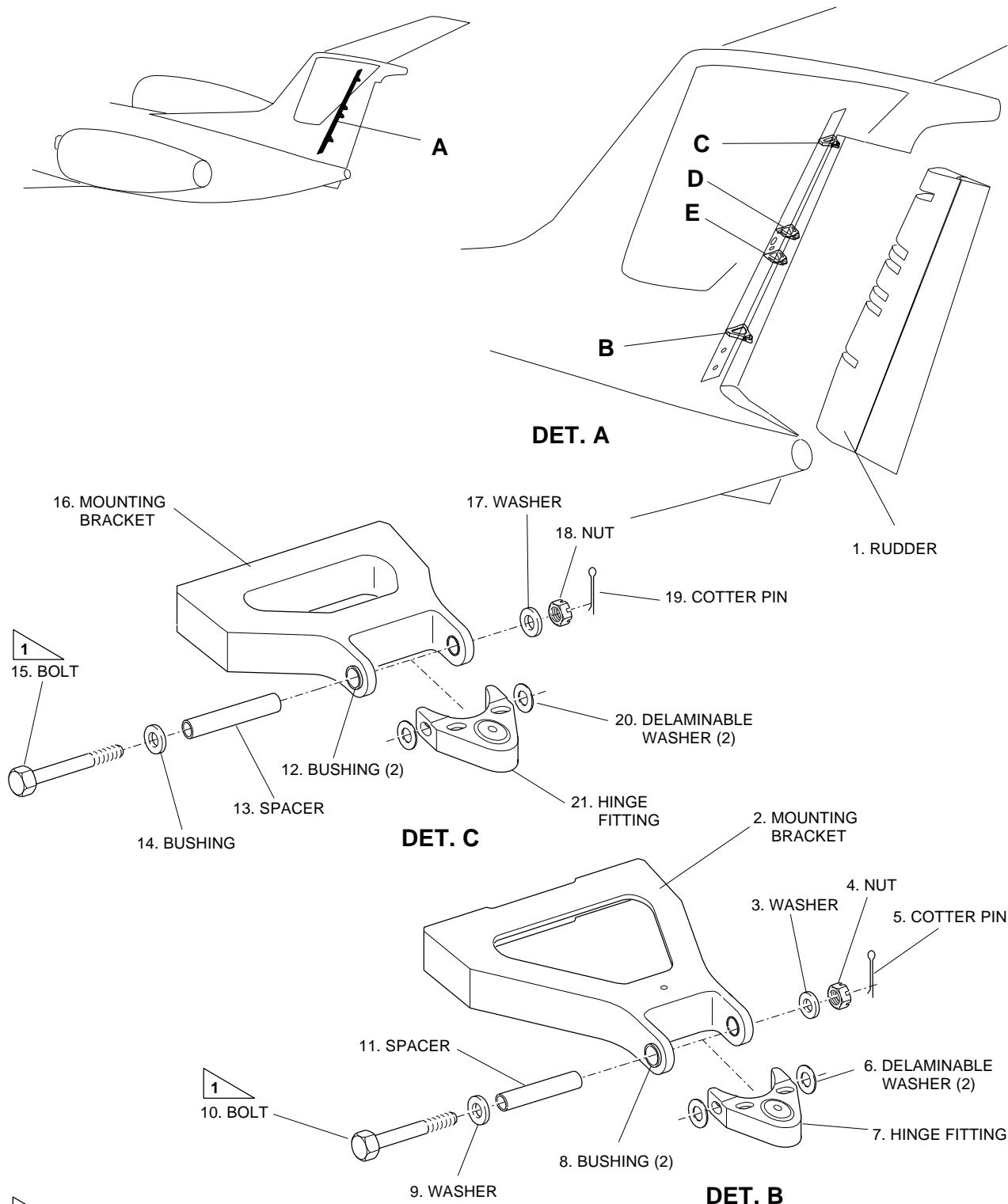
SUBTASK 020-002-A

- (1) Remove the cotter pins (5) and (19), and nuts (4) and (18). Refer to [Figure 401](#); Sheet 1; DET. B and DET. C.
- (2) Hold the hinge fittings (7) and (21) and remove the bolts (10) and (15), spacers (11) and (13), delaminable washers (6) and (20), and washers (3), (9), (17), and (14).
NOTE: When you remove the delaminable washers (6) and (20), mark their installation positions to make their assemblage easier.
- (3) Remove the movable hinge fittings (7) and (21) from the mounting brackets (2) and (16) installed at the top and bottom areas of the vertical stabilizer-to-rudder rear spar.
NOTE: When you remove the washers (23) and (26), mark their installation positions to make their assemblage easier.
- (4) Remove the bolts (22) and (25), washers (23) and (26), and nuts (24) and (27). Refer to [Figure 401](#); Sheet 2; DET. D and DET. E.
NOTE: When you remove the washers (23) and (26), mark their installation positions to make their assemblage easier.

EFFECTIVITY: ALL

Vertical Stabilizer-to-Rudder Hinge Fittings - Removal/Installation

Figure 401 - Sheet 1



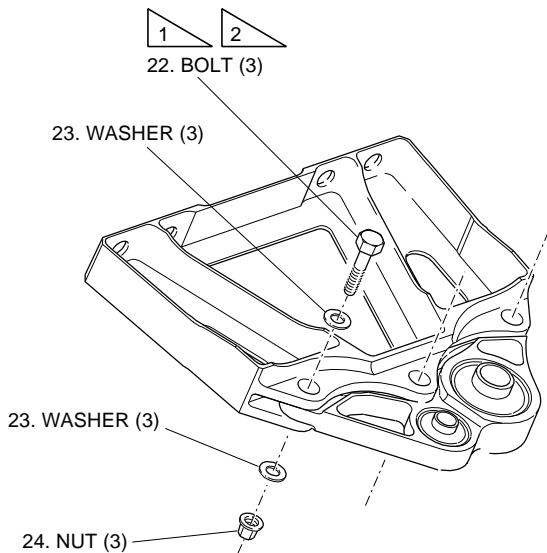
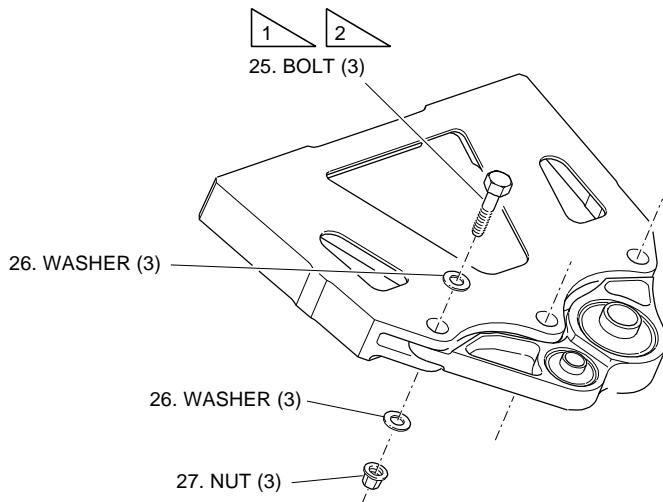
 **TORQUE:** 3.4 TO 4.5 N.m (30 TO 40 lb.in)

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EFFECTIVITY: ALL

Vertical Stabilizer-to-Rudder Hinge Fittings - Removal/Installation

Figure 401 - Sheet 2


DET. D

DET. E
NOTE:

MAXIMUM GAP 0.1 mm

1 TORQUE: 3.8 – 7.9 N.m (33.5 – 70 lb.in).

2 APPLY AEROSHELL GREASE.

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TASK 55-31-01-400-801-A

EFFECTIVITY: ALL

3. VERTICAL STABILIZER-TO-RUDDER HINGE FITTINGS - INSTALLATION

A. General

- (1) This task gives the procedures to install the vertical stabilizer-to-rudder rear-spar hinge fittings.

B. References

REFERENCE	DESIGNATION
AMM TASK 27-20-03-400-801-A/400	RUDDER I - INSTALLATION
IPC 55-31-00	HINGES FITTINGS - RUDDER I
SRM 51-20-01-PR	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
325		Vertical stabilizer-to-rudder rear spar

D. Tools and Equipment

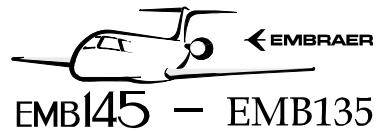
ITEM	DESCRIPTION	PURPOSE	QTY
GSE 031	Hydraulic Platform	To get access to the vertical stabilizer	
Commercially available	Torque wrench	To tighten the bolts	
Commercially available	Feeler Blades	To measure the gaps	

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Protective Gloves	For protection of technician's hands	1
Commercially available	Safety Goggles	For protection of technician's eyes	1

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MIL-S-81733 TYPE IV-12	Sealant P/S 870C-12	AR
MIL-PRF-23827	Aeroshell Grease 7	AR



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G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
Main Structure	IPC 55-31-00	AR

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Vertical stabilizer

I. Installation (Figure 401)

SUBTASK 420-002-A

- (1) **NOTE:** Add or remove delaminable washers (6) and (20) as necessary to center the rudder hinge axis (7) and (21) and adjust to a minimum gap is 0.1 mm (0.0039 in) and to a maximum gap is 0.2 mm (0.0078 in) on each side. Make sure that the delaminable washers are correctly in their installation locations. Refer to (Figure 401); Sheet 1; DET. B and DET. C.

Immediately before assembly, apply sealant P/S 870C-12 to the pressed bushings.

NOTE: The sealant curing time changes with the environmental conditions. Refer to (SRM 51-20-01-PR).

- (2) Install the movable hinge fittings (7) and (21) to the mounting brackets (2) and (16) with bolts (10) and (15), delaminable washers (6) and (20), spacers (11) and (13), washers (3), (9), (17), and (14), nuts (4) and (18), and cotter pin (5) and (19). Refer to (Figure 401); Sheet 1; DET. B and DET. C.

NOTE: Apply torque 3.4 to 4.5 N.m (30 to 40 lb.in).

- (3) Install the center hinge fittings assembly using aeroshell grease 7 in the bolts (25) and (22), washers (23) and (26), nuts (24) and (27), the maximum admissible gap between the center hinge fitting is 0.1 mm. Refer to (Figure 401); Sheet 2; DET. D and DET. E.

NOTE: Apply torque 3.8 to 7.9 N.m (33.5 to 70 lb.in).

J. Follow-on

SUBTASK 842-002-A

- (1) Install rudder I according to [AMM TASK 27-20-03-400-801-A/400](#).
- (2) Restore the airplane to normal.



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TASK 55-31-01-000-802-A

EFFECTIVITY: ALL

4. VERTICAL STABILIZER-TO-RUDDER UPPER AND LOWER HINGE FITTINGS - REMOVAL

A. General

- (1) This task gives the procedures to remove the vertical stabilizer-to-rudder rear-spar upper or lower hinge fittings without the rudder removal.
- (2) The upper or lower vertical stabilizer-to-rudder hinge fittings must be removed one at a time.

B. References

REFERENCE	DESIGNATION
AMM TASK 29-10-00-860-801-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
325		Vertical stabilizer-to-rudder rear spar

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 036	Hydraulic Platform	To get access to the vertical stabilizer	
Commercially available	Torque wrench	To remove the bolts	

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Protective Gloves	For protection of technician's hands	1
Commercially available	Safety Goggles	For protection of technician's eyes	1

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Vertical stabilizer



I. Preparation

SUBTASK 841-003-A

- (1) Depressurize the rudder hydraulic systems ([AMM TASK 29-10-00-860-801-A/200](#)).
- (2) On the circuit breaker panel, open the RUDDER 1 and RUDDER 2 circuit breakers and attach a DO-NOT-CLOSE tag to them.
- (3) Put hydraulic platform GSE 031 in position.
- (4) Get access to the hinge fittings at the vertical stabilizer rear spar-to-rudder fitting assembly.

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

SUBTASK 020-003-A

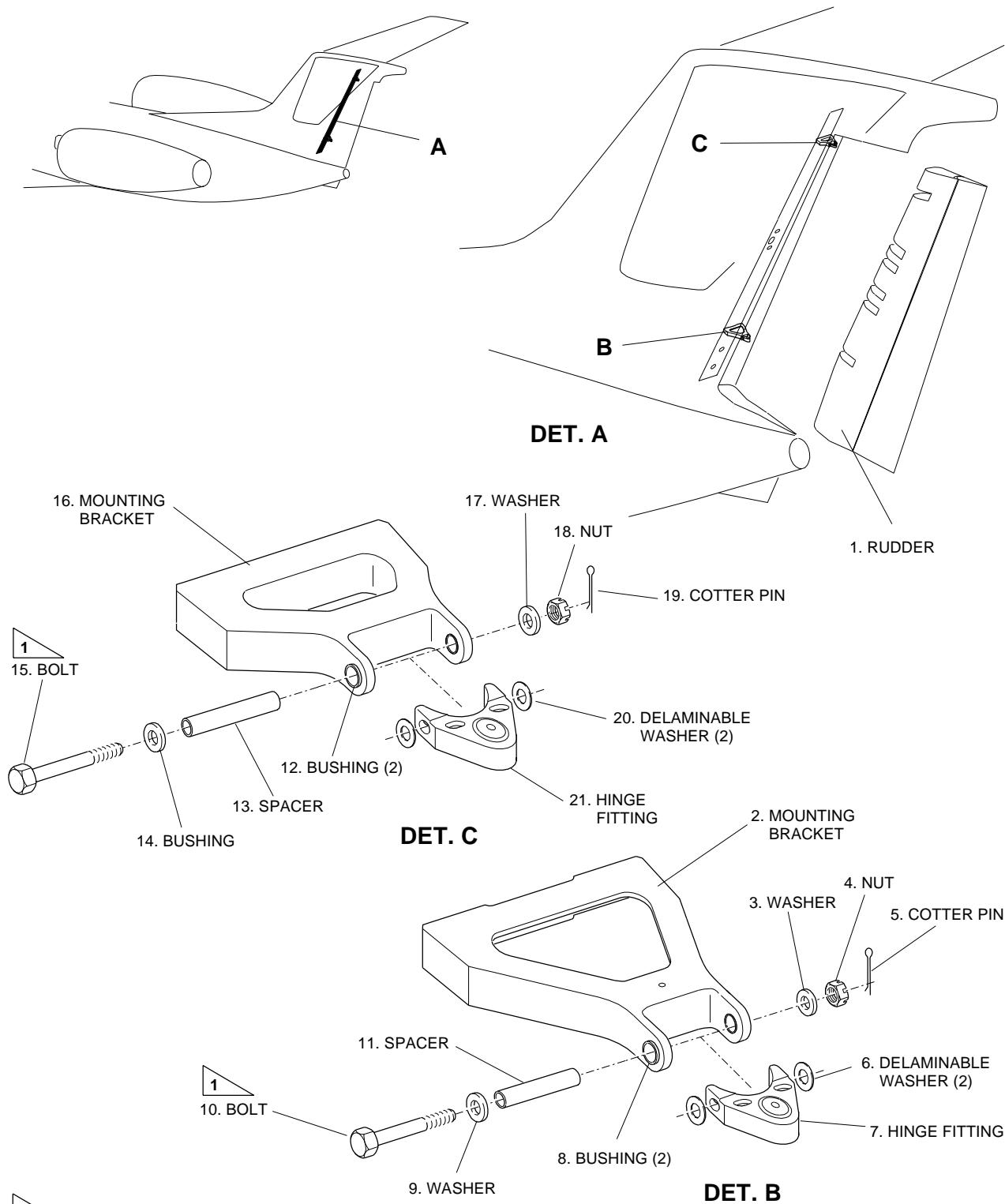
- (1) Remove the cotter pins (5) or (19), and nuts (4) or (18). Refer to [Figure 402](#); Sheet 1; DET. B and DET. C.
- (2) Hold the hinge fittings (7) or (21) and remove the bolts (10) or (15), spacers (11) or (13), delaminable washers (6) or (20), and washers (3) and (9) or (17) and (14).
- (3) Remove the movable hinge fittings (7) or (21) from the mounting brackets (2) or (16) installed at the top and bottom areas of the vertical stabilizer-to-rudder rear spar.

NOTE: When you remove the delaminable washers (6) or (20), mark their installation positions to make their assemblage easier.

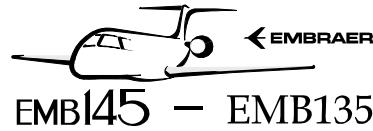
EFFECTIVITY: ALL

Vertical Stabilizer-to-Rudder Upper and Lower Hinge Fittings - Removal/Installation

Figure 402



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TASK 55-31-01-400-802-A

EFFECTIVITY: ALL

5. VERTICAL STABILIZER-TO-RUDDER UPPER AND LOWER HINGE FITTINGS - INSTALLATION

A. General

- (1) This task gives the procedures to install the vertical stabilizer-to-rudder rear-spar upper or lower hinge fittings without the rudder removal.

B. References

REFERENCE	DESIGNATION
AMM TASK 27-22-00-700-801-A/500	-
AMM TASK 29-10-00-860-802-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
IPC 55-31-00	HINGES FITTINGS - RUDDER I
SRM 51-20-01-PR	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
325		Vertical stabilizer-to-rudder rear spar

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 031	Hydraulic Platform	To get access to the vertical stabilizer	
Commercially available	Torque wrench	To tighten the bolts	
Commercially available	Feeler Blades	To measure the gaps	

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Protective Gloves	For protection of technician's hands	1
Commercially available	Safety Goggles	For protection of technician's eyes	1

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MIL-S-81733 TYPE IV-12	Sealant P/S 870C-12	AR
MIL-PRF-23827	Aeroshell Grease 7	AR



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G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
Main Structure	IPC 55-31-00	AR

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Vertical stabilizer

I. Installation (Figure 402)

SUBTASK 420-003-A

- (1) **NOTE:** Add or remove delaminable washers (6) or (20) as necessary to center the rudder hinge axis (7) or (21) and adjust to a minimum gap is 0.1 mm (0.0039 in) and to a maximum gap is 0.2 mm (0.0078 in) on each side. Make sure that the delaminable washers are correctly in their installation locations. Refer to (Figure 402); Sheet 1; DET. B or DET. C.

Immediately before assembly, apply sealant P/S 870C-12 to the pressed bushings.

NOTE: The sealant curing time changes with the environmental conditions. Refer to (SRM 51-20-01-PR).

- (2) Install the movable hinge fittings (7) or (21) to the mounting brackets (2) or (16) with bolts (10) or (15), delaminable washers (6) or (20), spacers (11) or (13), washers (3) and (9) or (17) and (14), nuts (4) or (18), and cotter pin (5) or (19). Refer to (Figure 402); Sheet 1; DET. B or DET. C.

NOTE: Apply torque 3.4 to 4.5 N.m (30 to 40 lb.in).

J. Follow-on

SUBTASK 842-003-A

- (1) Remove hydraulic platform GSE 031 from the work area.
- (2) Remove all tools, equipment and unwanted materials from the work area.
- (3) On the circuit breaker panel, close the RUDDER 1 and RUDDER 2 circuit breakers and attach a DO-NOT-CLOSE tag to them.
- (4) Pressurize hydraulic systems 1 and 2 ([AMM TASK 29-10-00-860-802-A/200](#)).
- (5) Do a check of the rudder I/II backlashes ([AMM TASK 27-22-00-700-801-A/500](#)).
- (6) Do the procedure to put the aircraft to its initial condition.