FLAP TRANSMISSION BRAKE - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

A. This section gives the procedures to remove and install the flap transmission brake (FTB).

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*
27-51-01-000-801-A	FLAP TRANSMISSION BRAKE - REMOVAL	ALL
27-51-01-400-801-A	FLAP TRANSMISSION BRAKE - INSTALLATION	ALL

TASK 27-51-01-000-801-A
EFFECTIVITY: ALL

2. FLAP TRANSMISSION BRAKE - REMOVAL

A. General

(1) This task gives the procedures to remove the flap transmission brake (FTB).

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-30-00/100	-
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
5721		Wing trailing edge
6721		Wing trailing edge

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 299	Soft Jaw Pliers	To disconnect and connect electrical connectors	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Wing trailing edge

I. Preparation

SUBTASK 841-002-A

WARNING: MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT IN THE FLAP TRAVEL AREA.

(1) Make sure that the aircraft is safe for maintenance.

(2) Do not do other tasks on the flap system at this time.

(3) Energize the aircraft with an external DC-power supply (AMM TASK 20-40-01-860-801-A/200).

(4) Set the flaps to the 45-degree position.

(5) On the circuit breaker panel, open the FLAP 1 and FLAP 2 circuit breakers and attach a DO-NOT-CLOSE tag to them.

(6) Open the lower shroud of the outboard flap (AMM MPP 06-30-00/100).

J. Removal (Figure 401)

SUBTASK 020-002-A

(1) Cut and remove the lockwire that locks flap flexible shaft (FFS) section 4 and section 5 to the flap transmission brake (1).

(2) Disconnect the electrical connector (5).

NOTE: If necessary, use soft jaw pliers (GSE 299) to disconnect the electrical connector.

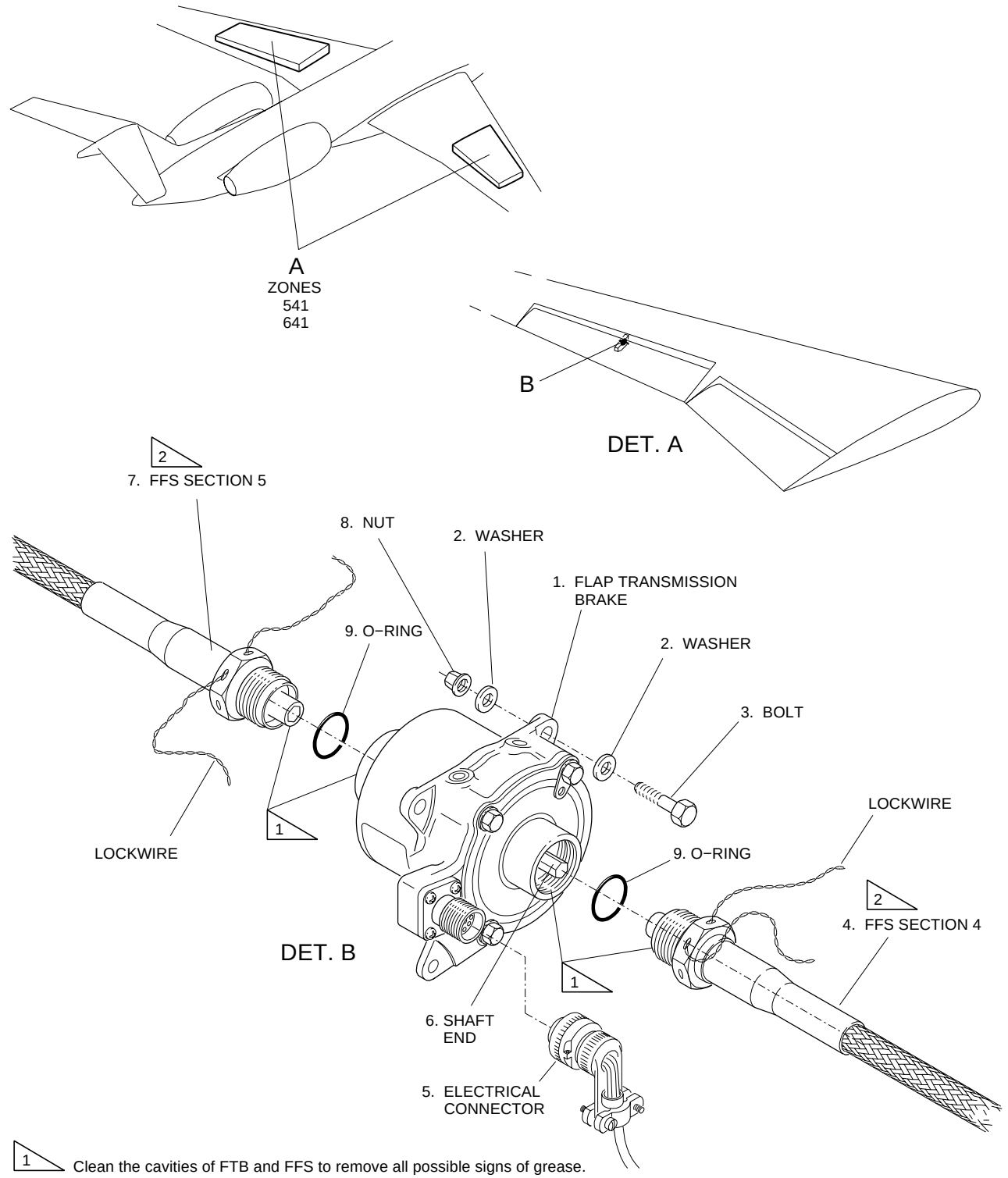
(3) Loosen FFS section 4 (4) and FFS section 5 (7) from the flap transmission brake (1).

(4) Loosen the bolts (3), washers (2), and nuts (6) to remove the flap transmission brake (1).

(5) Remove the flap transmission brake (1).

EFFECTIVITY: ALL

Flap Transmission Brake - Removal/Installation
Figure 401



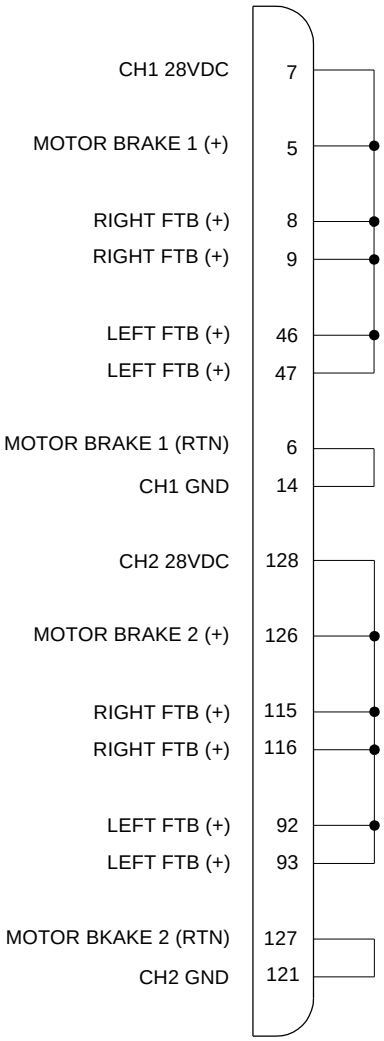
1 Clean the cavities of FTB and FFS to remove all possible signs of grease.

2 TORQUE: 19.2 − 25 N.m (170 − 221 lb.in)

EM145AMM270918B.DGN

EFFECTIVITY: ALL

Adapter Connector for Flap-Brake Release - Diagram
Figure 402



NOTE: USE CONNECTOR PN:D38999/20FJ35PN OR JD38999/20FJ35PN
AND ELETRICAL WIRE PN: MS22759/41−22−9 AS NECESSARY.

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TASK 27-51-01-400-801-A
EFFECTIVITY: ALL

3. FLAP TRANSMISSION BRAKE - INSTALLATION

A. General

(1) This task gives the procedures to install the flap transmission brake (FTB).

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-30-00/100	-
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 27-51-00-700-801-A/500	FLAP CONTROL SYSTEM - OPERATIONAL CHECK
IPC 27-51-00	FLAP MECHANICAL

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
5721		Wing trailing edge - LH
6721		Wing trailing edge - RH

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 051	DC Power Rectifier	To energize the FTB	
GSE 065	Harness, External Power FTB Feed	To electrically release the FTB	
GSE 071	FTB Test Fixture	To adapt the torque wrench in the FTB	
GSE 299	Soft Jaw Pliers	To disconnect and connect electrical connectors	
Commercially available	Click-Type, Wrench - Torque	To apply the torques on the FTB	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
D38999/ 20FJ35PN	Adapter Connector (Figure 402)	To electrically release the FTB	1
M22759/ 41-22-9	Electrical wire (Figure 402)	To use on the adapter connector	As necessary

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-L-87177	Lektro-Tech Super Corr-B-12350 Lubricant and Anticorrosive Film	As necessary

(Continued)

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
Commercially available	Parker Super-O-Lube Lubricant	AR

G. Expendable Parts

ITEM	*IPC REFERENCE (VENDOR REFERENCE)*	*QTY*
O-ring	IPC 27-51-00	2

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Wing trailing edge

I. Installation (Figure 401) (Figure 402)

SUBTASK 420-002-A

WARNING: MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT IN THE FLAP TRAVEL AREA.

(1) Put the flap transmission brake (1) on the rib of the center track.

(2) Tighten the bolts (3), washers (2), and nuts (8) to install the flap transmission brake (1).

(3) Install the FTB test fixture (GSE 071 or click-type torque wrench, as recommend) on the flap transmission brake (1).

(4) Apply a torque of 7 N.m (62 lbf.in) to the FTB in the two directions. Make sure that no angular movement occurs.

NOTE:
- It is recommended to utilize a click-type torque wrench to avoid a false indications or occurrences and minimize human factor during the functional check.
- The investigation determined that using a dial-type torque wrench it is possible to apply a quick impulse to achieve the desired setting along with inadvertently exceeding the holding ability of the FTB.
- When you start to apply the torque, a small angular movement occurs because of the FTB backlash. Other angular movements are not allowed.

(5) Electrically release the FTB.

NOTE: To turn the FTB hex shaft you must use GSE 065 or the adapter connector (Figure 402) to electrically release the FTB.

(a) If you use GSE 065 to release the FTB, do the procedures that follow:

1. Connect GSE 065 to the FTB connector.

2. Connect the external DC-power rectifier (GSE 051) to the GSE 065.

3. Energize the FTB with the external DC-power rectifier (GSE 051).

(b) If you use the adapter connector, do the procedures that follow:

1. Disconnect electrical connector P1104 from the flap electronic control unit (FECU).

2. Connect the adapter connector (Figure 402) to connector P1104.

3. Energize the aircraft with the external power supply (AMM TASK 20-40-01-860-801-A/200).

4. On the circuit breaker panel, make sure that the FLAP 1 and FLAP 2 circuit breakers are closed.

(6) Apply torque to the FTB in the two directions. Make sure that no sticking of brake occurs.

NOTE: A brake-out torque not larger than 0.5 N.m (4.42 lbf.in) is permitted.

(7) Remove the FTB test fixture (GSE 071 or click-type torque wrench, as recommend) of the flap transmission brake (1).

(8) Align the male hex shaft of the flap transmission brake (1) with the female hex shaft of section 4 and section 5 of the FFSs.

(9) If you used GSE 065, do the procedure that follows:

(a) De-energize the FTB.

(b) Disconnect the external DC-power rectifier (GSE 051) from the GSE 065.

(c) Disconnect GSE 065 from the FTB connector.

(10) If you used the adapter connector, do the procedure that follows:

(a) De-energize the aircraft (AMM TASK 20-40-01-860-801-A/200).

(b) Disconnect the adapter connector (Figure 402) from connector P1104.

(c) Connect electrical connector P1104 to the FECU.

CAUTION: MAKE SURE THAT THERE IS NO GREASE IN THE CAVITIES OF THE FFS AND FTB. GREASE CAN CAUSE DAMAGE TO THE FTB.

(11) Clean the cavities of the FTB and FFS to remove all possible signs of grease.

(12) Before you install FFS section 4 (4) and FFS section 5 (7), replace the O-ring (9). Refer to (Figure 401)

(13) Coat the new O-ring (9) with a thin film of Parker Super-O-Lube before the assembly.

(14) Connect FFS section 4 (4) and FFS section 5 (7) to the FTB.

(15) Apply a torque of 19.2 to 25 N.m (170 to 221 lb.in) to the FFS section 4 (4) and FFS section 5 (7).

(16) Safety the FFS section 4 (4) and FFS section 5 (7).

NOTE: Make sure that the shaft is inserted fully, before you lockwire the nut.

WARNING: DO NOT GET LEKTRO-TECH SUPER CORR-B-12350 LUBRICANT AND ANTICORROSIVE FILM IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. PUT ON A PROTECTIVE SPLASH GOGGLE AND GLOVES WHEN YOU USE IT. KEEP AWAY FROM SPARKS, FLAME, AND HEAT. LEKTRO-TECH SUPER CORR-B-12350 LUBRICANT AND ANTICORROSIVE FILM IS A POISONOUS AND FLAMMABLE SUBSTANCE.

(17) Apply Lektro-Tech Super Corr-B-12350 film to the plug connector to prevent corrosion and clean the contacts. Refer to (Figure 401).

NOTE: There is not a definition for the exact amount of spray to be applied, but the product must cover the contacts without excess spray. Excess spray does not cause damage to the connector contacts and/or rubber, but can contribute to dirt accumulation.

CAUTION: MAKE SURE THAT THE PLUG FULLY COVERS THE RED BAND ON THE RECEPTACLE BODY.

(18) Connect the electrical connector (5) (Figure 401).

NOTE: It is recommended that soft jaw pliers (GSE 299) be used to make sure that the connector is connected correctly.

WARNING: DO NOT GET LEKTRO-TECH SUPER CORR-B-12350 LUBRICANT AND ANTICORROSIVE FILM IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. PUT ON A PROTECTIVE SPLASH GOGGLE AND GLOVES WHEN YOU USE IT. KEEP AWAY FROM SPARKS, FLAME, AND HEAT. LEKTRO-TECH SUPER CORR-B-12350 LUBRICANT AND ANTICORROSIVE FILM IS A POISONOUS AND FLAMMABLE SUBSTANCE.

(19) Apply the Lektro-Tech Super Corr-B-12350 lubricant and anticorrosive film to the electrical connector (5). Refer to (Figure 401).

NOTE: There is not a definition for the exact amount of spray to be applied, but the excess can contribute to dirt accumulation.

J. Follow-on

SUBTASK 842-002-A

(1) De-energize the aircraft (AMM TASK 20-40-01-860-801-A/200).

(2) On the circuit breaker panel, close the FLAP 1 and FLAP 2 circuit breaker and remove the DO-NOT-CLOSE tag from them.

(3) Close the lower shroud of the outboard flap (AMM MPP 06-30-00/100).

(4) Do the operational check of the flap control system (AMM TASK 27-51-00-700-801-A/500).