



## SPRING CARTRIDGES - REMOVAL/INSTALLATION

EFFECTIVITY: AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK

### 1. General

- A. This section gives the procedures to remove and install the electromechanical gust-lock spring cartridges.
- B. The spring cartridges are components of the electromechanical gust lock system. They are installed in the tail boom, inside the horizontal stabilizer torque box.
- 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
27-71-03-000-801-A	SPRING CARTRIDGES - REMOVAL	AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK
27-71-03-400-801-A	SPRING CARTRIDGES - INSTALLATION	AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK



EMB145 - EMB135

AIRCRAFT  
MAINTENANCE MANUAL

TASK 27-71-03-000-801-A

EFFECTIVITY: AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK

2. SPRING CARTRIDGES - REMOVAL

A. General

(1) This task gives the procedure to remove the gust-lock spring cartridges.

B. References

REFERENCE	DESIGNATION
AMM TASK 27-71-01-000-801-A/400	ELECTROMECHANICAL ACTUATOR - REMOVAL
AMM TASK 27-71-14-000-801-A/400	SPRING-CARTRIDGE POSITION MECHANISM - REMOVAL
AMM TASK 55-36-00-000-801-A/400	TAIL BOOM - REMOVAL
IPC 27-71-00	GUST LOCK ELECTROMECHANICAL

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
321	321	Tail boom

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Rubber Gloves resistant to Phosphate-Ester Base fluid	Protection for the hands	1
Commercially available	Rubber Gloves resistant to Phosphate-Ester Base fluid	Protection for the eyes	1

F. Consumable Materials

Not Applicable

G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
Shim	IPC 27-71-00	AR

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Horizontal stabilizer

I. Preparation

**SUBTASK 841-002-A**

- (1) Set the gust lock system to the unlock position.
- (2) Remove rear fairings 321 of the horizontal stabilizer. Refer to [AMM TASK 55-36-00-000-801-A/400](#).
- (3) Remove the electromechanical gust lock actuator. Refer to [AMM TASK 27-71-01-000-801-A/400](#).
- (4) Remove the spring-cartridge position mechanism. Refer to [AMM TASK 27-71-14-000-801-A/400](#).

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

**SUBTASK 020-002-A**

**WARNING:** • **MAKE SURE THAT THE RUDDER, HORIZONTAL STABILIZER, AND ELEVATOR CANNOT BE OPERATED ACCIDENTALLY. AN ACCIDENTAL OPERATION CAN CAUSE INJURY TO PERSONS.**

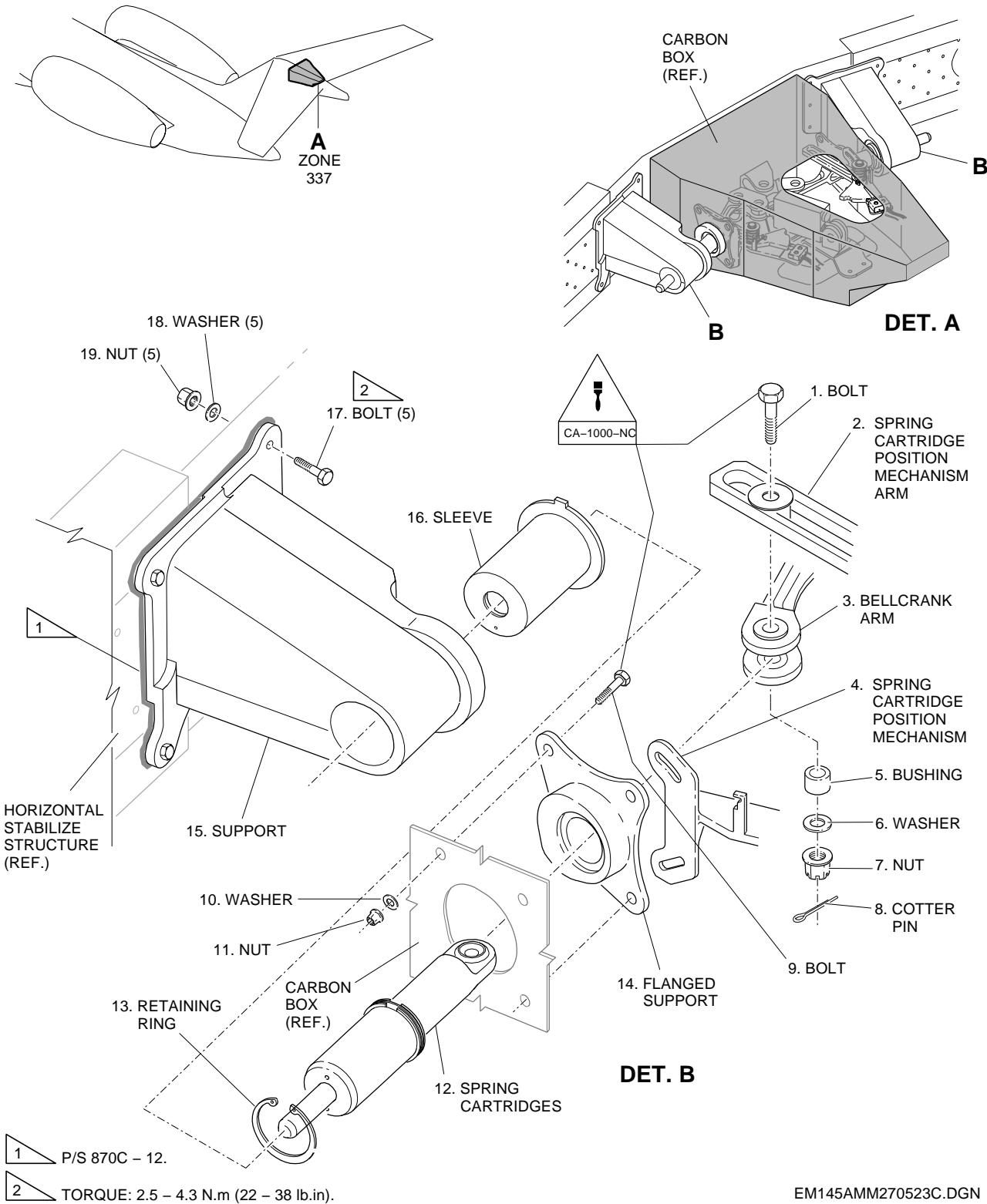
• **CA-1000 CORROSION-INHIBITING COMPOUND IS TOXIC TO SKIN, EYES, AND RESPIRATORY TRACT. USE PVC GLOVES AND EYE PROTECTION. USE ONLY IN WELL VENTILATED AREAS. OBEY THE MANUFACTURERS' HEALTH AND SAFETY INSTRUCTIONS.**

- (1) Remove the bolt (9), washer (10) and nut (11) to release the flanged support (14) from the horizontal stabilizer torque box . Refer to [Figure 401](#).
- (2) Remove the bolt (1), bushing (5), washer (6), nut (7) and cotter pin (8) to release the spring cartridge (12) from the bellcrank arm (3). Refer to [Figure 401](#).
- (3) Pull the spring cartridge (12) into the horizontal stabilizer torque box, to remove it. Refer to [Figure 401](#).
- (4) Remove the support (15) carefully and do not remove the shims. Refer to [Figure 401](#).  
**NOTE:** This is necessary to keep the alignment.
- (5) Remove the bolts (17), washers (18) and nuts (19) to release the support (15) from horizontal stabilizer structure. Refer to [Figure 401](#).
- (6) Remove the retaining ring (13) to release the sleeve (16) from the support (15). Refer to [Figure 401](#).
- (7) Remove the sleeve (16) from the support (15). Refer to [Figure 401](#).

**EFFECTIVITY: AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK**

Spring Cartridges - Removal/Installation

Figure 401



EM145AMM270523C.DGN

**TASK 27-71-03-400-801-A**

**EFFECTIVITY: AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK**

**3. SPRING CARTRIDGES - INSTALLATION**

**A. General**

(1) This task gives the procedure to install the gust-lock spring cartridges.

**B. References**

REFERENCE	DESIGNATION
AMM TASK 27-71-00-700-801-A/500	ELECTROMECHANICAL GUST LOCK - OPERATIONAL CHECK
AMM TASK 27-71-01-400-801-A/400	ELECTROMECHANICAL ACTUATOR - INSTALLATION
AMM TASK 27-71-01-700-801-A/500	ELECTROMECHANICAL ACTUATOR - FUNCTIONAL CHECK
AMM TASK 27-71-03-700-801-A/500	SPRING-CARTRIDGE FRICTION FORCE - TEST
AMM TASK 27-71-03-700-802-A/500	SPRING CARTRIDGE ALIGNMENT
AMM TASK 27-71-14-400-801-A/400	SPRING-CARTRIDGE POSITION MECHANISM - INSTALLATION
AMM TASK 55-36-00-400-801-A/400	TAIL BOOM - INSTALLATION
FIM TASK 27-70-00-810-808-A	-
IPC 27-71-00	GUST LOCK ELECTROMECHANICAL

**C. Zones and Accesses**

ZONE	PANEL/DOOR	LOCATION
321	321	Tail boom

**D. Tools and Equipment**

Not Applicable

**E. Auxiliary Items**

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Rubber Gloves resistant to Phosphate-Ester Base fluid	Protection for the hands	1
Commercially available	Rubber Gloves resistant to Phosphate-Ester Base fluid	Protection for the eyes	1

**F. Consumable Materials**

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MEP 09-060	Corrosion-Inhibiting Compound	As necessary



EMB145 - EMB135

AIRCRAFT  
MAINTENANCE MANUAL

(Continued)

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MIL-PRF-81733	Sealant PS870 C-12	As nec- essary

## G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
Cotter pin	IPC 27-71-00	2

## H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Horizontal stabilizer

## I. Installation (Figure 401)

## SUBTASK 420-002-A

- WARNING:** • **MAKE SURE THAT THE RUDDER, HORIZONTAL STABILIZER, AND ELEVATOR CANNOT BE OPERATED ACCIDENTALLY. AN ACCIDENTAL OPERATION CAN CAUSE INJURY TO PERSONS.**
- **CA-1000 CORROSION-INHIBITING COMPOUND IS TOXIC TO SKIN, EYES, AND RESPIRATORY TRACT. USE PVC GLOVES AND EYE PROTECTION. USE ONLY IN WELL VENTILATED AREAS. OBEY THE MANUFACTURERS' HEALTH AND SAFETY INSTRUCTIONS.**

- (1) Before the installation of the spring cartridge, refer to [AMM TASK 27-71-03-700-801-A/500](#) for the functional test.
- (2) Install the sleeve (16) into the support (15) and use the retaining ring (13) to lock it. Refer to (Figure 401).

**CAUTION:** MAKE SURE THAT THE SHIMS BETWEEN THE SUPPORT AND STRUCTURE ARE INSTALLED IN THE SAME POSITION AS THEY WERE BEFORE THE REMOVAL OF THE SUPPORT. THIS IS NECESSARY TO KEEP THE ALIGNMENT OF THE SPRING CARTRIDGE AS IT WAS BEFORE THE SUPPORT (15) REMOVAL.

- (3) Before the installation of the support (15), remove the old sealant and apply sealant PS870 C-12. Refer to (Figure 401).
- (4) Install the support (15) to the horizontal stabilizer structure with the bolts (17), washers (18) and nuts (19). Apply the correct torque. Refer to (Figure 401).
- (5) Install the spring cartridge (12) into the horizontal stabilizer torque box and push until it reaches the support (15). Refer to (Figure 401).
- (6) Apply corrosion-inhibiting compound as shown in (Figure 401). For this, use gloves and goggles.

- (7) Use the bolt (9), washer (10), and nuts (11) to install the flanged support (14) in the horizontal stabilizer torque box. Refer to (Figure 401).

**NOTE:** If necessary to permit a good alignment and free movement of the spring-cartridges (12), use shims to aid the installation of the flanged support (14) to the horizontal stabilizer torque box. Refer to [AMM TASK 27-71-03-700-802-A/500](#).

- (8) Apply a thin layer of sealant PS870 C-12 to the flanged support region that contacts the carbon box. Refer to [Figure 402](#).
- (9) Install the spring cartridge (12) to the bellcrank arm (3) with the bolt (1), bushing (5), washer (6) nut (7) and cotter pin (8). Refer to (Figure 401).
- (10) Make sure that the bolts (1) that attach the spring cartridges to the bellcranks are tightly connected. Refer to (Figure 401).

**J. Follow-on**

**SUBTASK 842-002-A**

- (1) Install the spring-cartridge position mechanism. Refer to [AMM TASK 27-71-14-400-801-A/400](#).
- (2) Install the electromechanical gust lock actuator. Refer to [AMM TASK 27-71-01-400-801-A/400](#).
- (3) Do the operational check of the electromechanical gust lock system. Refer to [AMM TASK 27-71-00-700-801-A/500](#).
- (4) Do the operational check of the electromechanical actuator. Refer to [AMM TASK 27-71-01-700-801-A/500](#).

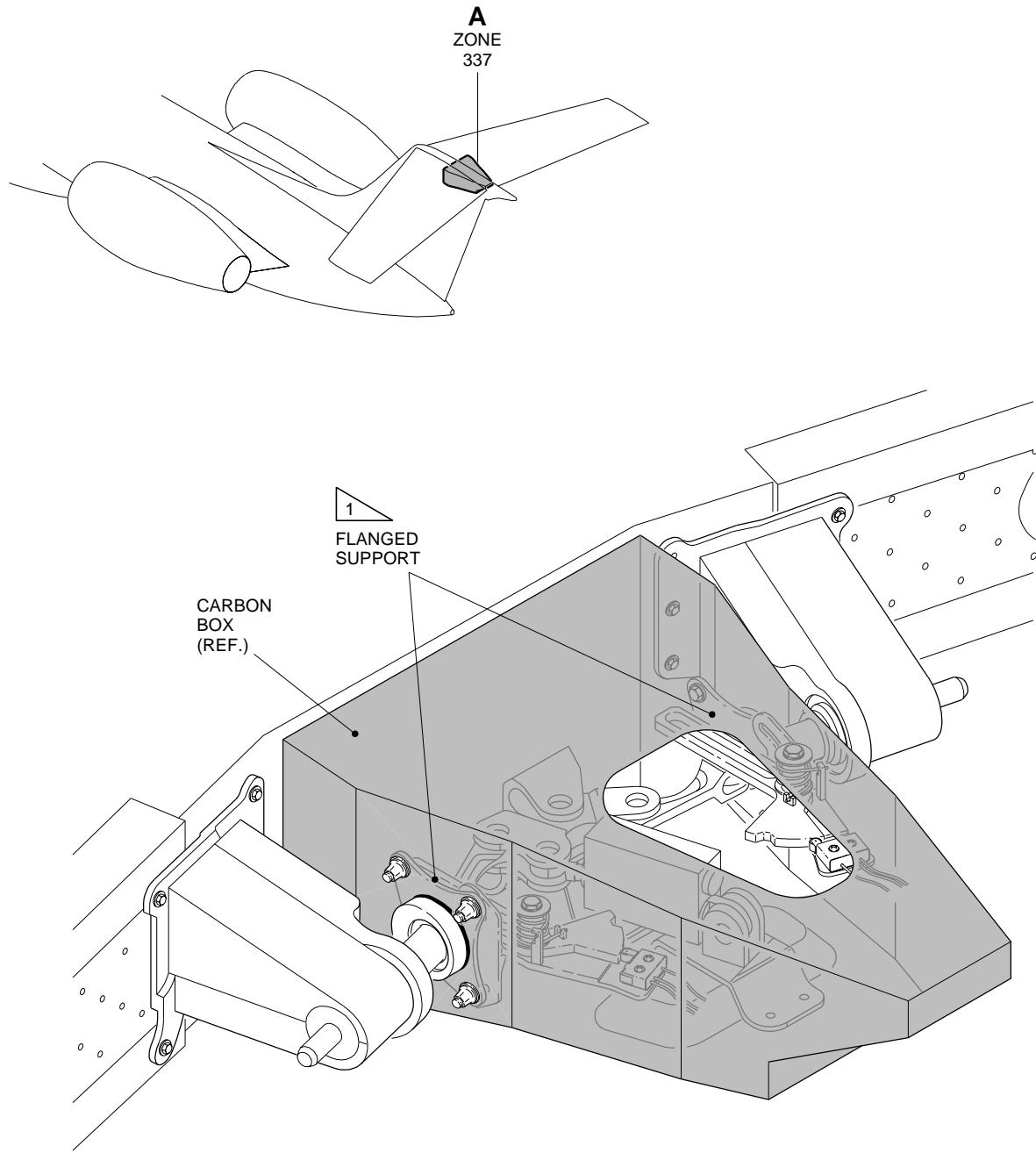
If the check of the actuator is not OK, check the components of the electromechanical gust lock mechanism for excessive internal friction forces. Refer to FIM TASK 27-70-00-810-808-A.

- (5) Install rear fairings 321 of the horizontal stabilizer ([AMM TASK 55-36-00-400-801-A/400](#)).
- (6) Set the gust lock system to the locked position.

**EFFECTIVITY: AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK**

Spring Cartridges - Sealant Application

Figure 402



**DET. A**

 1 APPLY A THIN LAYER OF SEALANT PS870C-12 ON THE FLANGED SUPPORT.

EM145AMM270626C.DGN