



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

RUDDER STOP ACTUATOR - REMOVAL/INSTALLATION

EFFECTIVITY: JAA-CERTIFIED AIRCRAFT (POST-MOD SB 145-27-0015 OR FACTORY-MODIFIED)

1. General

- A. This section gives the procedures to remove and install the stop actuators of the rudder control system.
- B. These procedures are applicable to the two stop actuators of the rudder control system.
- C. The stop actuators are installed in the compartment behind the rear pressure bulkhead.
- D. 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 |
|--------------------|------------------------------|--|
| 27-22-04-000-801-A | STOP ACTUATOR - REMOVAL | JAA-CERTIFIED AIRCRAFT (POST-MOD SB 145-27-0015 OR FACTORY-MODIFIED) |
| 27-22-04-400-801-A | STOP ACTUATOR - INSTALLATION | JAA-CERTIFIED AIRCRAFT (POST-MOD SB 145-27-0015 OR FACTORY-MODIFIED) |



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TASK 27-22-04-000-801-A

EFFECTIVITY: JAA-CERTIFIED AIRCRAFT (POST-MOD SB 145-27-0015 OR FACTORY-MODIFIED)

2. STOP ACTUATOR - REMOVAL

A. General

- (1) This procedure gives the instructions to remove the stop actuator of the rudder control system.
- (2) This procedure is applicable to the two stop actuators of the rudder control system.

B. References

| REFERENCE | DESIGNATION |
|---------------------------------|--|
| AMM MPP 06-42-00/100 | - |
| AMM TASK 27-23-08-000-801-A/400 | STOP MICROSWITCH - REMOVAL |
| AMM TASK 29-10-00-860-801-A/200 | HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS |

C. Zones and Accesses

| ZONE | PANEL/DOOR | LOCATION |
|------|------------|---|
| 311 | 312AR | Compartment behind the rear pressure bulkhead |

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

| ITEM | DESCRIPTION | PURPOSE | QTY |
|------------------------|---|--------------------------|--------|
| Commercially available | Rubber Gloves, Phosphate Ester-Base, Fluid Resistant | Protection for the hands | 1 pair |
| Commercially available | Rubber Goggles, Phosphate Ester-Base, Fluid Resistant | Protection for the eyes | 1 pair |

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

| QTY | FUNCTION | PLACE |
|-----|----------------------------|---|
| 1 | Does the task | Compartment behind the rear pressure bulkhead |
| 1 | Helps the other technician | Compartment behind the rear pressure bulkhead |



I. Preparation

SUBTASK 841-002-A

- (1) Release the pressure of the hydraulic system ([AMM TASK 29-10-00-860-801-A/200](#)).
- (2) On the Circuit Breaker Panel, open the AIR/GND C, AIR/GND D, ELEC PUMP 1, and ELEC PUMP 2 circuit breakers and attach a DO-NOT-CLOSE tag to them.
- (3) Open access door 312AR (AMM MPP 06-42-00/100).

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

SUBTASK 020-002-A

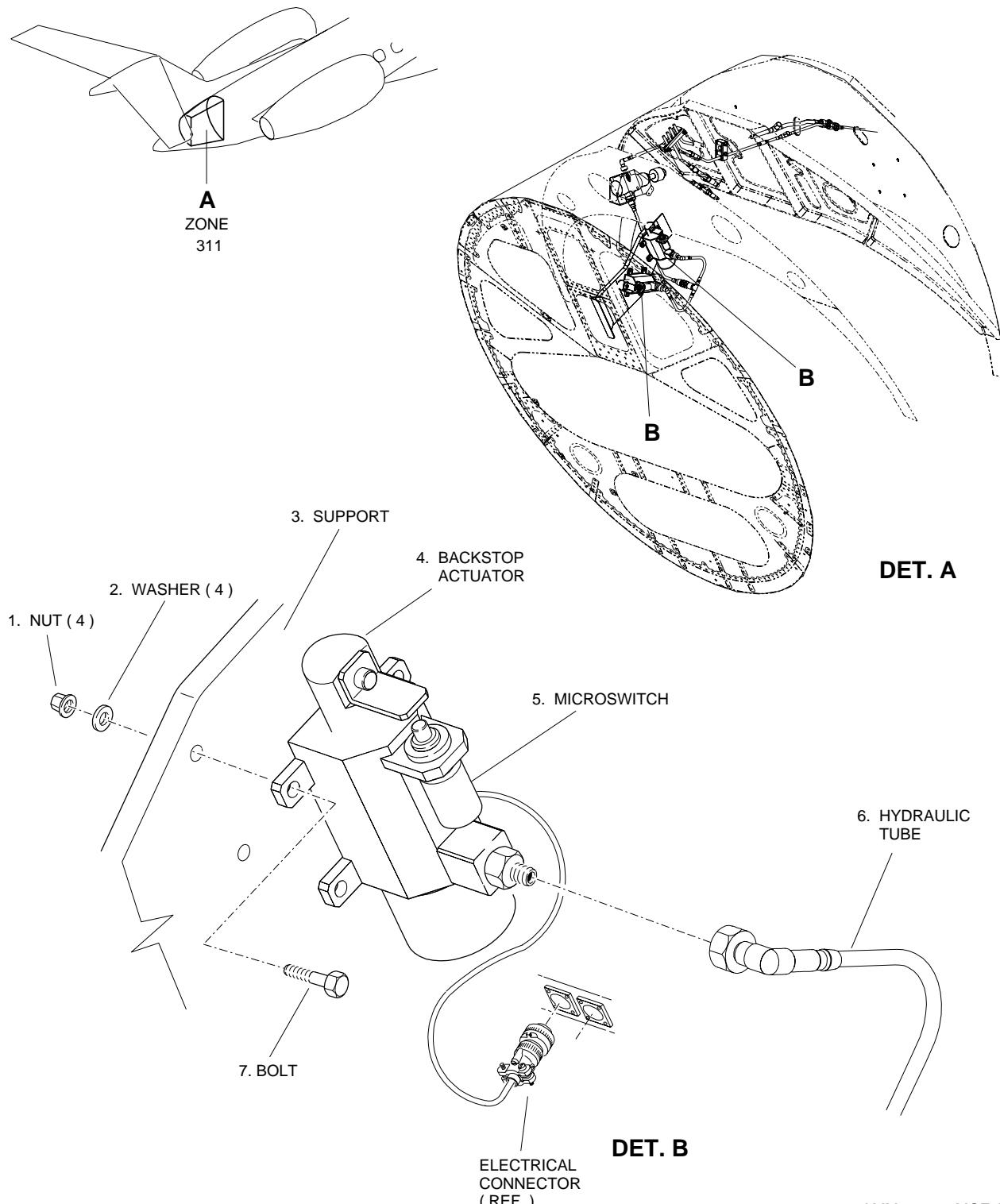
WARNING: THE HYDRAULIC SYSTEM CONTAINS PHOSPHATE-ESTER HYDRAULIC FLUID. THE FLUID CAN CAUSE IRRITATION IN YOUR SKIN OR INJURY TO YOUR EYES. USE THE APPLICABLE RUBBER GOGGLES AND GLOVES. IF THE FLUID TOUCHES YOU, FLUSH YOUR SKIN WITH WATER. IF IT GETS IN YOUR EYES, FLUSH THEM WITH WATER AND GET MEDICAL HELP.

- (1) Remove the microswitch (5) ([AMM TASK 27-23-08-000-801-A/400](#)).
- (2) Disconnect the hydraulic tube (6) from the stop actuator (4).
- (3) Remove the four nuts (1), washers (2), and bolts (7) to release the stop actuator (4) from the support (3).
- (4) Remove the stop actuator (4).

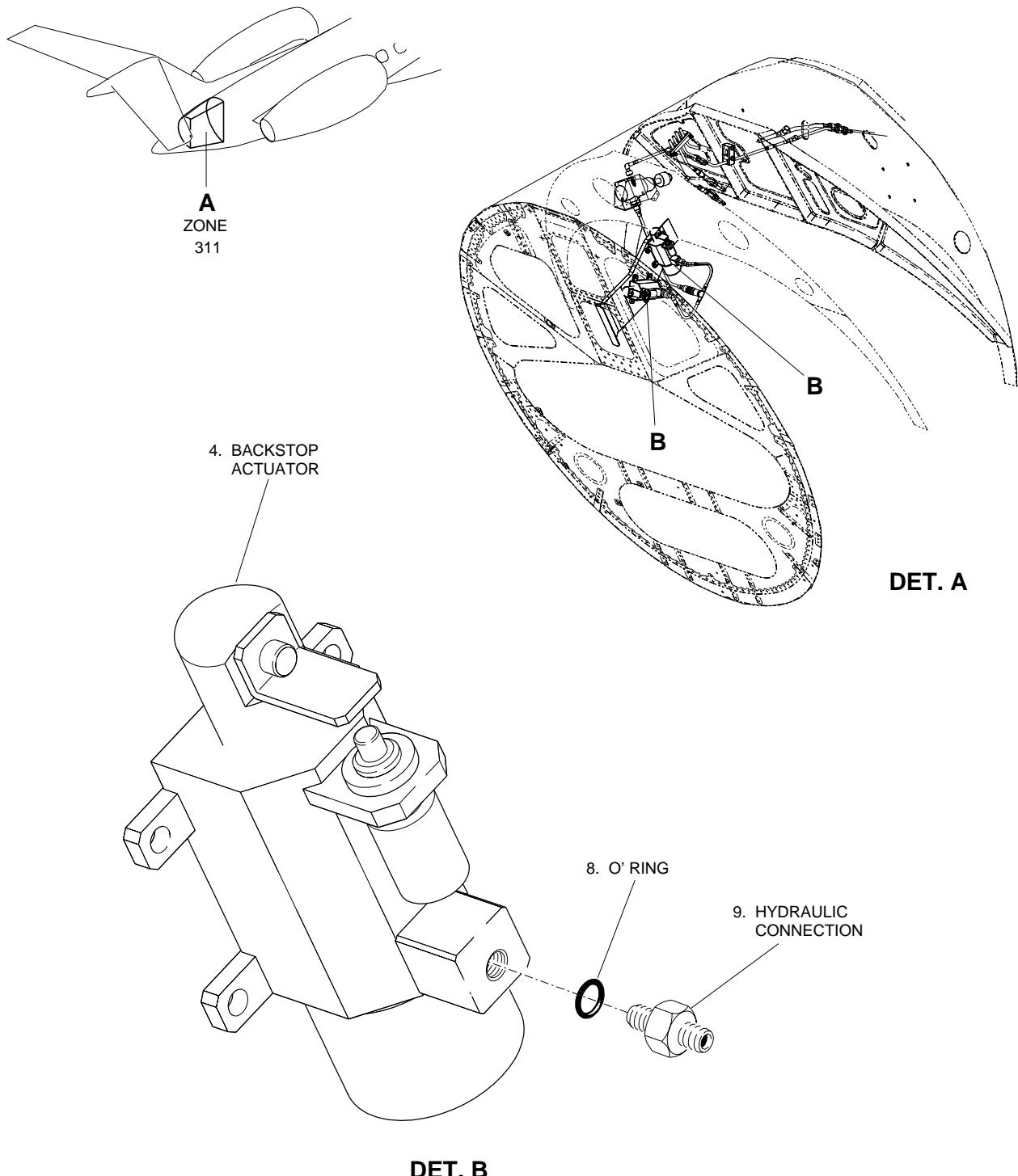
EFFECTIVITY: JAA-CERTIFIED AIRCRAFT (POST-MOD SB 145-27-0015)

Stop Actuator - Removal/Installation

Figure 401



145AMM270347.MCE A

EFFECTIVITY: JAA-CERTIFIED AIRCRAFT (POST-MOD SB 145-27-0015)
Hydraulic Connections of the Stop Actuator - Removal/Installation
Figure 402


145AMM270348.MCE A



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TASK 27-22-04-400-801-A

EFFECTIVITY: JAA-CERTIFIED AIRCRAFT (POST-MOD SB 145-27-0015 OR FACTORY-MODIFIED)

3. STOP ACTUATOR - INSTALLATION

A. General

- (1) This procedure gives the instructions to install the stop actuator of the rudder control system.
- (2) This procedure is applicable to the two stop actuators of the rudder control system.

B. References

| REFERENCE | DESIGNATION |
|---------------------------------|---|
| AMM MPP 06-42-00/100 | - |
| AMM TASK 27-21-00-700-801-A/500 | RUDDER MOVABLE PRIMARY STOP MECHANISM - OPERATIONAL CHECK |
| AMM TASK 27-23-08-400-801-A/400 | STOP MICROSWITCH - INSTALLATION |
| AMM TASK 29-10-00-860-803-A/200 | HYDRAULIC SYSTEM - BLEED OF AIR |
| IPC 27-22-00 | RUDDER HYDRAULIC ACTUATION |

C. Zones and Accesses

| ZONE | PANEL/DOOR | LOCATION |
|------|------------|---|
| 311 | 312AR | Compartment behind the rear pressure bulkhead |

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

| ITEM | DESCRIPTION | PURPOSE | QTY |
|------------------------|---|--------------------------|--------|
| Commercially available | Rubber Gloves, Phosphate Ester-Base, Fluid Resistant | Protection for the hands | 1 pair |
| Commercially available | Rubber Goggles, Phosphate Ester-Base, Fluid Resistant | Protection for the eyes | 1 pair |

F. Consumable Materials

Not Applicable

G. Expendable Parts

| ITEM | IPC REFERENCE (VENDOR REFERENCE) | QTY |
|--------|-------------------------------------|-------|
| O-ring | IPC 27-22-00 | 1/LRU |

H. Persons Recommended

| QTY | FUNCTION | PLACE |
|-----|----------------------------|---|
| 1 | Does the task | Compartment behind the rear pressure bulkhead |
| 1 | Helps the other technician | Compartment behind the rear pressure bulkhead |

I. Preparation (Figure 402)

SUBTASK 841-003-A

- (1) Remove the hydraulic connection (9) from the stop actuator (4) and keep it.
- (2) Remove and discard the old O-ring (8).
- (3) Install the new O-ring (8) to the stop actuator (4).
- (4) Install the hydraulic connection (9) to the stop actuator (4).

J. Installation (Figure 401)

SUBTASK 420-002-A

WARNING: THE HYDRAULIC SYSTEM CONTAINS PHOSPHATE-ESTER HYDRAULIC FLUID. THE FLUID CAN CAUSE IRRITATION IN YOUR SKIN OR INJURY TO YOUR EYES. USE THE APPLICABLE RUBBER GOGGLES AND GLOVES. IF THE FLUID TOUCHES YOU, FLUSH YOUR SKIN WITH WATER. IF IT GETS IN YOUR EYES, FLUSH THEM WITH WATER AND GET MEDICAL HELP.

- (1) Put the stop actuator (4) on the support (3).
- (2) Attach the stop actuator (4) to the support (3) with the bolts (7), washers (2), and nuts (1) (4 positions).
- (3) Connect the hydraulic tube (6) to the stop actuator (4).
- (4) Install the microswitch (5) ([AMM TASK 27-23-08-400-801-A/400](#)) to the stop actuator (4).

K. Follow-on

SUBTASK 842-002-A

- (1) On the Circuit Breaker Panel, close the AIR/GND C, AIR/GND D, ELEC PUMP 1, and ELEC PUMP 2 circuit breakers and remove the DO-NOT-CLOSE tag from them.
- (2) Bleed the air from the hydraulic system lines ([AMM TASK 29-10-00-860-803-A/200](#)).
- (3) Make sure that there are no leaks in the Stop Actuator.
- (4) Do an operational check of the Rudder-Movable Stop Mechanism System ([AMM TASK 27-21-00-700-801-A/500](#)).
- (5) Close access door 312AR (AMM MPP 06-42-00/100).

