

## NOSE LANDING GEAR DOOR ACTUATOR - REMOVAL/INSTALLATION

*EFFECTIVITY: ALL*

### 1. General

- A. This section gives the procedure to remove/install the actuator of the nose landing gear (NLG) door.
- 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
32-33-03-000-801-A	NLG DOOR ACTUATOR - REMOVAL	ALL
32-33-03-400-801-A	NLG DOOR ACTUATOR - INSTALLATION	ALL

TASK 32-33-03-000-801-A

EFFECTIVITY: ALL

## 2. NLG DOOR ACTUATOR - REMOVAL

### A. General

(1) This task gives the procedures to remove the actuator of the NLG door.

### B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
<a href="#">AMM TASK 29-10-00-860-802-A/200</a>	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
<a href="#">AMM TASK 32-00-01-910-801-A/200</a>	LG SAFETY PIN - INSTALLATION AND REMOVAL
<a href="#">AMM TASK 32-00-02-910-801-A/200</a>	SAFETY PIN OF THE NLG DOORS SOLENOID VALVE - INSTALLATION AND REMOVAL
<a href="#">SB145-32-0036</a>	-

### C. Zones and Accesses

Not Applicable

### 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
Commercially available	Rubber Goggles, Phosphate Ester-Base, Fluid - Resistant	Protection for the eyes	1

### F. Consumable Materials

Not Applicable

### G. Expandable Parts

Not Applicable

### H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Nose gear compartment

### I. Preparation

SUBTASK 841-002-A

(1) Make sure that the safety pins of the landing gears are installed ( [AMM TASK 32-00-01-910-801-A/200](#) ).

- (2) On the circuit breaker panel, open the ELEC PUMP 1 and CMD circuit breakers and attach a DO-NOT-CLOSE tag to them.
- (3) For aircraft POST-MOD [SB145-32-0036](#), install the safety pin of the NLG door solenoid valve ([AMM TASK 32-00-02-910-801-A/200](#)).
- (4) Make sure that the pressure in hydraulic system No. 1 is fully released ( [AMM TASK 29-10-00-860-802-A/200](#)).
- (5) Control the ailerons up and down, or the rudder to the left and to the right, until the pressure of the hydraulic system shows zero PSI on the EICAS.
- (6) Open access door 114CR of the nose hydraulic compartment ([AMM MPP 06-41-01/100](#)).
- (7) Release the pressure of the pax door/landing gear accumulator installed in the nose hydraulic compartment. For this, open the discharge valve and monitor the pressure gage until it shows the nitrogen precharge.

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

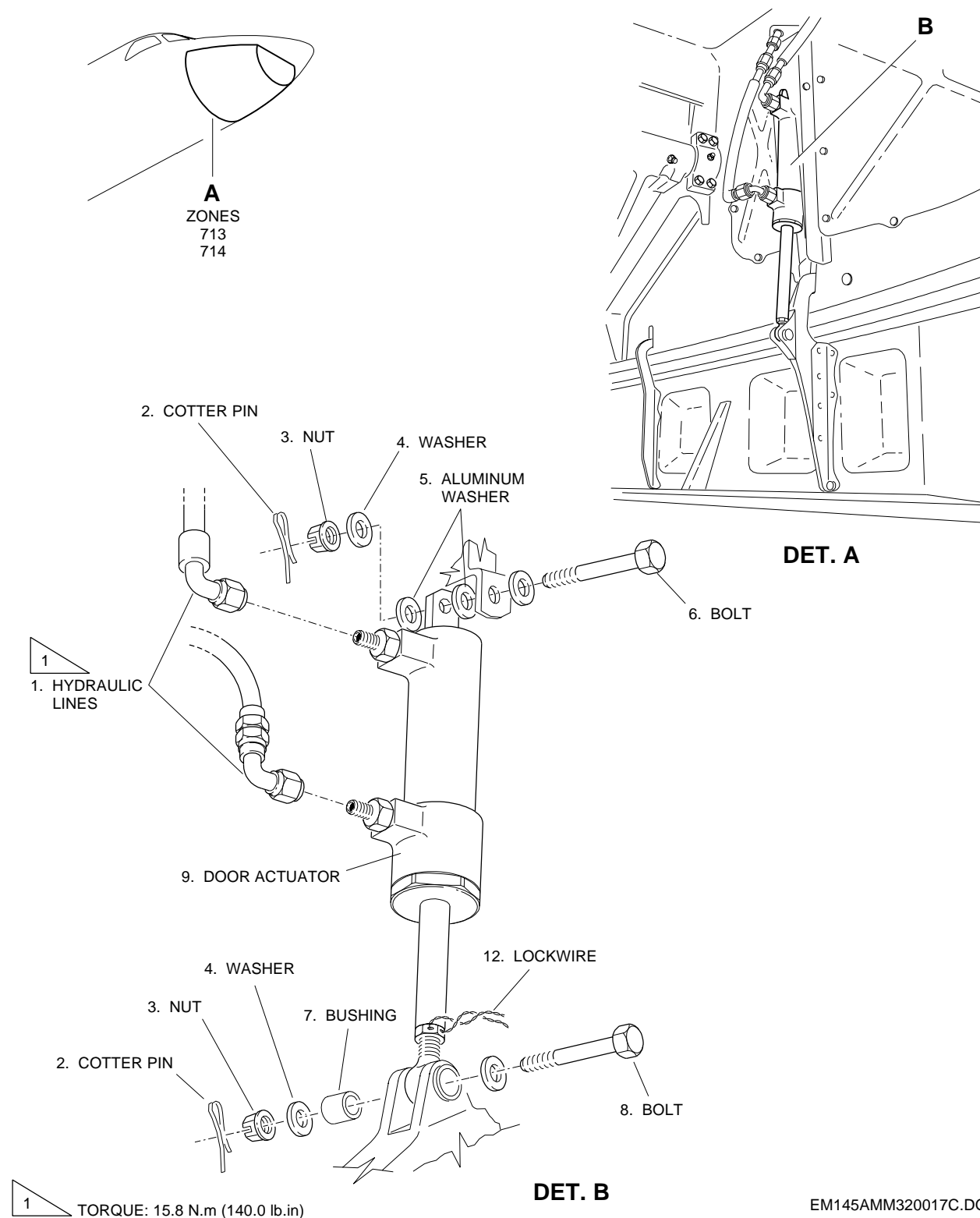
*SUBTASK 020-002-A*

- (1) Disconnect the hydraulic lines (1).
- (2) On the upper side of the actuator (9), remove the cotter pin (2), nut (3), washers (4), aluminum washers (5), and bolt (6).
- (3) On the lower side of the actuator (9) (door side), remove the cotter pin (2), nut (3), washers (4), bushing (7), and bolt (8).
- (4) Remove the actuator (9) of the nose-landing-gear door.

EFFECTIVITY:: ALL

NLG Door Actuator - Removal/Installation

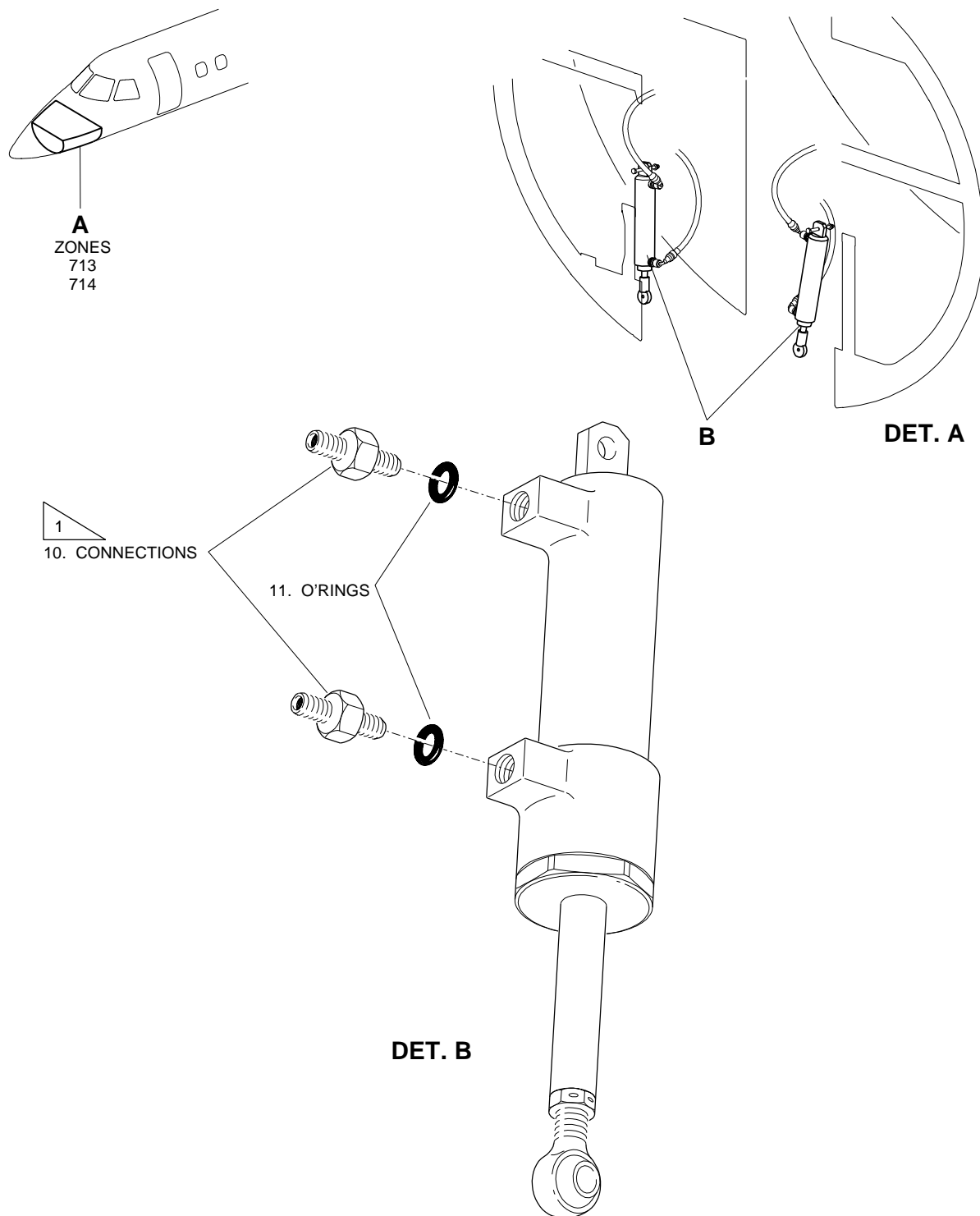
Figure 401



EFFECTIVITY:: ALL

Connections of the NLG Door Actuator - Removal/Installation

Figure 402



**1** TORQUE: 10.7 – 11.8 N.m (95.0 – 105.0 lb.in)

EM145AMM320008B.DGN

TASK 32-33-03-400-801-A

EFFECTIVITY: ALL

### 3. NLG DOOR ACTUATOR - INSTALLATION

#### A. General

(1) This task gives the procedures for installation of the NLG door actuator.

#### B. References

REFERENCE	DESIGNATION
AMM TASK 07-10-00-500-801-A/200	-
AMM TASK 12-13-01-600-801-A/300	HYDRAULIC SYSTEM RESERVOIR - FLUID LEVEL CHECK
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 29-10-00-860-801-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS
AMM TASK 32-00-01-910-801-A/200	LG SAFETY PIN - INSTALLATION AND REMOVAL
AMM TASK 32-00-02-910-801-A/200	SAFETY PIN OF THE NLG DOORS SOLENOID VALVE - INSTALLATION AND REMOVAL
AMM TASK 32-30-00-700-801-A/500	EXTENSION AND RETRACTION SYSTEM - OPERATIONAL CHECK
IPC 32-33-03	NLG DOOR ACTUATOR
SB145-32-0036	-

#### C. Zones and Accesses

Not Applicable

#### 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
Commercially available	Rubber Goggles, Phosphate Ester-Base, Fluid - Resistant	Protection for the eyes	1

#### F. Consumable Materials

Not Applicable

#### G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
Cotter pin	IPC 32-33-03	1
Cotter pin	IPC 32-33-03	1

(Continued)

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
O-rings	IPC 32-33-03	2/LRU
Lockwire	IPC 32-33-03	AR

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Nose gear compartment

I. Preparation (Figure 402)

**SUBTASK 841-003-A**

- (1) Remove the connections (10) with the related O-rings (11) from the used NLG door actuator.
- (2) Discard the O-rings (11) removed in step (1).
- (3) Install the connections (10) with the related new O-rings (11) to the NLG door actuator.
- (4) Use a torque wrench to torque the connections (10) to 10.7 N.m (95.0 - 105.0 lb.in)
- (5) Make sure that the new actuator has the same rod length as the old actuator. If necessary, adjust the new actuator.

J. Installation (Figure 401)

**SUBTASK 420-002-A**

- (1) Attach the new actuator (9) of the NLG door to the related forward door of the nose gear compartment.
- (2) Install the bolt (6), washer (4), aluminum washers (5), nut (3), and cotter pin (2).
- (3) Install the bolt (8), washers (4), bushing (7), nut (3), and cotter pin (2).
- (4) Connect the hydraulic lines (1).
- (5) Use a torque wrench to torque the hydraulic lines (1) to 15.8 N.m (140.0 lb.in)

**WARNING:** BEFORE YOU ENERGIZE OR DEENERGIZE THE AIRCRAFT WHEN IT IS ON JACKS AND THE LANDING GEARS ARE LOCKED UP, MAKE SURE THAT THERE ARE NO MAINTENANCE PERSONS AT WORK IN THE NOSE LANDING GEAR AREA BECAUSE THE NOSE GEAR DOORS ARE ELECTRICALLY CONTROLLED AND:

- IF THE NOSE GEAR DOORS ARE CLOSED AND ELECTRIC POWER IS REMOVED, THE DOORS WILL OPEN AUTOMATICALLY; OR
- IF THE NOSE GEAR DOORS ARE OPEN AND WITHOUT ELECTRIC POWER, THE DOORS WILL CLOSE AUTOMATICALLY WHEN ELECTRIC POWER IS APPLIED.

IN EITHER CASE, SERIOUS INJURY TO MAINTENANCE PERSONS CAN OCCUR.

- (6) Lift the aircraft on jacks. Refer to AMM TASK 07-10-00-500-801-A/200.
- (7) Isolate the area of landing gear operation (RH MLG, LH MLG, and NLG) with fences.
- (8) Remove the landing gear safety pins ( [AMM TASK 32-00-01-910-801-A/200](#)).
- (9) For aircraft POST-MOD [SB145-32-0036](#), remove the safety pin of the NLG door solenoid valve ([AMM TASK 32-00-02-910-801-A/200](#)).
- (10) Energize the aircraft with the External DC Power Supply ( [AMM TASK 20-40-01-860-801-A/200](#)).
- (11) On the circuit breaker panel, close the ELEC PUMP 1 and CMD circuit breakers and remove the DO-NOT-CLOSE tag from them.
- (12) Pressurize hydraulic system 1 only ( [AMM TASK 29-10-00-860-801-A/200](#)), until the hydraulic accumulator is charged, as follows:

**WARNING:** MAKE SURE THAT THERE ARE NO PERSONS AND EQUIPMENT IN THE LANDING GEAR AREA.

- (13) Set the landing gear control lever to the UP position.
- (14) Examine the doors for correct alignment with the fuselage (Alignment limit:  $\pm 1$  mm as related to the door and the fuselage skin surface).
- (15) If the doors are not inside the alignment limit, adjust the length of the rod end of the new NLG door actuator (9) as follows:

**WARNING:** MAKE SURE THAT THERE ARE NO PERSONS AND EQUIPMENT IN THE LANDING GEAR AREA.

- (a) Set the landing gear control lever to the DOWN position.
- (b) For aircraft POST-MOD [SB145-32-0036](#), install the safety pin of the NLG door solenoid valve ([AMM TASK 32-00-02-910-801-A/200](#)).
- (c) Install the landing gear safety pins ( [AMM TASK 32-00-01-910-801-A/200](#)).
- (d) On the circuit breaker panel, open the ELEC PUMP 1 and CMD circuit breakers and attach a DO-NOT-CLOSE tag to them.



- (e) On the lower side of the two actuators (9) (door side), remove the cotter pin (2), nut (3), washers (4), bushing (7), and bolt (8).
- (f) Do steps (6), (7), (8), (10), and (12) again.
- (g) On the circuit breaker panel, open the CMD circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (h) With the landing gear in the up and locked position, close one door manually until it is aligned with the fuselage (Alignment limit:  $\pm 1$  mm as related to the door and the fuselage skin surface).
- (i) With the door closed, adjust the rod end of the NLG door actuator (9) rod to permit the bolt (8) to be installed, but do not install the bolt (8) now.
- (j) Open the door and close another door manually. Then do steps (h) and (i) again.
- (k) On the circuit breaker panel, close the CMD circuit breaker and remove the DO-NOT-CLOSE tag from it.

**WARNING: MAKE SURE THAT THERE ARE NO PERSONS AND EQUIPMENT IN THE LANDING GEAR AREA.**

- (l) Open the door and set the landing gear control lever to the DOWN position.
  - (m) Do steps (b), (c), and (d) again.
- (16) Safety the rod end of the NLG door actuator (9) with lockwire (12).
- (17) On the lower side of the actuator (door side), install the bolt (8), washers (4), bushing (7), nut (3), and cotter pin (2).

K. Follow-on

*SUBTASK 842-002-A*

- (1) Do the operational check of the landing gear (extension/retraction cycle). Make sure that there are no leaks in the actuator of the NLG door ( [AMM TASK 32-30-00-700-801-A/500](#)).
- (2) Bleed the air from the hydraulic fluid reservoir.
- (3) Fill the reservoir again ( [AMM TASK 12-13-01-600-801-A/300](#)).
- (4) For aircraft POST-MOD [SB145-32-0036](#), remove the safety pin of the NLG door solenoid valve ([AMM TASK 32-00-02-910-801-A/200](#)).

