



AIRCRAFT  
MAINTENANCE MANUAL

**CHECK VALVE FREE-FALL SYSTEM - REMOVAL/INSTALLATION**

*EFFECTIVITY: ALL*

1. General

- A. This section gives the procedure to remove and install the check valve of the free-fall system.
- B. To get access to the free-fall check valve, you must open access door 114CR (AMM MPP 06-41-01/100).
- 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
32-33-13-000-801-A	FREE-FALL CHECK VALVE - REMOVAL	ALL
32-33-13-400-801-A	FREE-FALL CHECK VALVE - INSTALLATION	ALL



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TASK 32-33-13-000-801-A

EFFECTIVITY: ALL

2. FREE-FALL CHECK VALVE - REMOVAL

A. General

- (1) This procedure gives the instructions to remove the free-fall check valve.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
<a href="#">AMM TASK 32-00-01-910-801-A/200</a>	LG SAFETY PIN - INSTALLATION AND REMOVAL

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
114	114CR	Nose hydraulic compartment

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 hydraulic 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 circuit breaker and attach a DO-NOT-CLOSE tag to it.

- (3) Control the ailerons up and down, or the rudder left and right, until the pressure of the hydraulic system shows zero PSI on the EICAS.
- (4) Open access door 114CR of the nose hydraulic compartment (AMM MPP 06-41-01/100).
- (5) Release the pressure of the hydraulic 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.
- (6) Identify the check valve to be removed.

J. Removal (Figure 401)

SUBTASK 020-002-A

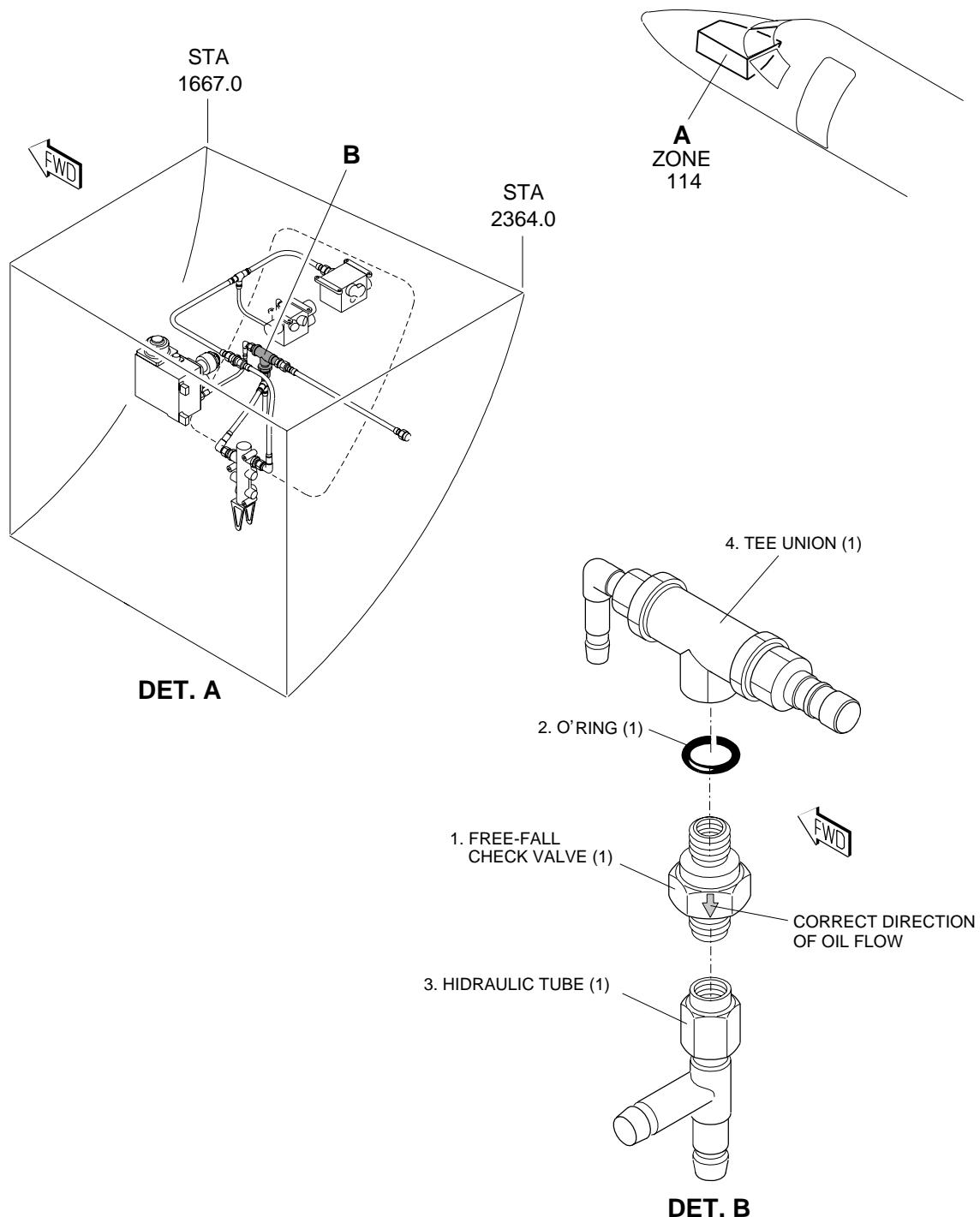
**WARNING: MAKE SURE THAT THERE IS NO PRESSURE IN THE HYDRAULIC SYSTEM. OBEY THE INSTRUCTIONS IN THE PREPARATION PARAGRAPH.**

- (1) Disconnect the hydraulic tube (3).
- (2) Remove the free-fall check valve (1) from the Tee union (4).
- (3) Remove and discard the O-ring (2).

**EFFECTIVITY: ALL**

Free-Fall Check Valve - Removal/Installation

Figure 401





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TASK 32-33-13-400-801-A

EFFECTIVITY: ALL

3. FREE-FALL CHECK VALVE - INSTALLATION

A. General

(1) This procedure gives the instructions to install the free-fall check valve.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
AMM TASK 12-13-01-600-801-A/300	HYDRAULIC SYSTEM RESERVOIR - FLUID LEVEL CHECK
AMM TASK 12-13-01-600-802-A/300	HYDRAULIC SYSTEM RESERVOIR - REPLENISHMENT
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 29-10-00-860-803-A/200	HYDRAULIC SYSTEM - BLEED OF AIR
AMM TASK 32-30-00-700-801-A/500	EXTENSION AND RETRACTION SYSTEM - OPERATIONAL CHECK
IPC 29-11-00	FUSELAGE

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
114	114CR	Nose hydraulic compartment

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
O-ring	IPC 29-11-00	1



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H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Nose hydraulic compartment

I. Installation (Figure 401)

SUBTASK 420-002-A

**CAUTION:** MAKE SURE THAT THE FREE-FALL CHECK VALVE WILL BE INSTALLED IN THE CORRECT DIRECTION OF THE OIL FLOW (REFER TO FIGURE 401). NON-OPERATION OF THE FREE-FALL SYSTEM CAN OCCUR IF THE CHECK VALVE IS INSTALLED INCORRECTLY.

- (1) Connect the free-fall check valve (1) with the new O-ring (2) in the TEE union (4).
- (2) Connect the hydraulic tube (3).

J. Follow-on

SUBTASK 842-002-A

- (1) On the circuit breaker panel, close the ELEC PUMP 1 circuit breaker and remove the DO-NOT-CLOSE tag from it.
- (2) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#))
- (3) Bleed the air from the hydraulic system lines ([AMM TASK 29-10-00-860-803-A/200](#)).
- (4) Do the check of the hydraulic reservoir level ([AMM TASK 12-13-01-600-801-A/300](#)). If necessary, fill the reservoir ([AMM TASK 12-13-01-600-802-A/300](#)).

**WARNING:** BEFORE YOU PRESSURIZE HYDRAULIC SYSTEM 1, MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT NEAR THE COMPONENTS ACTUATED WITH HYDRAULIC POWER. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO THE AIRCRAFT.

**CAUTION:** BEFORE YOU PRESSURIZE HYDRAULIC SYSTEM 1, MAKE SURE THAT THE LANDING GEAR SAFETY PINS ARE INSTALLED.

- (5) Set the ELEC PUMP 1 switch to on and make sure that the Multi-Function Display shows a pressure of  $2900 \pm 200$  PSI. Make sure that there are no leaks in the free-fall check valve ([AMM TASK 32-30-00-700-801-A/500](#)).
- (6) Close nose-hydraulic-compartment door 114CR (AMM MPP 06-41-01/100).