

LANDING GEAR HYDRAULIC ACCUMULATOR - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to remove and install the hydraulic accumulator of the landing gear actuation system.
- 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
32-33-15-000-801-A	LANDING-GEAR ACTUATION-SYSTEM HYDRAULIC ACCUMULATOR - REMOVAL	ALL
32-33-15-400-801-A	LANDING-GEAR ACTUATION-SYSTEM HYDRAULIC ACCUMULATOR - INSTAL- LATION	ALL

TASK 32-33-15-000-801-A

EFFECTIVITY: ALL

2. LANDING-GEAR ACTUATION-SYSTEM HYDRAULIC ACCUMULATOR - REMOVAL

A. General

- (1) This procedure gives the instructions to remove the hydraulic accumulator of the landing gear actuation system.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
AMM TASK 29-10-00-860-802-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
114	114CR	Nose hydraulic compartment

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	1 1/2-inch Open-End Wrench	To hold the hydraulic accumulator	

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 Goggles, Resistant to Phosphate Ester-Base Fluid	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

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) On the circuit breaker panel, open the ELEC PUMP 1 circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (2) Open access door 114CR of the nose hydraulic compartment (AMM MPP 06-41-01/100).
- (3) Depressurize the hydraulic system 1 ([AMM TASK 29-10-00-860-802-A/200](#)).
- (4) Fully release the pressure in the fluid chamber of the hydraulic accumulator of the landing-gear actuation system. For this, open the discharge valve and monitor the pressure gage until it shows the nitrogen precharge.
- (5) Slowly open the charging valve of the nitrogen chamber of the hydraulic accumulator to let all pressure in it go out.

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

SUBTASK 020-002-A

CAUTION: TO DISCONNECT THE TUBES (2) AND (5), HOLD THE HYDRAULIC ACCUMULATOR (1) BY THE NEAREST FITTING WITH THE AID OF AN OPEN-END WRENCH. THIS WILL PREVENT THE TWIST OF THE HYDRAULIC ACCUMULATOR, WHICH CAN CAUSE DAMAGE TO IT. REFER TO FIGURE 401.

- (1) Disconnect the hydraulic tubes (2) and (5).
- (2) Loosen the clamps (3) and (4).
- (3) Remove the hydraulic accumulator (1).

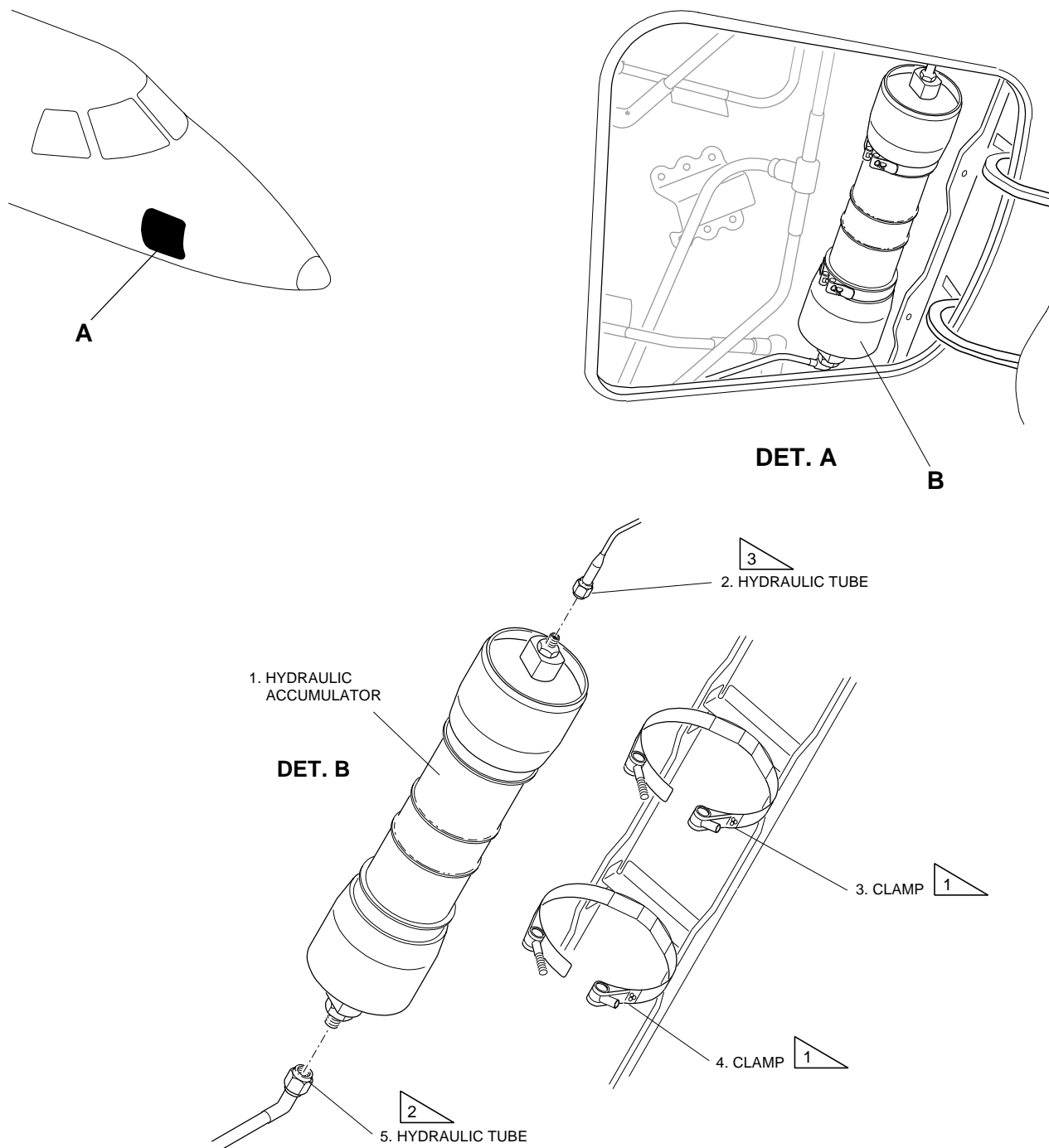
CAUTION: TO LOOSEN THE FITTINGS (6) AND (9), HOLD THE HYDRAULIC ACCUMULATOR (1) BY THE NEAREST DRIVE POINT WITH THE AID OF AN 1 1/2-INCH OPEN-END WRENCH. THIS WILL PREVENT THE TWIST OF THE HYDRAULIC ACCUMULATOR, WHICH CAN CAUSE DAMAGE TO IT. REFER TO FIGURE 402.

- (4) Remove and keep the fittings (6) and (9).
- (5) Remove and discard the old O-rings (7) and (8).

EFFECTIVITY: ALL

Main-Door Actuation-System Hydraulic Accumulator - Removal/Installation

Figure 401



1 TORQUE: 4.5 N.m (40 lb.in)

2 TORQUE: 29.4 – 31.6 N.m (260 – 280 lb.in)

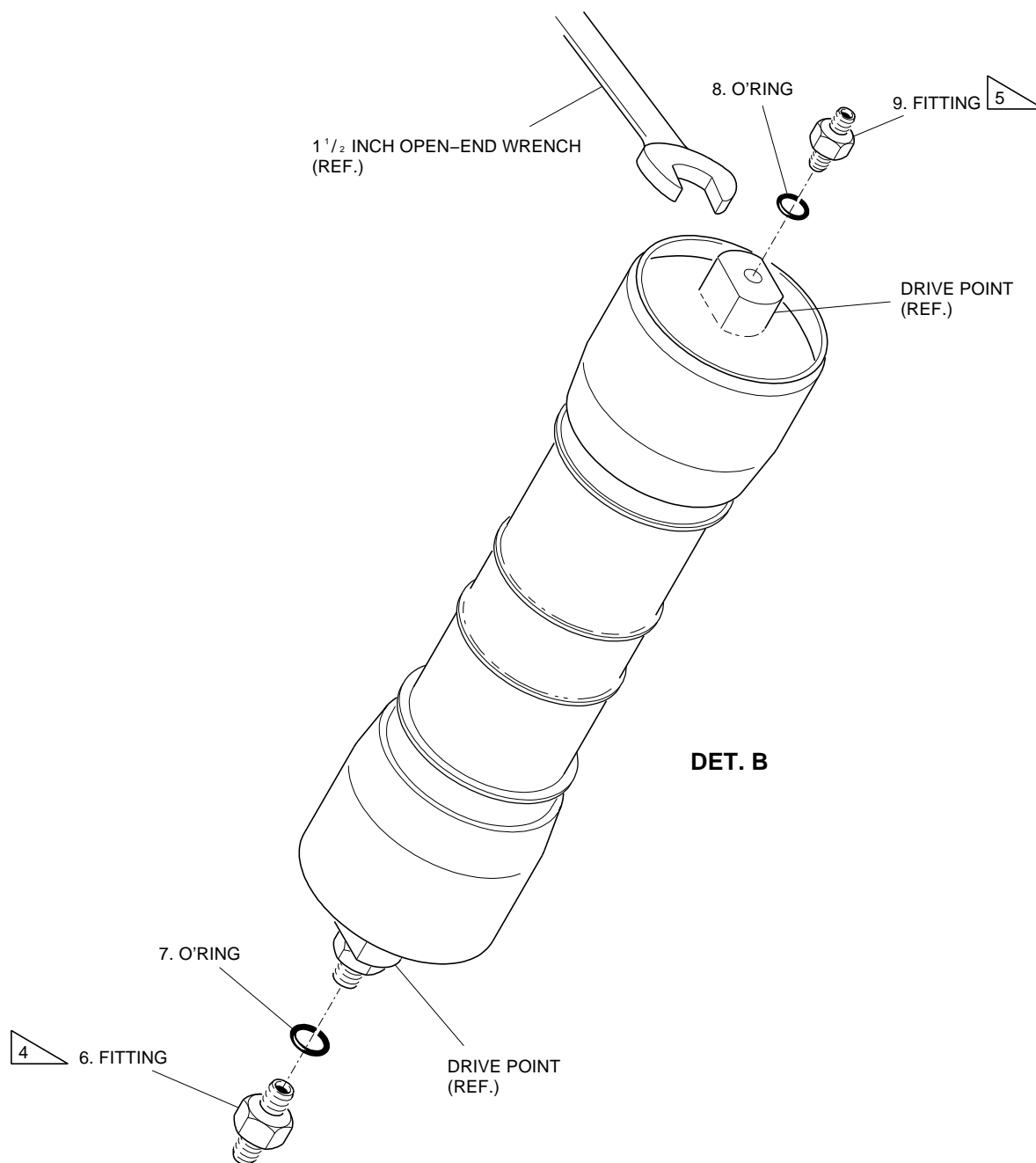
3 TORQUE: 15.3 – 16.4 N.m (135 – 145 lb.in)

EM145AMM520006D.DGN

EFFECTIVITY: ALL

Main-Door Actuation-System Hydraulic Accumulator - Removal/Installation

Figure 402



4 TORQUE: 62.1 – 67.8 N.m (550 – 600 lb.in)

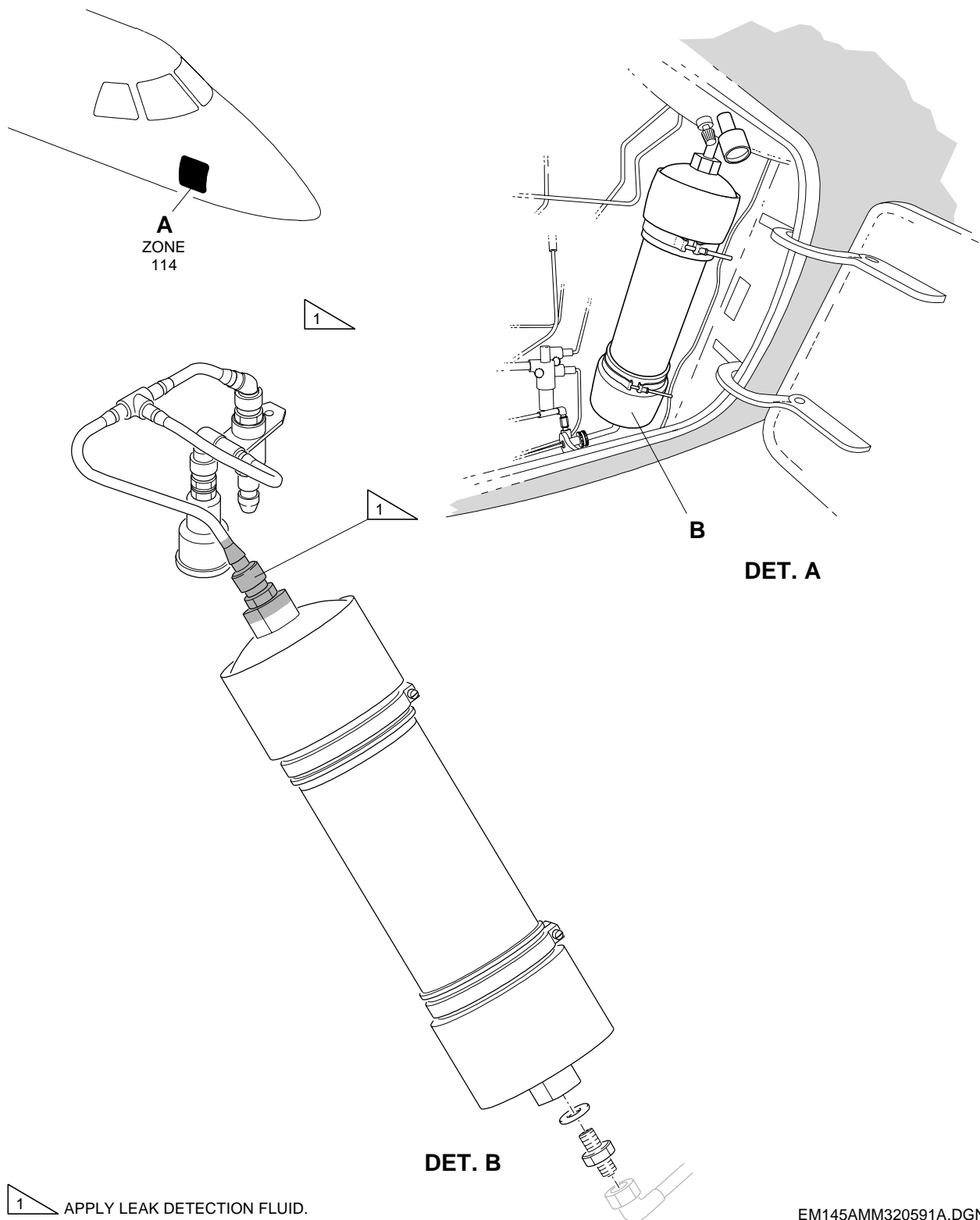
5 TORQUE: 14.1 – 15.3 N.m (125 – 135 lb.in)

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EFFECTIVITY: ALL

Main-Door Actuation-System Hydraulic Accumulator - Test For Gas Leakage

Figure 403



EM145AMM320591A.DGN

TASK 32-33-15-400-801-A

EFFECTIVITY: ALL

3. LANDING-GEAR ACTUATION-SYSTEM HYDRAULIC ACCUMULATOR - INSTALLATION

A. General

- (1) This procedure gives the instructions to install the hydraulic accumulator of the landing gear actuation system.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
AMM TASK 12-13-06-600-801-A/300	LANDING GEAR AND MAIN DOOR ACCUMULATOR - CHARGE
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 29-00-00	HYDRAULIC POWER

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
114	114CR	Nose hydraulic compartment

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Torque wrench	To torque the fittings and clamps	
Commercially available	1 1/2-inch Open-End Wrench	To hold the hydraulic accumulator	

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 Goggles, Resistant to Phosphate Ester-Base Fluid	Protection for the eyes	1
Commercially available	Brush	To apply the leak detector fluid	1

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MIL-L-25567 or equivalent	LEAK TEC 160X leakage detector	AR

G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
O-ring	IPC 29-00-00	2

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Nose hydraulic compartment

I. Preparation (Figure 401)

SUBTASK 841-003-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) Lubricate new O-rings (7) and (8) and install them.

CAUTION: TO APPLY THE TORQUE TO THE FITTING (6), HOLD THE HYDRAULIC ACCUMULATOR (1) BY THE NEAREST DRIVE POINT WITH THE AID OF AN 1 1/2-INCH OPEN-END WRENCH. THIS WILL PREVENT THE TWIST OF THE HYDRAULIC ACCUMULATOR, WHICH CAN CAUSE DAMAGE TO IT. REFER TO FIGURE 402.

CAUTION: MAKE SURE THAT YOU APPLY THE CORRECT TORQUE ON THE FITTING. AN OVERTORQUE DURING THE ACCUMULATOR INSTALATION COULD CAUSE A DAMAGE TO THE INTERNAL ACCUMULATOR THAT WILL HAVE A LEAKAGE AS RESULT.

(2) Install fitting (6) and tighten it with a torque of 62.1 - 67.8 N.m (550 - 600 lb.in).

CAUTION: TO APPLY THE TORQUE TO THE FITTING (9), HOLD THE HYDRAULIC ACCUMULATOR (1) BY THE NEAREST DRIVE POINT WITH THE AID OF AN 1 1/2-INCH OPEN-END WRENCH. THIS WILL PREVENT THE TWIST OF THE HYDRAULIC ACCUMULATOR, WHICH CAN CAUSE DAMAGE TO IT. REFER TO FIGURE 402.

CAUTION: MAKE SURE THAT YOU APPLY THE CORRECT TORQUE ON THE FITTING. AN OVERTORQUE DURING THE ACCUMULATOR INSTALATION COULD CAUSE A DAMAGE TO THE INTERNAL ACCUMULATOR THAT WILL HAVE A LEAKAGE AS RESULT.

(3) Install fitting (9) and tighten it with a torque of 14.1 - 15.3 N.m (125 - 135 lb.in).

J. Installation (Figure 401)

SUBTASK 420-002-A

(1) Put the hydraulic accumulator (1) in its installation position in the clamps (3) and (4).

- (2) Connect the hydraulic tubes (2) and (5) and torque the nuts as written in Figure 401.

NOTE: To apply the torque to the nut of the hydraulic tube, hold the assembly by the nearest fitting with the aid of an open-end wrench. Refer to Figure 401.

CAUTION: MAKE SURE THAT YOU APPLY THE CORRECT TORQUE ON THE CLAMPS. AN OVERTORQUE DURING THE ACCUMULATOR INSTALLATION COULD CAUSE A DAMAGE TO THE INTERNAL ACCUMULATOR THAT WILL HAVE A LEAKAGE AS RESULT.

- (3) Tighten the clamps (3) and (4) to a torque of 4.5 N.m (40 lb.in).

K. Follow-on (Figure 403)

SUBTASK 842-002-A

- (1) Charge the nitrogen chamber of the hydraulic accumulator ([AMM TASK 12-13-06-600-801-A/300](#)).
- (2) Use a brush to apply the leak detection fluid to the hydraulic-accumulator upper fitting and examine it for gas leakage. Refer to (Figure 403).
- (3) On the circuit breaker panel, close the ELEC PUMP 1 circuit breaker and remove the DO-NOT-CLOSE tag from it.
- (4) Do the bleed of air from the hydraulic system 1 lines ([AMM TASK 29-10-00-860-803-A/200](#)).
- (5) Do a check on the hydraulic accumulator assembly for oil leakage.
- (6) Do an operational check of landing gear system ([AMM TASK 32-30-00-700-801-A/500](#)).
- (7) Close access door 114CR of the nose hydraulic compartment (AMM MPP 06-41-01/100).

