NOSE-LANDING-GEAR LEG - SERVICING

EFFECTIVITY: ALL

1. General

   A. This section gives the procedure to fill and charge the NLG shock absorber.

   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*
32-20-01-600-801-A ♦	NLG SHOCK ABSORBER - SERVICING	ALL
32-20-01-600-802-A	NLG SHOCK ABSORBER - SERVICING (CHARGING)	ALL

TASK 32-20-01-600-801-A
EFFECTIVITY: ALL

2. NLG SHOCK ABSORBER - SERVICING

A. General

(1) On the servicing chart, the piston height "H" is given in inches and the pressure is given in psi.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 29-10-00-860-802-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
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
SB 145-32-0036	-
SB 145-32-0111	-

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Hand pump (2000 psi) equipped with reservoir (see specification of hydraulic fluid in paragraph F)	To fill the shock absorber	
GSE 024	Pressure regulator valve	To charge the shock absorber	
Commercially available	Nitrogen cylinder with 1000 psi (see specification of nitrogen in paragraph F)	To charge the shock absorber	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Fluid container	To collect the hydraulic fluid drained	1
Commercially available	Rubber gloves	Skin protection	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-PRF-5606	Hydraulic fluid	AR
BB-N-411, Type I, Class I, Grade B	Nitrogen	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	NLG
1	Helps the other technician	NLG

I. Preparation

SUBTASK 841-002-A

(1) Aircraft on the ground.

(2) For aircraft PRE-MOD SB 145-32-0036, make sure that the pressure in hydraulic system No. 1 is fully released (AMM TASK 29-10-00-860-802-A/200).

(3) For aircraft POST-MOD SB 145-32-0036, install the safety pin of the NLG doors solenoid valve (AMM TASK 32-00-02-910-801-A/200).

(4) Make sure that the landing gear safety pin is installed on the NLG (AMM TASK 32-00-01-910-801-A/200).

(5) Make sure that the NLG steering is in the neutral (0°) steering angle position.

J. Service NLG Shock Absorber (FILLING) (Figure 301)

SUBTASK 610-002-A

CAUTION: BEFORE YOU DO THE NEXT STEP, REMOVE ALL EQUIPMENT FROM BELOW THE AIRCRAFT AND PROTECT THE TIRES AGAINST HYDRAULIC FLUID CONTAMINATION.

(1) Slowly open the charging valve to release the pressure from the NLG shock absorber and wait until the shock absorber, by the action of the aircraft weight, is at its complete retracted position.

(2) Connect a hose to the filling valve and have a fluid container at the free end of the hose to collect the drained hydraulic fluid.

(3) Open the filling valve.

(4) Connect the hose of the nitrogen cylinder to the charging valve.

(5) Adjust the nitrogen pressure-regulator valve to zero (0) psi.

(6) Open the nitrogen cylinder valve.

(7) Slowly open the pressure-regulator valve, with the charging valve open, and increase the nitrogen pressure to a maximum of 225 psi (1.5 MPa).

NOTE: The nitrogen pressure pushes the shock-absorber separator piston to its upper position. Most of the waste hydraulic fluid will be removed from the shock absorber and drained in the fluid container.

(8) When no more hydraulic fluid flows out, close the charging valve and set the nitrogen pressure regulator to zero (0) psi.

(9) Disconnect the hose from the charging valve.

(10) Slowly open the charging valve to release the pressure from the NLG shock absorber and keep it fully opened.

(11) Disconnect the hose from the filling valve.

(12) Connect the hand pump to the filling valve of the shock absorber.

(13) Operate the hand pump slowly to fill the shock absorber with new MIL-PRF-5606 hydraulic fluid, until the dimension "X" (DET. A, Figure 301) is 5 to 6 inches.

(14) Close the filling valve.

(15) Disconnect the hand pump from the filling valve.

(16) Connect a hose to the filling valve and open the valve to remove the excess hydraulic fluid from the shock absorber. Collect it in a fluid container and wait until the shock absorber, by the action of the aircraft weight, is at its fully retracted position.

(17) Do the operations again from step (12) to step (16), until all air bubbles mixed with the hydraulic fluid are removed.

(18) If aluminum residues are found in the hydraulic fluid, do steps (12) through (16) until there are no aluminum residues in the hydraulic fluid.

(19) For aircraft PRE-MOD. SB 145-32-0111, make sure that, after the steps above are completed, the nose landing gear is fully compressed (shock absorber at the fully retracted position). This is to make sure that the oil quantity in the shock absorber is correct.

(20) For aircraft POST-MOD. SB 145-32-0111, operate the hand pump slowly to fill the shock absorber with new MIL-PRF-5606 hydraulic fluid, until the dimension "X" (DET. A, Figure 301) is 133 mm (5.24 in).

(21) Close the filling valve and disconnect the hose from the filling valve.

K. Service NLG Shock Absorber (CHARGING) (Figure 302) (Figure 303)

SUBTASK 610-003-A

(1) Connect the hose of the nitrogen cylinder to the charging valve.

(2) Adjust the pressure-regulator valve to zero (0) psi.

(3) Open the nitrogen cylinder valve.

(4) With the charging valve open, increase the pressure of the shock-absorber opening pressure-regulator valve until the shock-absorber piston starts its movement.

(5) Wait some seconds until the pressure value is stable, then read and write the value shown on the pressure gauge.

(6) Close the charging valve.

(7) On the servicing chart, identify the curve that is nearest to the ambient temperature. For aircraft PRE-MOD. SB 145-32-0111, refer to Figure 302. For aircraft POST-MOD. SB 145-32-0111, refer to Figure 303.

(8) With the pressure value found in step (5) and the curve identified in step (7), read and write the piston height value ("H") applicable to these data.

(9) Open the charging valve and continue to fill with nitrogen until the shock absorber piston height is at the value written in step (8). Close the charging valve.

(10) Wait 3 (three) minutes for stabilization and then see that the piston height is equal to the value written in step (8). If necessary, correct.

(11) Close the charging valve.

(12) Close the nitrogen cylinder valve.

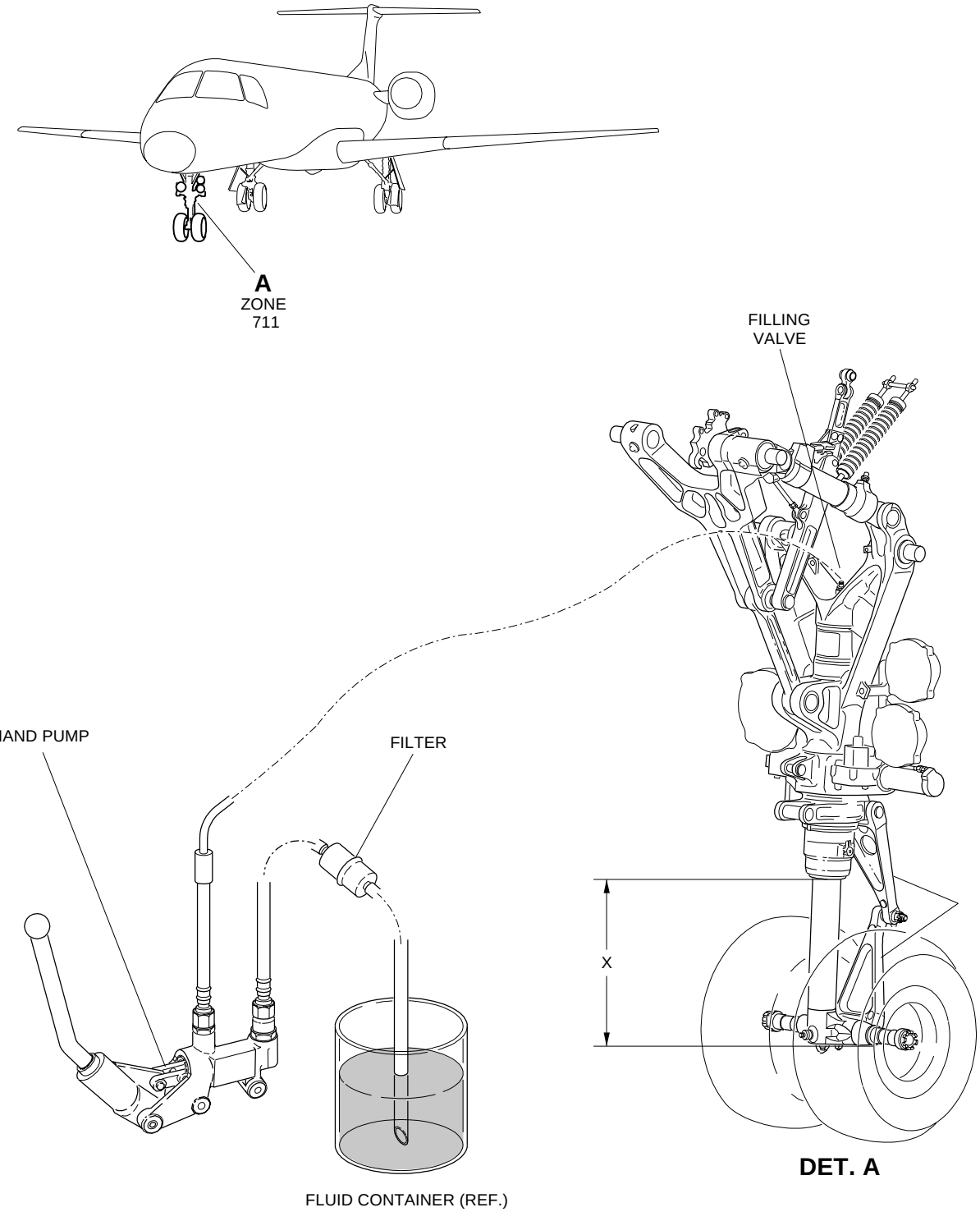
(13) Remove the hose from the charging valve.

(14) Inspect the charging valve for leakage.

(15) For aircraft POST-MOD SB 145-32-0036, remove safety pin of the NLG doors solenoid valve (AMM TASK 32-00-02-910-801-A/200).

EFFECTIVITY: ALL

NLG Shock Absorber - Filling
Figure 301



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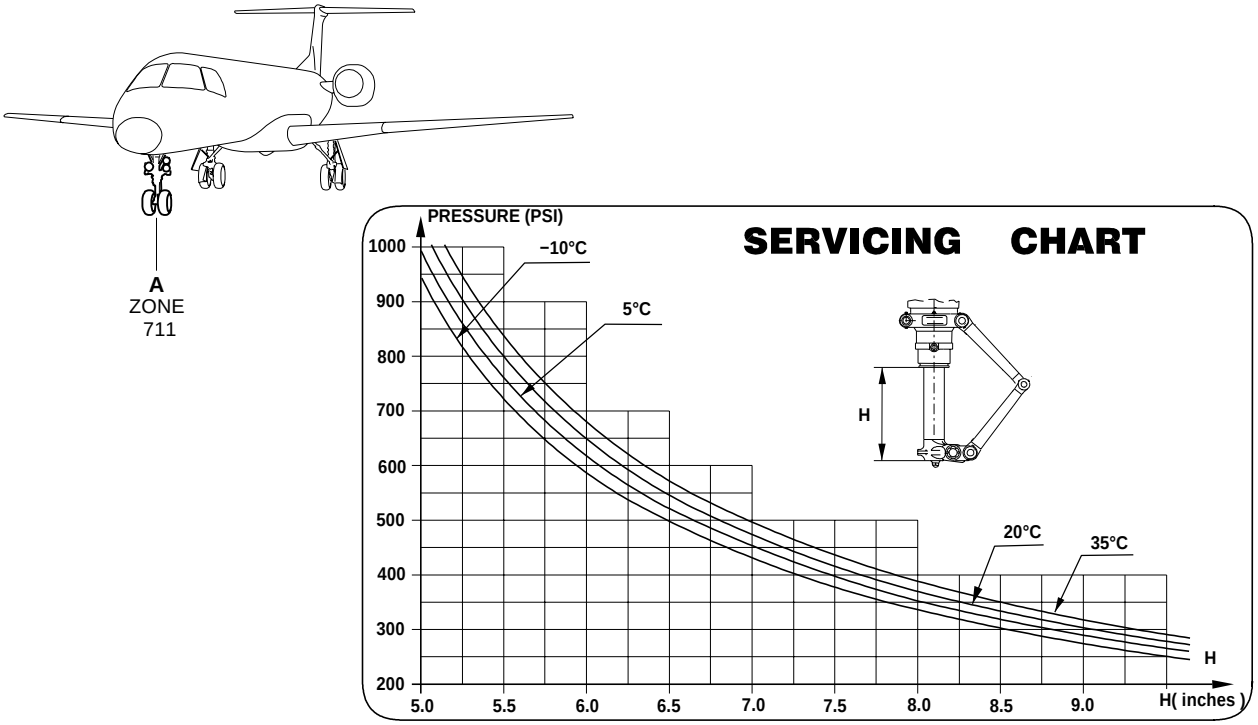
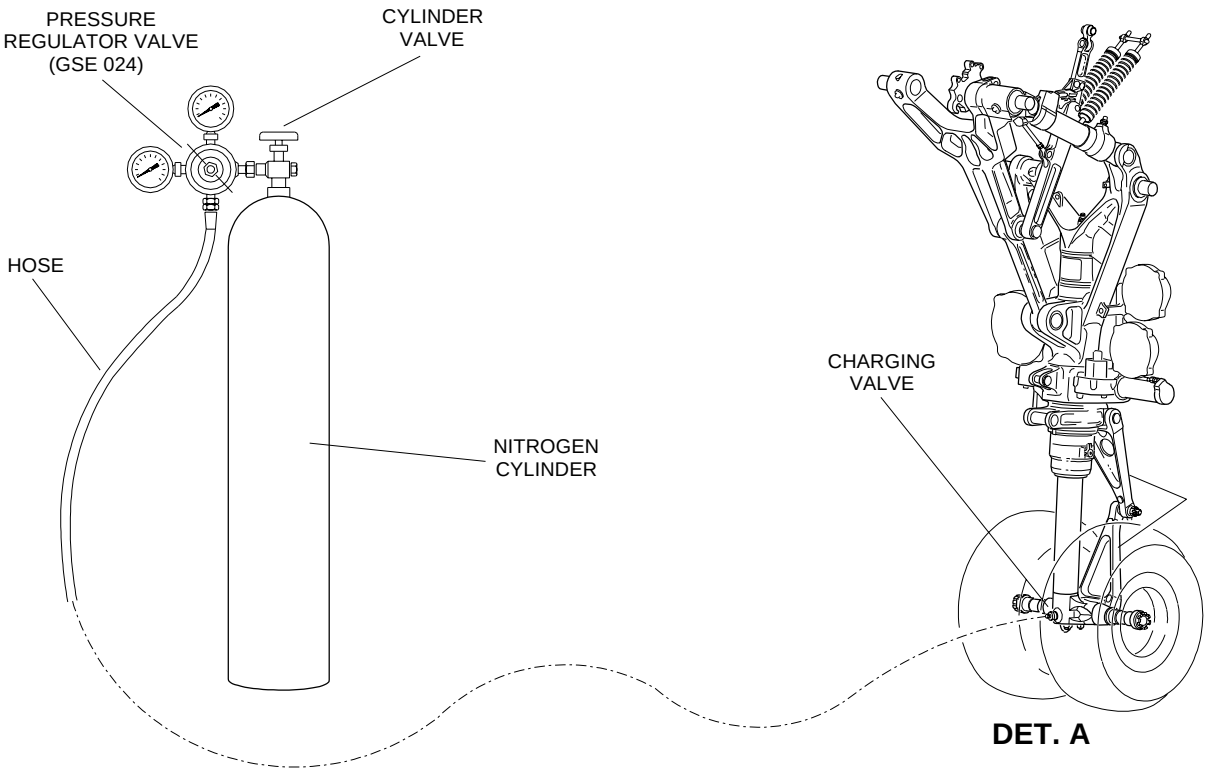
EFFECTIVITY: PRE-MOD. S.B. 145-32-0111
NLG Shock Absorber - Charging
Figure 302





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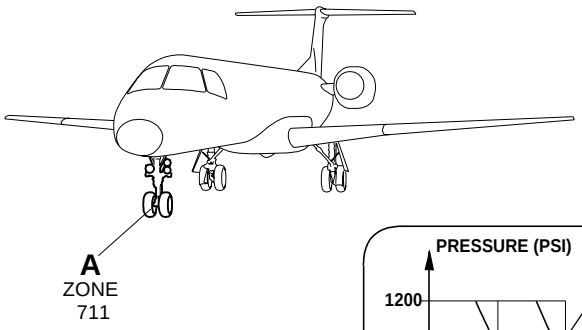
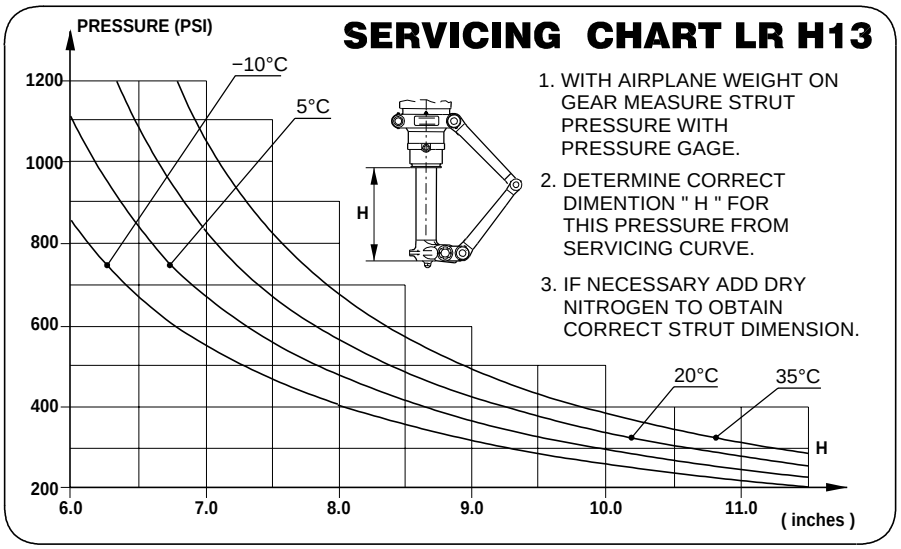
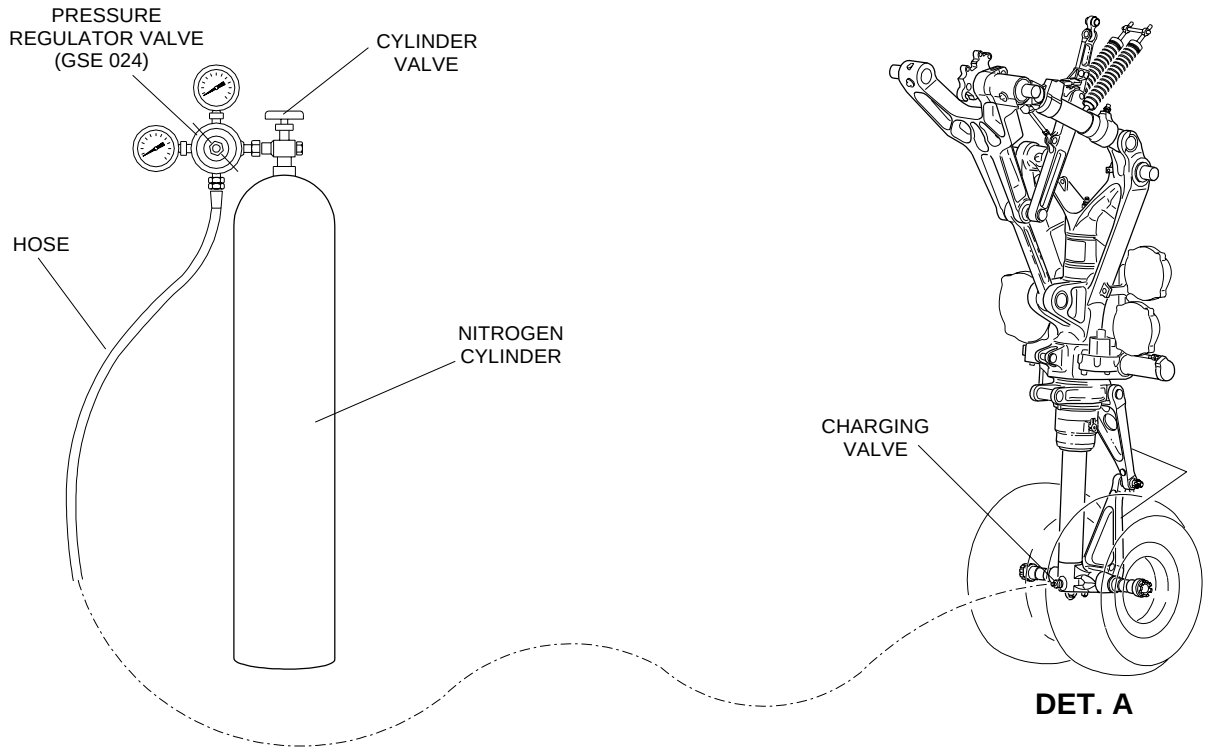
EFFECTIVITY: POST-MOD. S.B. 145-32-0111
NLG Shock Absorber - Charging
Figure 303







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TASK 32-20-01-600-802-A
EFFECTIVITY: ALL

3. NLG SHOCK ABSORBER - SERVICING (CHARGING)

A. General

(1) Do this procedure during the check of AHRS attitude indication.

(2) This procedure is done with the aircraft on the ground.

(3) On the servicing chart, the piston height "H" is given in inches and the pressure is given in psi.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 29-10-00-860-802-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
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
SB 145-32-0036	-
SB 145-32-0111	-

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 024	Pressure regulator valve	To charge the shock absorber	
Commercially available	Nitrogen cylinder with 1000 psi (see specification of nitrogen in paragraph F)	To charge the shock absorber	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
BB-N-411, Type I, Class I, Grade B	Nitrogen	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	NLG

(Continued)

QTY	FUNCTION	PLACE
1	Helps the other technician	NLG

I. Preparation

SUBTASK 841-003-A

(1) Aircraft on the ground.

(2) For aircraft PRE-MOD SB 145-32-0036, make sure that the pressure in hydraulic system No. 1 is fully released (AMM TASK 29-10-00-860-802-A/200).

(3) For aircraft POST-MOD SB 145-32-0036, install the safety pin of the NLG doors solenoid valve (AMM TASK 32-00-02-910-801-A/200).

(4) Make sure that the landing gear safety pin is installed on the NLG (AMM TASK 32-00-01-910-801-A/200).

(5) Make sure that the NLG steering is in the neutral (0°) steering angle position.

J. Service NLG Shock Absorber (CHARGING) (Figure 302) (Figure 303)

SUBTASK 610-004-A

CAUTION: BEFORE YOU DO THE NEXT STEP, REMOVE ALL EQUIPMENT FROM BELOW THE AIRCRAFT.

(1) Slowly open the charging valve to release the pressure from the NLG shock absorber and wait until the shock absorber, by the action of the aircraft weight, is at its complete retracted position.

(2) To charge the NLG Shock Absorber connect the hose of the nitrogen cylinder to the charging valve.

(3) Adjust the pressure-regulator valve to zero (0) psi.

(4) Open the nitrogen cylinder valve.

(5) With the charging valve open, increase the pressure of the shock-absorber opening pressure-regulator valve until the shock-absorber piston starts its movement.

(6) Wait some seconds until the pressure value is stable, then read and write the value shown on the pressure gauge.

(7) Close the charging valve.

(8) On the servicing chart, identify the curve that is nearest to the ambient temperature. For aircraft PRE-MOD. SB 145-32-0111, refer to Figure 302. For aircraft POST-MOD. SB 145-32-0111, refer to Figure 303.

(9) With the pressure value found in step (5) and the curve identified in step (7), read and write the piston height value ("H") applicable to these data.

(10) Open the charging valve and continue to fill with nitrogen until the shock absorber piston height is at the value written in step (8). Close the charging valve.

(11) Wait 3 (three) minutes for stabilization and then see that the piston height is equal to the value written in step (8). If necessary, correct.

(12) Close the charging valve.

(13) Close the nitrogen cylinder valve.

(14) Remove the hose from the charging valve.

(15) Inspect the charging valve for leakage.

(16) For aircraft POST-MOD SB 145-32-0036, remove safety pin of the NLG doors solenoid valve (AMM TASK 32-00-02-910-801-A/200).