

## HYDRAULIC HOSES - REPAIR

*EFFECTIVITY: ALL*

1. General

- A. This section gives the necessary instructions to repair hydraulic hoses.
- 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).

<i>TASK NUMBER</i>	<i>DESCRIPTION</i>	<i>EFFECTIVITY</i>
20-10-04-300-801-A	HYDRAULIC HOSE - REPAIR	ALL

TASK 20-10-04-300-801-A

EFFECTIVITY: ALL

## 2. HYDRAULIC HOSE - REPAIR

### A. General

- (1) This procedure gives the instructions to repair tubes.
- (2) Do a check on the wear spots of the Aeroquip hose.
  - (a) A repair sleeve is not necessary if the silicone cover was gouged, nicked, abraded, or cut to a depth of 0.76 mm (0.030 in) or less.
  - (b) Wear spots where the wire braid is exposed must be examined for wire damage.
 

NOTE: Hose with damaged reinforcement wire must be replaced.
- (3) Do a check on the wear spots of the Parker hose.
  - (a) Conditions in which it is necessary to replace the hose:
    1. Firesleeve braid is fluid wetted.
    2. Tear or void (air bubble) is deeper than 0.03 in by 0.25 in x 0.25 in.
    3. Wear spots have the wire braid exposed.
    4. Length of a lateral cut is more than 3 in.
    5. Length of a cut perpendicular to the length of the hose is more than a quarter of the circumference.
    6. Gouges in the damaged area are more than 1 in by 1 in and 0.03 deep.

### B. References

REFERENCE	DESIGNATION
<a href="#">AMM TASK 12-13-01-600-801-A/300</a>	HYDRAULIC SYSTEM RESERVOIR - FLUID LEVEL CHECK
<a href="#">AMM TASK 12-13-01-600-802-A/300</a>	HYDRAULIC SYSTEM RESERVOIR - REPLENISHMENT
<a href="#">AMM TASK 29-10-00-860-801-A/200</a>	HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS
<a href="#">AMM TASK 29-10-00-860-803-A/200</a>	HYDRAULIC SYSTEM - BLEED OF AIR
<a href="#">AMM TASK 32-00-01-910-801-A/200</a>	LG SAFETY PIN - INSTALLATION AND REMOVAL

### C. Zones and Accesses

Not Applicable

### D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Sharp knife or razor blade	To cut the hose	

**E. Auxiliary Items**

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Cloth, lint-free	Cleaning equipment	AR
Commercially available	Paper towel	Cleaning equipment	AR
Commercially available	Lockwire	To safety the repair sleeve	AR

**F. Consumable Materials**

SPECIFICATION (BRAND)	DESCRIPTION	QTY
Commercially available	Acetone	AR
RTV 106	Silicone Sealant	AR
Commercially available	Isopropyl Alcohol	AR
MEP 13-073	Cleaning solvent Rhodiasolve E-23	AR

**G. Expandable Parts**

Not Applicable

**H. Persons Recommended**

QTY	FUNCTION	PLACE
1	Does the task	On damaged hose

**I. Preparation**

**SUBTASK 841-002-A**

- (1) Make sure that the aircraft is safe for maintenance.
- (2) On the circuit breaker panel, open the ELEC PUMP 1 and (or) ELEC PUMP 2 circuit breaker(s) and attach a DO-NOT-CLOSE tag to it (them).
- (3) Make sure that the pressure in the related system is fully released.
- (4) When you do the removal procedure near the landing gear, make sure that the landing-gear safety pins are installed ( [AMM TASK 32-00-01-910-801-A/200](#)).

**CAUTION:** DO NOT LET LINES OR FITTINGS STAY WITHOUT CAPS. DIRT CAN CAUSE SYSTEM CONTAMINATION, DAMAGE TO COMPONENTS, AND LEAKAGE.

- (5) Install protection caps to the system fittings.
- (6) With a cloth and cleaning solvent (Rhodiasolve E-23), clean the leaked fluid.

**J. Repair of Hydraulic Hose**

**SUBTASK 360-002-A**

- (1) To repair the Aeroquip integral silicone-covered hose, do as follows:

NOTE: A repair sleeve is not necessary if the silicone cover was gouged, nicked, abraded, or cut to a depth of 0.76 mm (0.030 in) or less.

- (a) Remove the hose to be repaired as necessary.
  - (b) Do the repair ([Figure 801](#)).
  - (c) Install the hose as necessary.
- (2) To repair the Parker integral-silicone hose, do as follows:
- (a) Repair to a cut cover:
    - 1 Clean the area of the cut with acetone to remove dirt, oil, and foreign matter.
    - 2 Use a cloth to remove the acetone.
    - 3 Fill the cut with RTV 106 until the RTV is flush with the silicone-hose outer diameter.
    - 4 Let the RTV cure for minimum of 24 hours.
    - 5 Bend the assembly and do a check for correct bonding between the RTV and the silicone hose cover. If the sealant comes loose from the silicone cover, remove the sealant and do the repair again.
  - (b) Repair of gouges:
    - 1 Clean the area of the cut with acetone to remove dirt, oil, and foreign matter.
    - 2 Use a cloth to remove the acetone.
    - 3 Cover with RTV 106 all the area from which the silicone cover was torn or gouged away.

NOTE: The RTV layer must be flush with or slightly higher than the outer surface of the undamaged silicone cover.
    - 4 Let the RTV cure for a minimum of 24 hours.
    - 5 Bend the assembly and do a check for correct bonding between the RTV and the silicone hose cover. If the sealant comes loose from the silicone cover, remove the sealant and do the repair again.

K. Follow-on

*SUBTASK 842-002-A*

- (1) Do a check on the fluid level in the hydraulic system reservoir ( [AMM TASK 12-13-01-600-801-A/300](#)). If necessary, fill it ( [AMM TASK 12-13-01-600-802-A/300](#)).
- (2) On the circuit breaker panel, close the ELEC PUMP 1 and (or) ELEC PUMP 2 circuit breaker(s) and remove the DO-NOT-CLOSE tag from it (them).

- (3) Pressurize the related system ( [AMM TASK 29-10-00-860-801-A/200](#)) and do a check for leaks at the hydraulic line which you worked on.

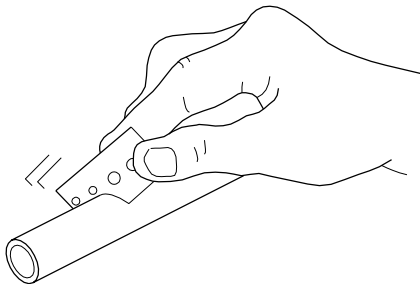
NOTE: Most of the hydraulic lines can be pressurized on ground by pressurizing the related hydraulic system (1 or 2). Guidance in the AMM Part I and/or SSM can be used for more determination on the pressurization requirements for the related line. All the safety and preparation procedures must be followed as given in the AMM before you apply the pressurization procedures.

- (4) If you find leaks, repair them and do a check on the fluid level in the hydraulic system again.
- (5) Do the bleed of air from the related hydraulic system ( [AMM TASK 29-10-00-860-803-A/200](#)).
- (6) Remove all tools, materials, and equipment from the work area.
- (7) Make sure the area is clean.
- (8) Close the applicable access doors/panels.

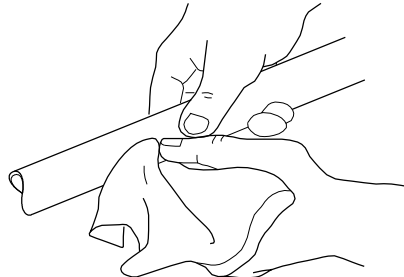
**EFFECTIVITY: ALL**

Repair to Aeroquip Silicone-Covered Hose Abrasions with AE272 Flexwrap

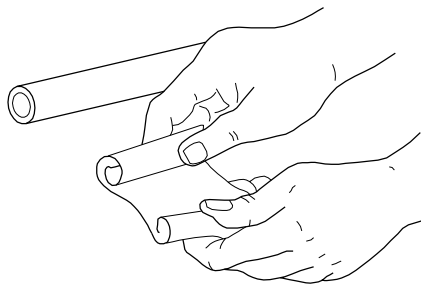
Figure 801 - Sheet 1



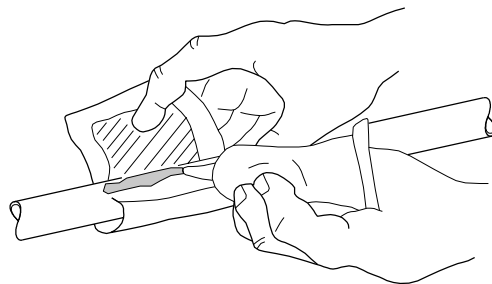
1. FIND THE CORRECT SLEEVE TO BE USED (REFER TO TABLE 1). FOR THE CORRECT WIDTH, MEASURE SLEEVE TO ITS EXTEND 25.5 mm (1 in.) MORE FROM ABRASION ON EACH END. FOR THE CORRECT LENGTH, ROLL OUT ENOUGH FLEXWRAP FIRESLEEVE AND WIND AROUND THE HOSE TWO TIMES. CUT TO SIZE WITH A RAZOR BLADE OR SHARP KNIFE.



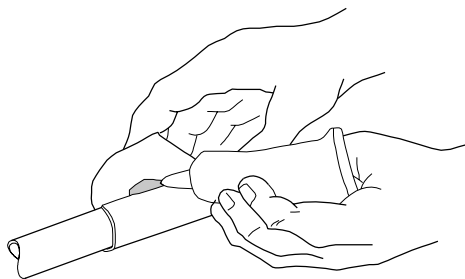
2. CLEAN DAMAGED AREA WITH A CLOTH MOISTENED WITH ISOPROPYL ALCOHOL. PERMIT IT TO DRY FOR 15 MINUTES. FILL THE DAMAGED AREA WITH RTV 106 SILICONE UP TO THE ORIGINAL HOSE DIAMETER.



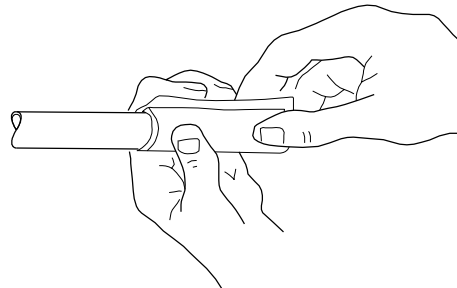
3. TURN THE REPAIR SLEEVE INSIDE OUT PRIOR TO WRAPPING IT AROUND THE HOSE. PUT IT ON THE HOSE, AS SHOWN IN STEP 4.



4. APPLY A LENGTHWISE BEAD OF SILICONE ALONG THE AFFECTED SURFACE OF THE HOSE TO AN EXTENT CORRESPONDING TO THE REPAIR SLEEVE WIDTH AND BOND THE TOP EDGE OF THE SLEEVING. THEN, APPLY SILICONE OVER ALL THE FACING SURFACE OF THE SLEEVE, LEAVING, HOWEVER, DRY MARGINS ON BOTH SIDES AND AT THE END OF THE SLEEVE TO PREVENT EXCESS MATERIAL FROM BEING EXTRUDED OFF WHEN THE WRAPPING IS TIGHTENED UP.



5. WRAP REPAIR SLEEVE AROUND THE HOSE AND APPLY A BEAD OF SILICONE UNDER THE OUTER EDGE, THE FULL LENGTH OF THE SLEEVE.



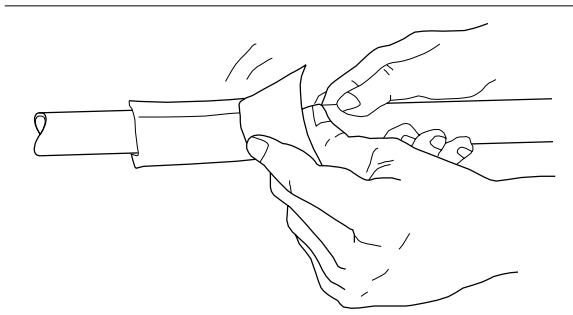
6. PRESS FIRMLY ALONG THE REPAIR SLEEVE EDGE.

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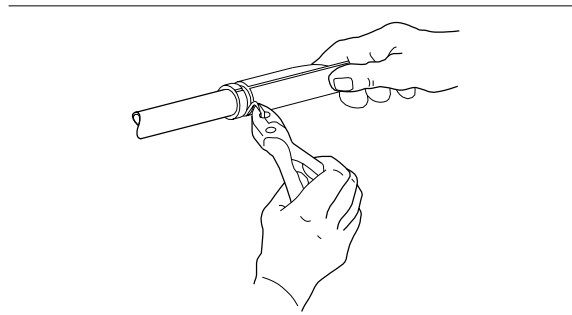
**EFFECTIVITY: ALL**

Repair to Aeroquip Silicone-Covered Hose Abrasions with AE272 Flexwrap

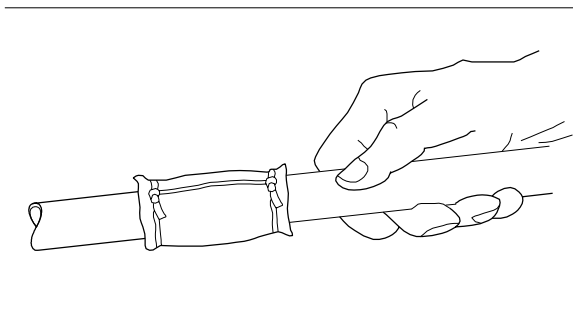
Figure 801 - Sheet 2



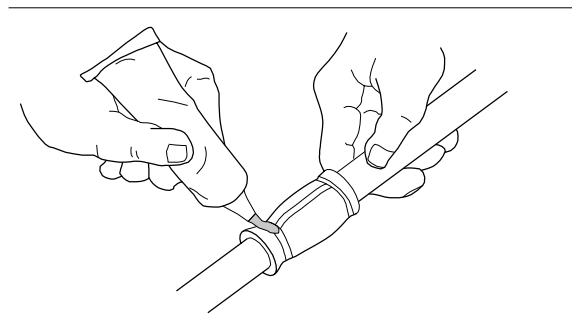
7. WIPE OFF EXCESS SILICONE WITH A CLOTH OR PAPER TOWEL.



8. APPLY ONE WRAP WITH A MINIMUM OF 0.79 mm (0.031 in.) OF A STAINLESS STEEL SAFETY WIRE AT APPROXIMATELY 12.7 mm (0.5 in) FROM EACH END OF THE REPAIR SLEEVE. DRAW WIRE TIGHT FOR FOUR OR FIVE TWISTS.

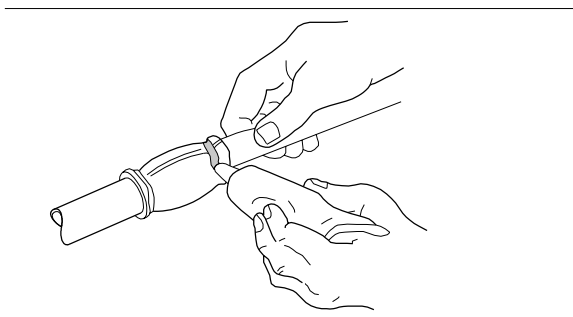


9. WRAP THE WIRE ENDS BACK AROUND THE REPAIR SLEEVE IN THE OPPOSITE DIRECTION AND APPLY 4 OR 5 TWISTS. CUT OFF ENDS AND BEND TOWARD HOSE AS SHOWN.



10. SEAL THE REPAIR SLEEVE ENDS WITH SILICONE TO PREVENT THEM FROM WICKING.

NOTE: REPAIR SLEEVES WITH LENGTHS 152.4 mm (6 in.) OR LONGER SHOULD BE SECURED WITH SAFETY WIRE EVERY 76.2 mm (3 in.)



11. SILICONE MAY ALSO BE PUT ON THE TWISTED WIRE ENDS. TO PREVENT THEM FROM SNAGGING. ALLOW A 4-HOUR CURING TIME BEFORE HANDLING.

**TABLE 1**

AE272 FLEXWRAP FIRESLEEVE	HOSE AND SIZE	
	AE446	AE466
-4 SIZE	-4 SIZE	-4 SIZE
-6 SIZE	-6 SIZE	-6 SIZE
-9 SIZE	-8, -12 SIZE	-8, -12 SIZE
-11 SIZE		-16 SIZE

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