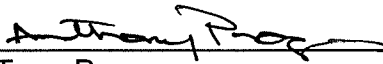





**SERVICE LETTER**  
**FOR THE COMPOSITE REPAIR**  
**ON THE MODEL 301 TANK STRUCTURE**  
**FOR ACTUATOR MOUNT ATTACHMENT HOLES**

Document No.: SL2008-008  
Date: November 11, 2008  
Used On: Simplex Model 301 Installed on the  
Eurocopter Model SA-365N1, AS-365N2 and  
AS-365N3 per Simplex STC No. SH8801SW-D

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Manufacturing Manager



**Log of Revisions**

<u>Rev.</u>	<u>Description of Revision</u>	<u>Date</u>	<u>Approved</u>
I/R	Initial Release	November 11, 2008	SJF



SYSTEM MODELS AFFECTED:

Model 301            Fire Attack System

PART NUMBERS AFFECTED:

301-000000-000

SERIAL NUMBER EFFECTIVITY:

<u>S/N</u>	<u>MODEL NUMBER</u>	<u>DESCRIPTION</u>
N/A	301-000000-000	Model 301 Fire Attack System

FAA APPROVAL:

N/A  
No certification basis of modification

MANPOWER:

Eight (8) MHRS (Estimated)

COMPLIANCE:

N/A

MATERIALS:

<u>QTY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
A/R	789-7775-25	Vinyl Ester Resin (Hexion)
A/R	HI-POINT 90	Methyl Ethyl Ketone Peroxide (Crompton Corp)
8	751010 (Simplex P/N)	Carbon Fiber (Ø6.0 inch patch, Hexcel 282)
A/R	751037 (Simplex P/N)	732 RTV (Dow Corning)



SPECIAL TOOLS:

80 grit sandpaper  
Acetone  
Die-grinder and burrs  
Bristle roller  
Squeegee

WEIGHT AND BALANCE:

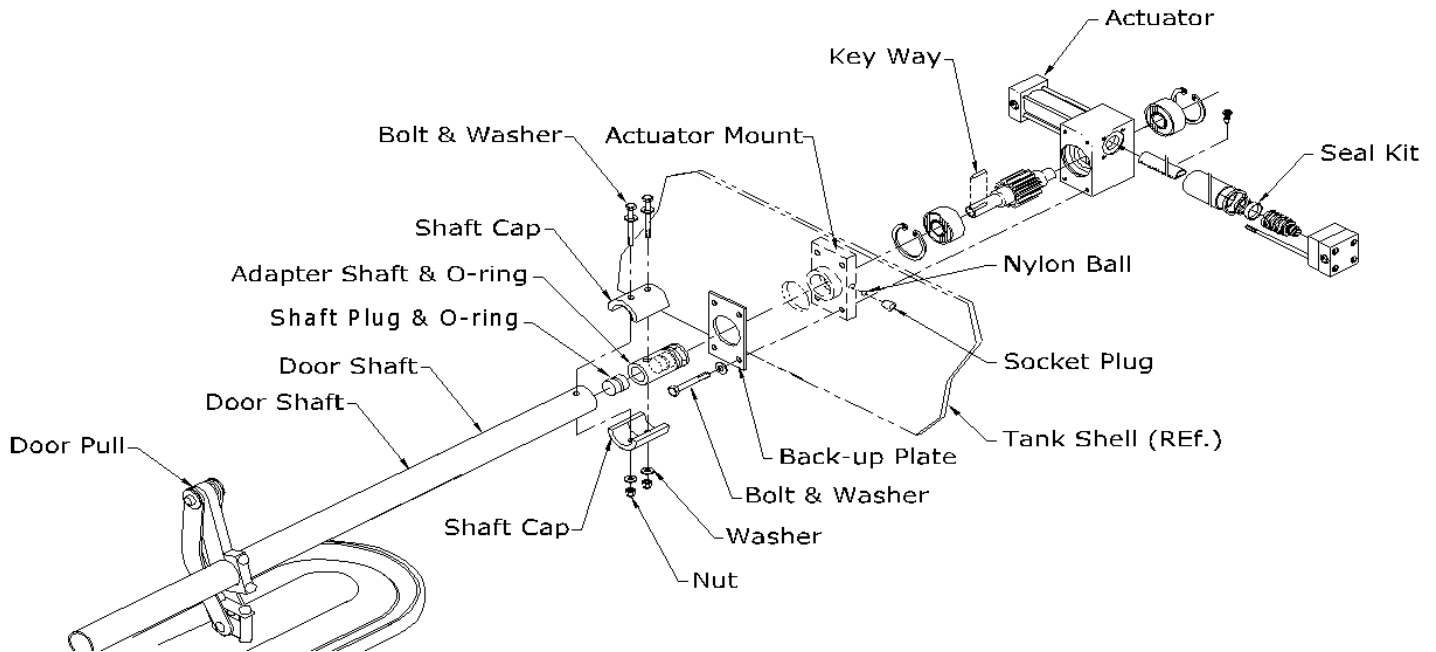
None

ELECTRICAL LOAD DATA:

None

PUBLICATIONS AFFECTED:

None

**ACCOMPLISHMENT INSTRUCTIONS:****FIGURE 1.1 - Door Actuator and Shaft Assembly***Note:*

The door shaft spans the length of each dispersal door and is supported at each baffle with a bearing ring. The tank outer shell has a ball bearing assembly supporting the end connection of the door hydraulic actuator. The door shaft is secured to the door actuator with a cap, plug, adapter shaft, back-up plate, actuator mount, and nylon ball bearings.

1. Disconnect and remove the hydraulic actuator assembly from tank external structure.
2. With a pen, mark the tank with the outline of the existing Actuator Mount while still mounted to the tank structure.

*Note:*

*Marking will be used to define the angle of the new Actuator Mount when installed.*

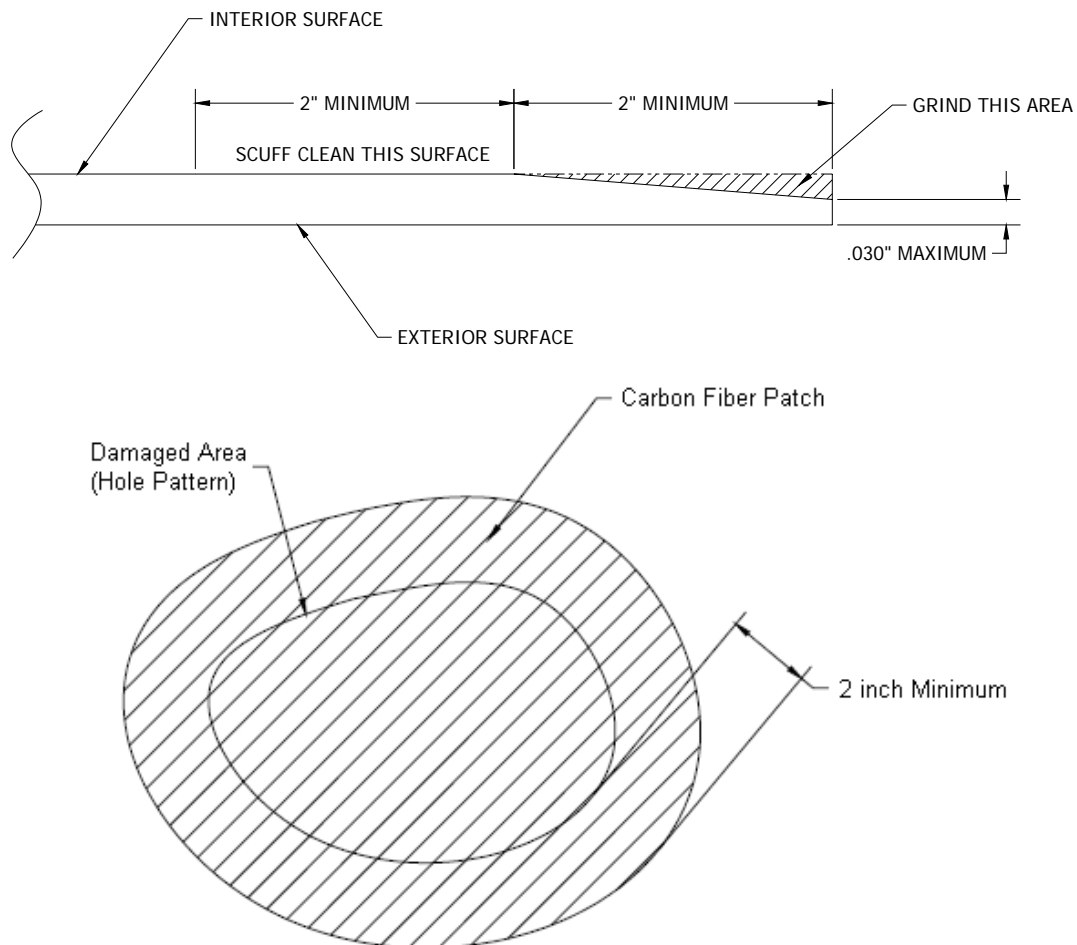
3. Remove the Actuator Mount, Back-up Plate, (2X) Shaft Cap and all attaching hardware (reference Figure 1.1).

*Note:*

*Do not discard hardware.*



4. Prepare inside surface of tank at the actuator hole locations.
  - a. Grind tank on the inside to feather the edge of the skin for an area at least 2 inches per Figure 1.2.
  - b. Using 80 grit sandpaper, thoroughly sand the area around the repair for at least 2 inches beyond the ground feathered edge area.



**FIGURE 1.2 - Preparation of Skin**

- c. Clean the interior surface that has been ground and sanded with acetone at least 3 times, wiping with a clean, oil-free rag. Ensure acetone is completely evaporated prior to application of Carbon Fiber fabric (approximately 5 minutes).



5. Prepare resin/catalyst mixture.

**Mixing for Use:**

- a. Pour an appropriate amount of un-catalyzed Vinyl Ester Resin, P/N 789-7775-25, out in a clean mixing bucket.
- b. Determine, from Table 1.1a or 1.1b below, the appropriate amount of MEKP HI-POINT 90 Catalyst. This is 2% catalyst by volume. Add this amount of catalyst and mix thoroughly.
- c. Pot life of catalyzed mixture is approximately 35 minutes from addition of the catalyst. If mixture begins to stiffen noticeably, discard remainder of catalyzed batch.

**Table 1.1a Addition of Catalyst (US Units)**

Quantity of Resin		Catalyst	
		Min(cc)	Max (cc)
0.3	cup	1.1	1.3
0.5	cup	2.1	2.6
0.8	cup	3.2	3.9
1.0	cup	4.3	5.2
1.5	cup	6.4	7.8
2.0	cup	8.5	10.4
3.0	cup	12.8	15.6
1.0	qt	17.0	20.8
2.0	qt	34.0	41.6
3.0	qt	51.1	62.4
1.0	gal	68.1	83.2

**Table 1.1b Addition of Catalyst (SI Units)**

Quantity of Resin		Catalyst	
		Min(cc)	Max (cc)
0.1	liter	1.8	2.2
0.2	liter	3.6	4.4
0.3	liter	5.4	6.6
0.4	liter	7.2	8.8
0.5	liter	9.0	11.0
0.6	liter	10.8	13.2
0.7	liter	12.6	15.4
0.8	liter	14.4	17.6
0.9	liter	16.2	19.8
1.0	liter	18.0	22.0
1.5	liter	27.0	33.0
2.0	liter	36.0	44.0
2.5	liter	45.0	55.0
3.0	liter	54.0	66.0
3.5	liter	63.0	77.0
4.0	liter	72.0	88.0



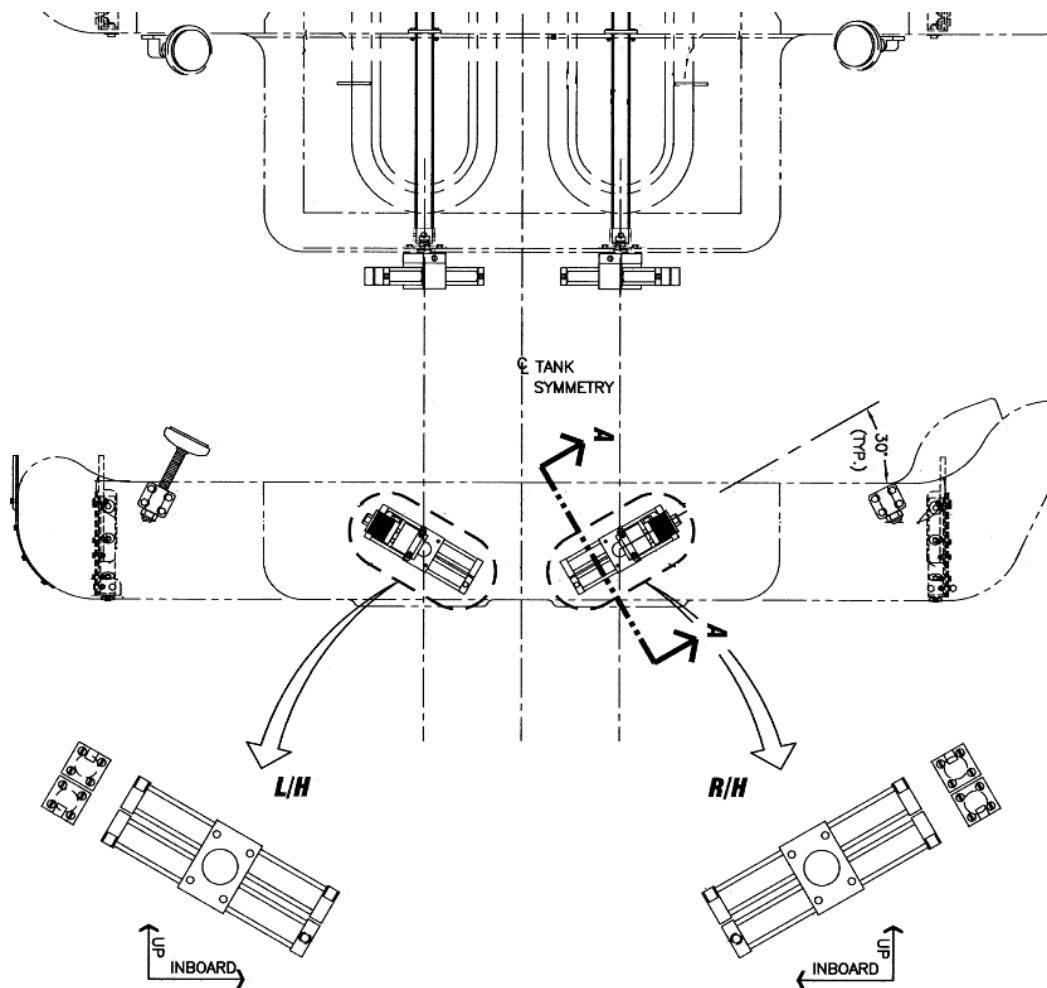
6. Apply resin mixture to Carbon Fiber fabric (four (4) layers for each repair).
  - a. When used with fabrics, total wet-out of all the fabric is required. Air bubbles should be kept to a minimum by rolling with a bristle roller or similar device.
  - b. As much excess resin as possible must be removed from the lay-up by squeegee or similar device.
  - c. Inspect for full wet-out of fabric, excessive presence of air bubbles, and pooling of excess resin

*Note:*

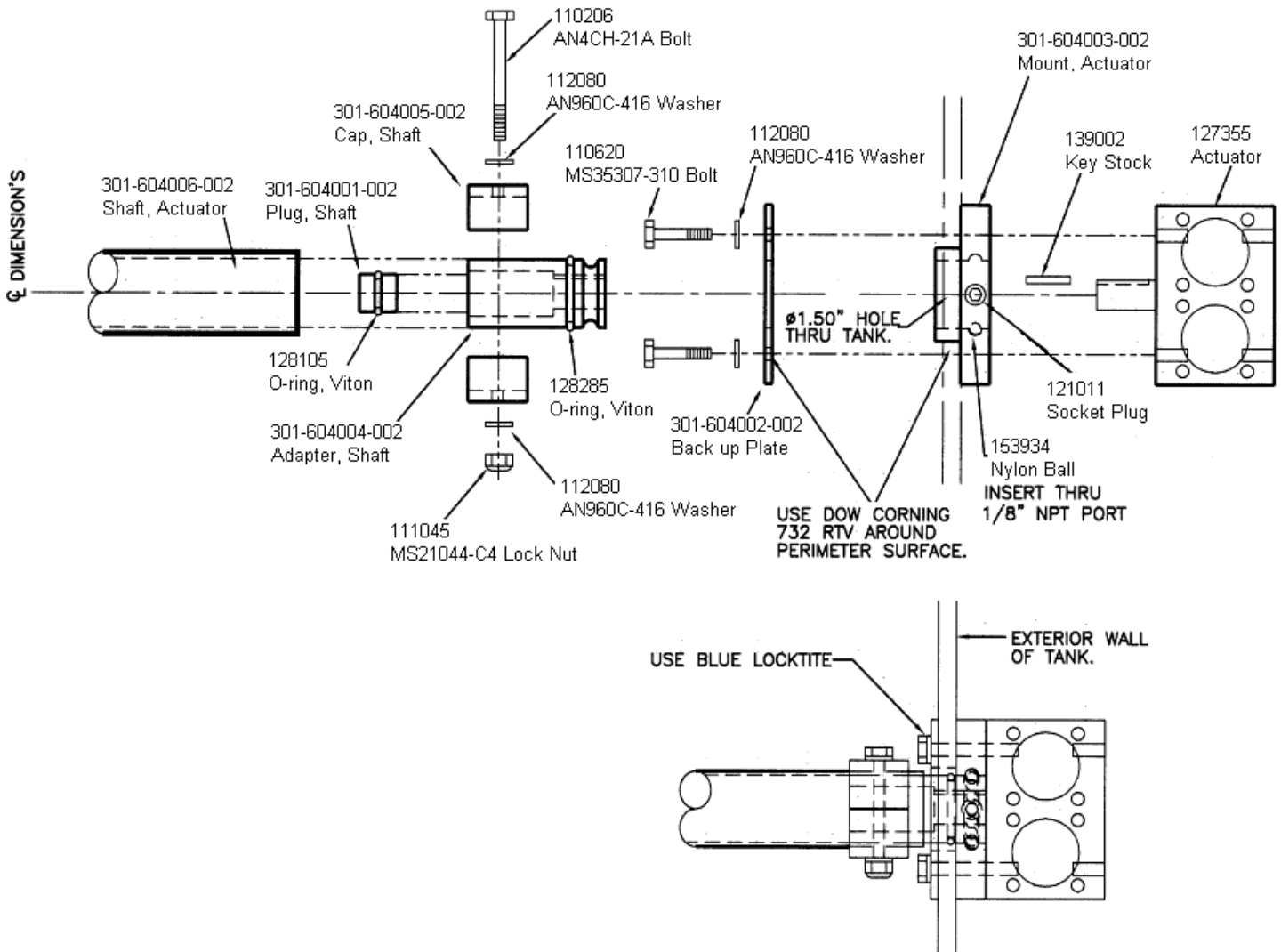
*It is desirable for a complete layup to be made at one time, with no plies being laid up over cured layers.*

7. Apply Carbon Fiber patches over the existing actuator attachment hole pattern. Apply all layers with 0° or 90° orientation in reference to the tank structure.
8. Remove excess resin from fabric prior to hardening with a brush, squeegee or other means.
9. Allow layup to cure for 24 hours.
10. When layup is fully cured, cut out existing Ø1.50 inch hole for Actuator Mount, P/N 301-604003-002.
11. Using Actuator Mount, P/N 301-604003-002, match drill the tank structure 4X Ø0.250 - 0.254 inch to match the holes in the Actuator Mount. **Ensure the mount is at the same angle as the previous actuator mount (approximately 30°).** Location of the Actuator Mount must match the profile marked on the tank structure (reference Step 2).





**FIGURE 1.3 - Door Actuators**



**FIGURE 1.4 - Door Actuator and Shaft Assembly**

12. Reinstall the Actuator Mount, Back-up Plate, (2X) Shaft Cap and all attaching hardware (reference Figure 1.4).
13. Reinstall the hydraulic actuator assembly from tank external structure.

*Note:*

*Install actuator attachment bolts with blue Loctite 242*

14. Check doors for proper operation and sealing. Adjust doors per Model 301 Maintenance Manual.