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## Service Instruction

Service Instruction Number: HF-S-1

Date: September 23, 2015

To: All Owners/ Operators of Helifab Sikorsky S-76 Auxiliary Fuel Tank Installation. (STC SR00763DE)

Subject: Installation of ground straps to assist in obtaining the 1 ohm or less resistance requirement of the installation.

Approval: The engineering aspects of this service instruction are FAA approved.

Compliance Requirements: Optional

### Description:

This service instruction (SI) can be used, if during installation of auxiliary tank, the requirement to achieve 1 ohm or less is not met. This SI gives one possible means of achieving the required 1 ohm or less resistance.

## Log of Revisions

<i>REV</i>	<i>DATE</i>	<i>DESCRIPTION</i>	<i>PAGES REVISED</i>	<i>PREPARED BY</i>
IR	09/23/2015	Initial Release	1 thru 10	KDS

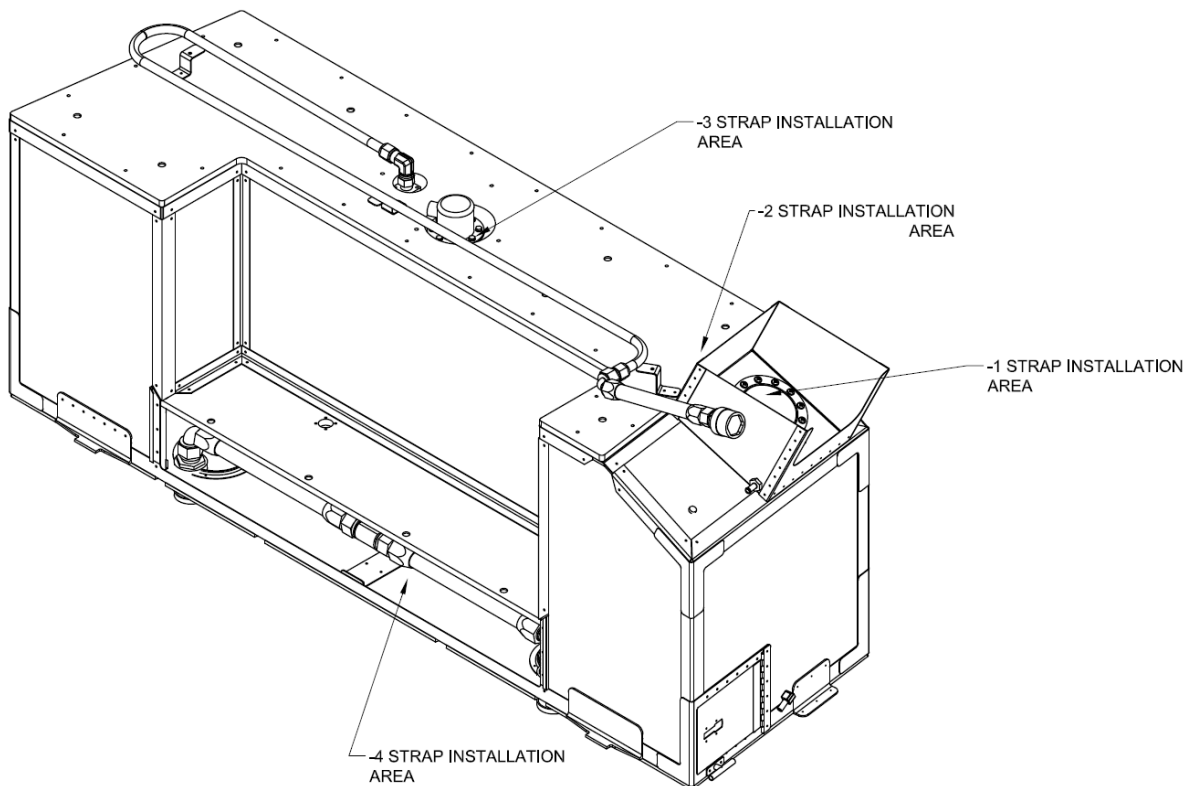
## Accomplishment Instructions:

Install -1 through -4 straps in accordance with the instructions provided herein. Figure 1 shows an overview of the strap installation locations.

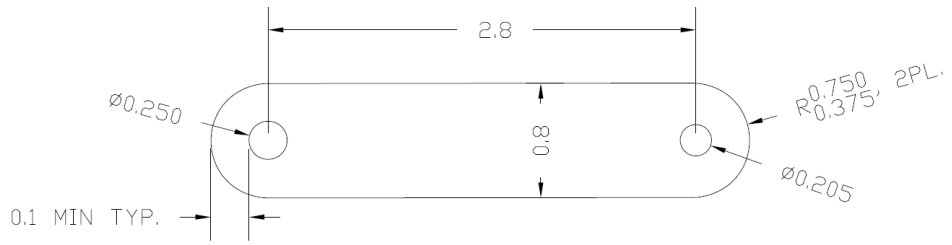
### Notes:

1. Fastener installation shall be in accordance with FAA advisory circular number AC 43.13-1B, chapter 7, paragraph 7-1 thru 7-89.
2. All dimensions are in inches unless otherwise shown.
3. Tolerances on dimensions are as follows:  $.xxx \pm 0.010$ ,  $.xx \pm 0.03$   $.xx \pm 0.1$
4. Length of fasteners may be increased if required for proper thread engagement.

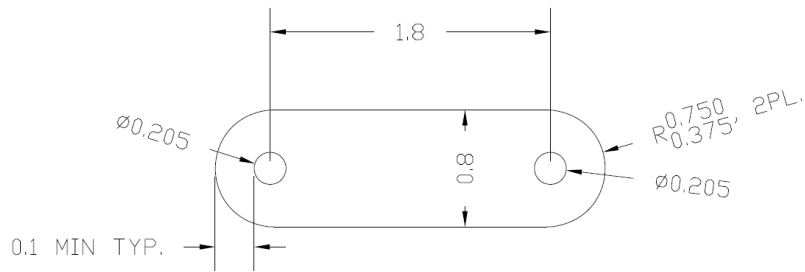
**Figure 1**  
**Strap Installation Locations**



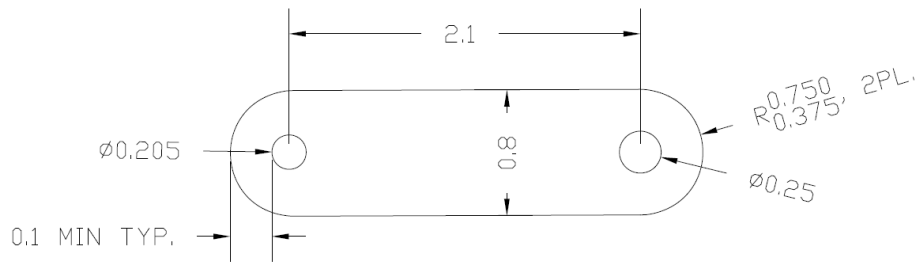
**Figure 2**  
**-1 Strap**



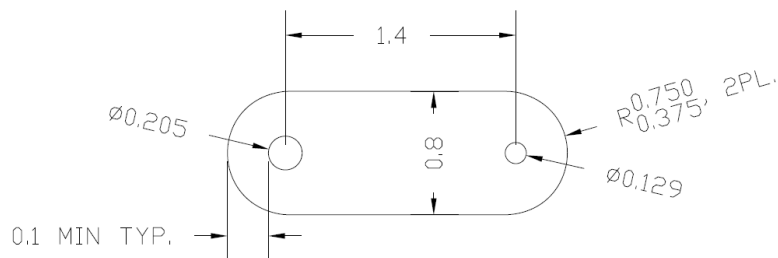
**Figure 3**  
**-2 Strap**



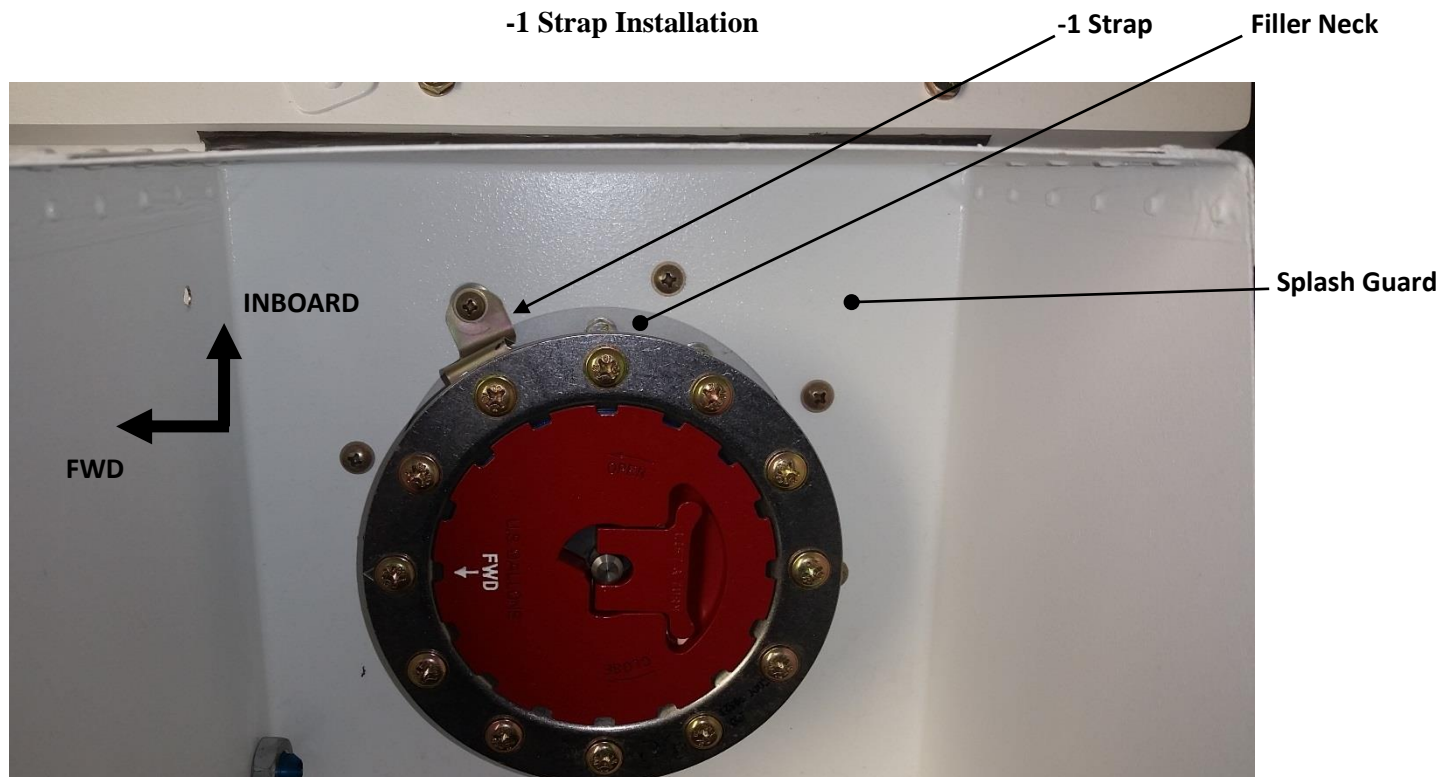
**Figure 4**  
**-3 Strap**



**Figure 5**  
**-4 Strap**



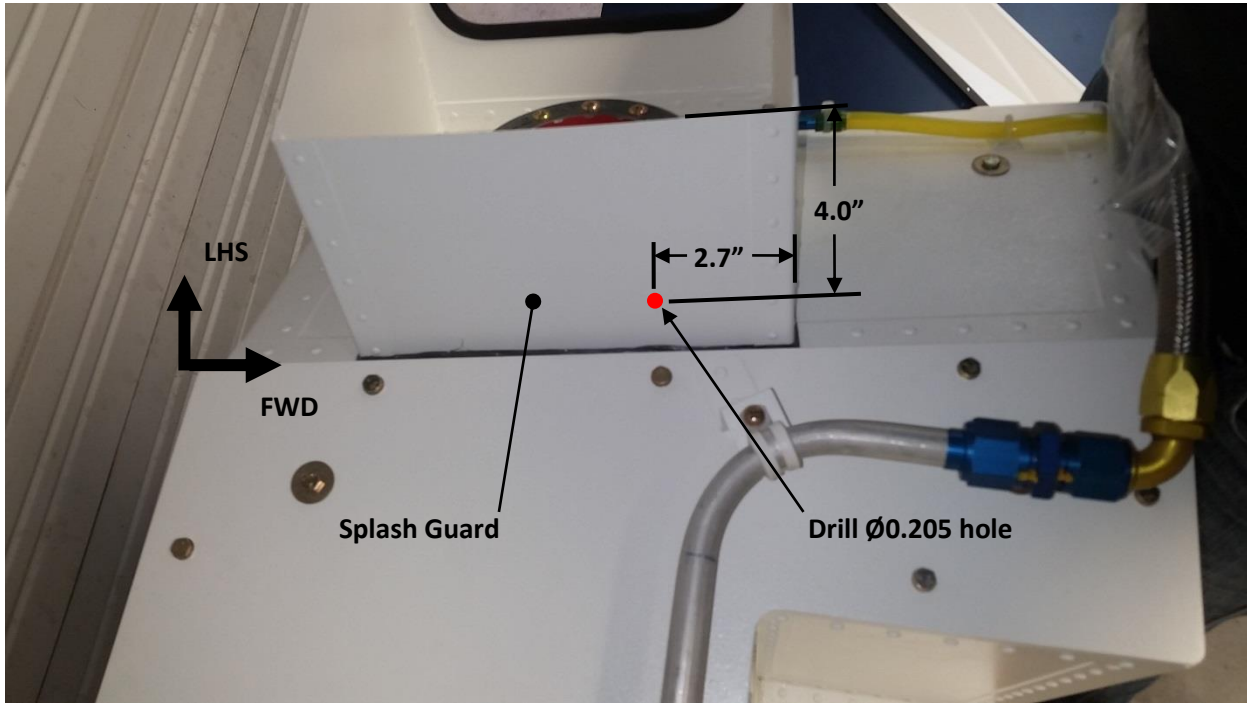
**Figure 6**  
**-1 Strap Installation**



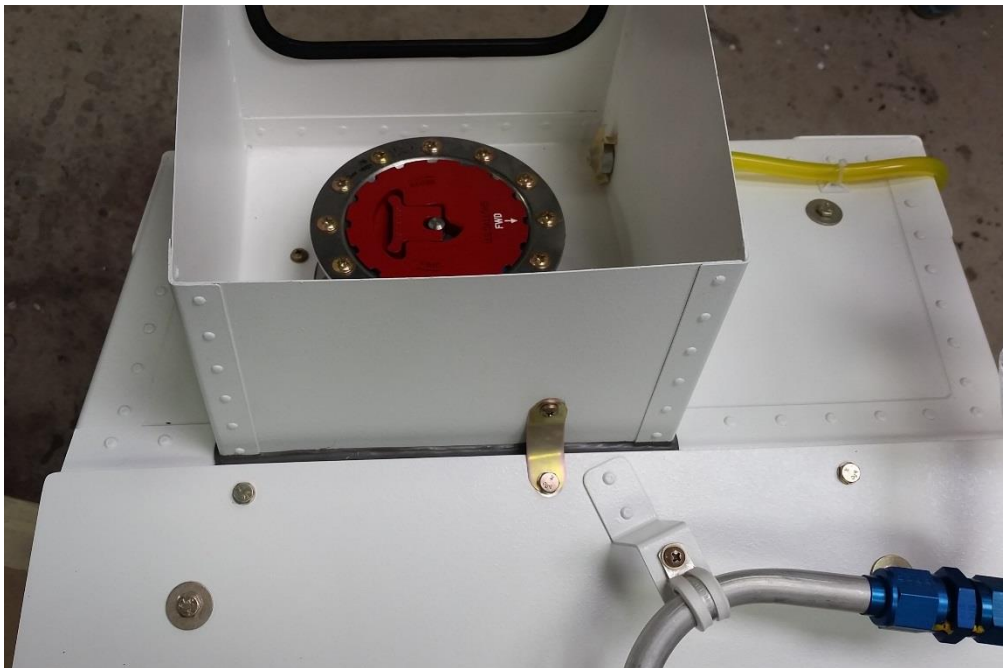
**-1 Strap Installation Instructions (Reference Figures 2 and 6)**

- 1) Fabricate -1 strap from Bell Helicopter part number 120-055-1-16, 120-055-1-14 or 0.020 inch thick copper sheet per ASTM B152 as detailed in figure 2. Deburr all edges and holes, maximum depth of hole deburr to be 0.005 inches.
- 2) Remove two existing screws in the -1 strap installation location shown.
- 3) Burnish mating surface of filler neck in strap installation area.
- 4) Burnish mating surface of splash guard in strap installation area.
- 5) Clean debris from the burnished areas using a clean cloth and apply Alodine to the bare metallic burnished surfaces and to the mating surfaces of the -1 strap. Use Henkel Alodine 1132 Touch-N-Prep pen or similar.
- 6) Install strap as shown using existing hardware. Torque #10-32 screws to 20 to 25 in-lb. and ¼-28 screw to 50 to 70 in-lb.
- 7) Verify that the resistance between the two fasteners attaching the -1 strap is less than 0.5 ohms.
- 8) Apply primer per MIL-P-23377 over exposed alodined areas.

**Figure 7**  
**-2 Strap Installation**



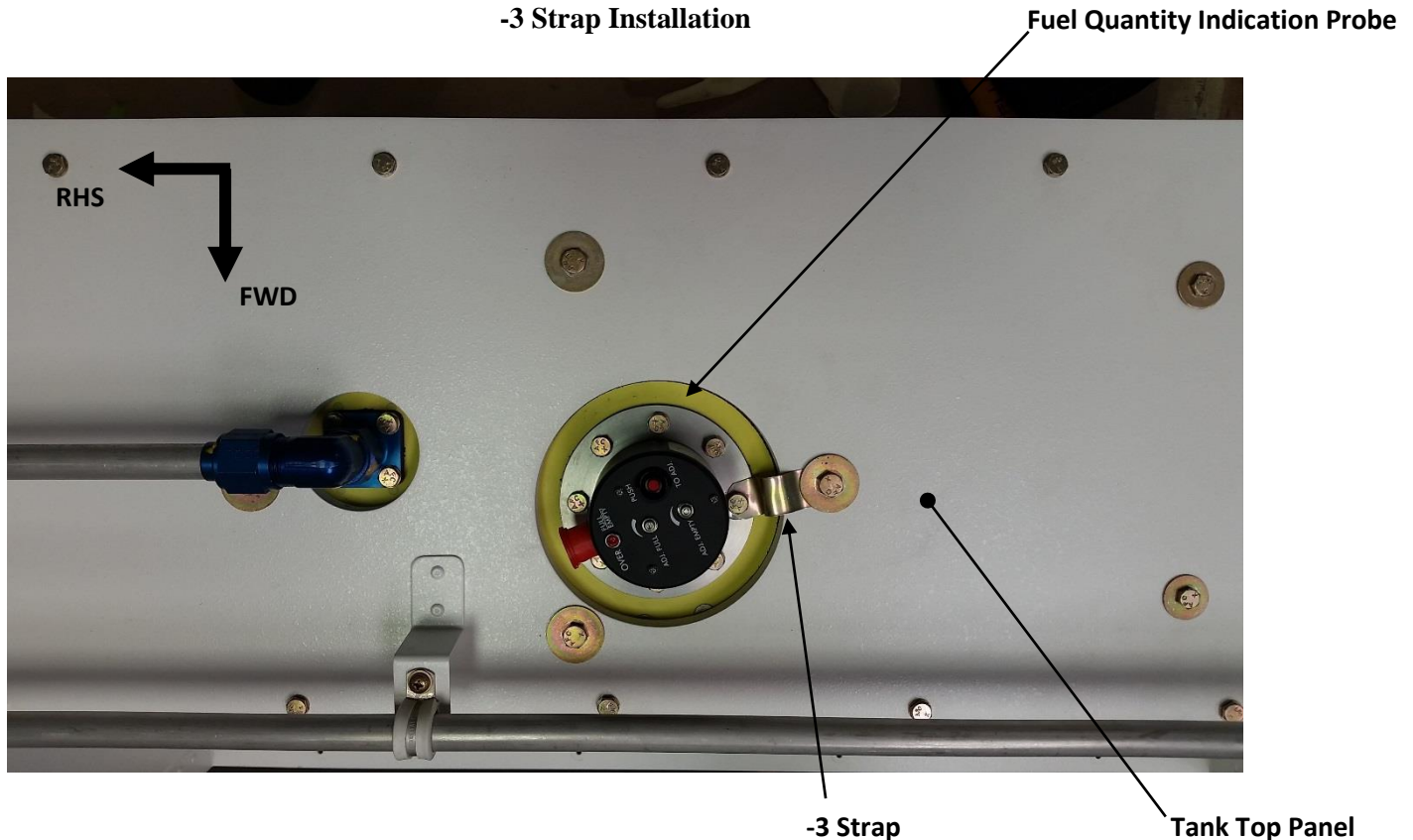
**Figure 8**  
**-2 Strap Installation**



**-2 Strap Installation Instructions (Reference figures 3, 7, and 8)**

- 1) Fabricate -2 strap from Bell Helicopter part number 120-055-1-16, 120-055-1-14 or 0.020 inch thick copper sheet per ASTM B152 as detailed in figure 4. Deburr all edges and holes, maximum depth of hole deburr to be 0.005 inches.
- 2) Drill  $\phi$ 0.205 hole through the splash guard and deburr to maximum depth of 0.005 inches. See figure 7 for hole location.
- 3) Remove one existing bolt in the -2 strap installation location shown.
- 4) Burnish mating surface of tank top panel under the existing bolt used for -2 strap attachment
- 5) Burnish mating surface of splash guard around  $\phi$ 0.205 drilled hole.
- 6) Clean debris from the burnished areas using a clean cloth and apply Alodine to the bare metallic burnished surfaces and to the mating surfaces of the -2 strap. Use Henkel Alodine 1132 Touch-N-Prep pen or similar.
- 7) Install strap as shown using existing bolt in the top panel and use one MS27039-1-5 screw, two AN960PD10L washers and one MS21042L3 nut to secure the -2 strap to the splash guard. Torque #10-32 screws to 20 to 25 in-lb.
- 8) Verify that the resistance between the two fasteners attaching the -2 strap is less than 0.5 ohms.
- 9) Apply primer per MIL-P-23377 over exposed alodined areas.

**Figure 9**  
**-3 Strap Installation**

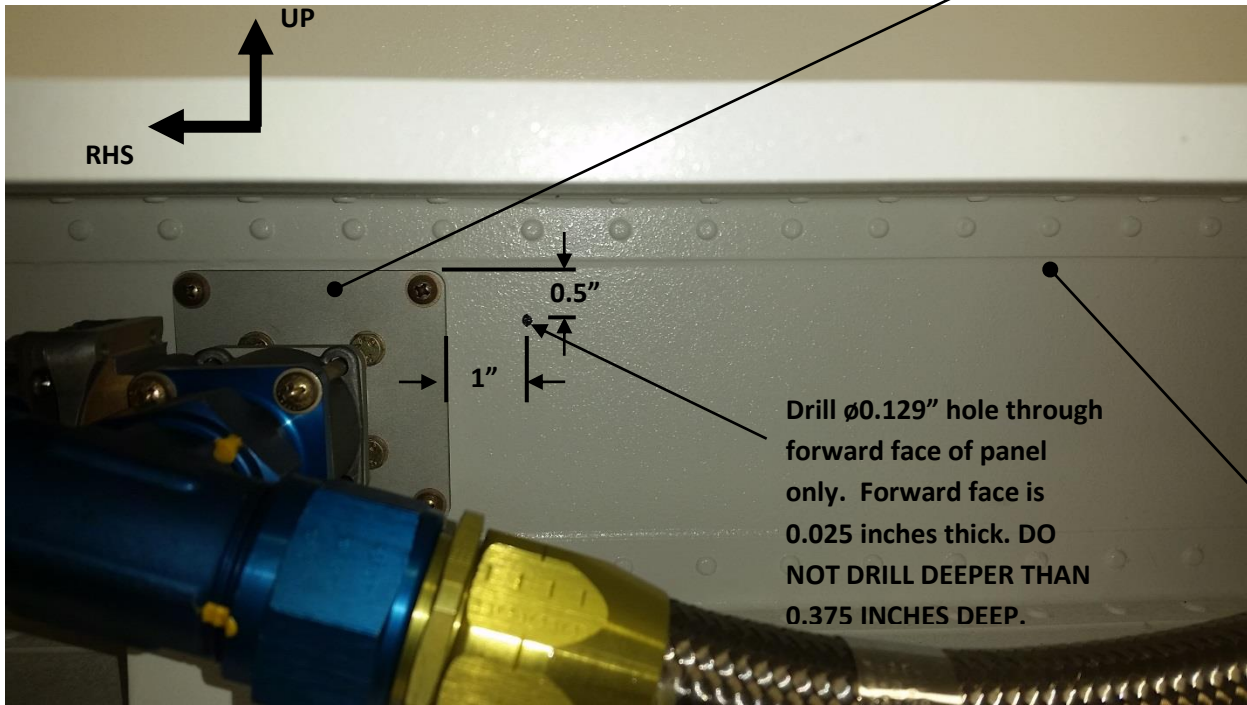


**-3 Strap Installation Instructions (Reference figures 4 and 9)**

- 1) Fabricate -3 strap from Bell Helicopter part number 120-055-1-16, 120-055-1-14 or 0.020 inch thick copper sheet per ASTM B152 as detailed in figure 3. Deburr all edges and holes, maximum depth of hole deburr to be 0.005 inches.
- 2) Remove two existing bolts in the -3 strap installation location shown.
- 3) Burnish mating surface of tank top panel under the existing AN970 washer.
- 4) Burnish flange of fuel quantity probe in the -3 strap installation area.
- 5) Clean debris from the burnished areas using a clean cloth and apply Alodine to the bare metallic burnished surfaces and to the mating surfaces of the -3 strap. Use Henkel Alodine 1132 Touch-N-Prep pen or similar.
- 6) Install strap as shown using existing hardware. Torque #10-32 bolts to 20 to 25 in-lb. and ¼-28 bolts to 50 to 70 in-lb.
- 7) Verify that the resistance between the two fasteners attaching the -3 strap is less than 0.5 ohms.
- 8) Apply primer per MIL-P-23377 over exposed alodined areas.



**Figure 10**  
**-4 Strap Installation**



**Figure 11**  
**-4 Strap Installation**



**-4 Strap Installation Instructions (Reference figures 5, 10, and 11)**

- 1) Fabricate -4 strap from Bell Helicopter part number 120-055-1-16, 120-055-1-14 or 0.020 inch thick copper sheet per ASTM B152 as detailed in figure 5. Deburr all edges and holes, maximum depth of hole deburr to be 0.005 inches.
- 2) Drill  $\varnothing 0.129$  hole through forward face of auxiliary tank panel only and deburr to maximum depth of 0.005 inches. See figure 10 for hole location.

**Note**

The forward face of the auxiliary tank panel is 0.025 inches thick.

**DO NOT DRILL DEEPER THAN 0.375 INCHES.**

- 3) Remove one existing screw in the -4 strap installation location shown.
- 4) Burnish mating surface of tank panel around the added  $\varnothing 0.129$ " hole.
- 5) Burnish aux fuel shutoff valve adapter in the -4 strap installation area.
- 6) Clean debris from the burnished areas using a clean cloth and apply Alodine to the bare metallic burnished surfaces and to the mating surfaces of the -4 strap. Use Henkel Alodine 1132 Touch-N-Prep pen or similar.
- 7) Install strap as shown using existing screw and an added CR3213-4 rivet. Torque #10-32 screws to 20 to 25 in-lb.
- 8) Verify that the resistance between the two fasteners attaching the -4 strap is less than 0.5 ohms.
- 9) Apply primer per MIL-P-23377 over exposed alodined areas.