

SERVICE LETTER



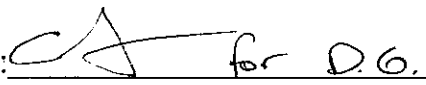
SL 2007-002


Revision A

MODIFICATION OF TANK HARDPOINTS AND STRUTS

Used On: 208 SPRAY SYSTEM S/N 208-203-005
FOR INSTALLATION ON
BELL HELICOPTER MODEL 407 ROTORCRAFT S/N 53618, TAIL NUMBER N618TS

Production Manager:  Date: 3/20/07

Director of Sales:  for D.G. Date: 3/20/07

Director of Engineering:  Date: 20 March 2007

Quality Control Manager:  Date: 20 MAR 07

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Date: Mar. 20, 2007

Revision: A

PART NUMBERS AFFECTED: 308-302020-003 Hard Point Installation Kit
208-301001-001 Tank Assembly

SYSTEM MODEL: MODEL 208 Model 208 Spray System S/N 005
SPRAY SYSTEM

COMPLIANCE: Required for install

DESCRIPTION: Due to interference caused by Aeronautical Accessories, Inc's forward cross tube the mounting hardware of the standard 208 Spray System needs to be repositioned slightly inboard. This requires changes to the bill of materials and installation manual.

APPROVAL: This modification requires FAA Form 8110-3 Approval

MANPOWER: Estimated 10 MHRS

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MATERIAL:

The following materials are required for the accomplishment of this bulletin and may be obtained through Simplex Manufacturing:

Quantity	Part Number	Description	Item No.
1	208-301001-001	Tank Assembly	1
1	308-302020-003	Hard Point Installation Kit	2

SPECIAL TOOLS:

1. Aircraft Jacks
2. Standard Hand Tools
3. Drill Bit .250 (1/4")
4. Drill Bit .313 (5/16")

WEIGHT AND BALANCE: Not affected

ELECTRICAL LOAD DATA: Not affected

REFERENCE:

PUBLICATIONS AFFECTED:

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1.1 INITIAL INSTALLATION INSTRUCTIONS MAIN TANK ASSEMBLY.

NOTE:

Locate the Hardpoint Installation Kit No. 308-302 020-000 for installation.

1.1.1 Attachment Fitting General Description:

Two forward and two aft points on the rotorcraft are used to support the main tank assembly.

The forward tank attachment fittings are fixed on the Spray System tank.

Both Left-hand forward and right-hand forward rotorcraft attachment fittings will be installed on the forward cross tube fittings and fuselage using new NAS hardware (supplied).

Both Left-hand and right-hand aft tank attachment fittings are fixed on the Spray System.

Both Left-hand and right-hand aft rotorcraft attachment fittings will be installed under the aft cross tube straps using new NAS hardware (supplied).

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1.1.2 Initial Rotorcraft Forward Attachment fitting Installation:

NOTE:

This section describes how to install the right hand side Forward Attachment fitting. The left-hand forward attachment fitting is a mirror image.

- a. Remove the pilot's and co-pilots seats and panels, exposing inner skin and forward portion of bulkhead (F.S. 73.13).
- b. Remove the two screws from the bulkhead support angle that are located at FS 72.75 and BL 10 and BL12 below the Pilot's seat. These are the fourth and fifth screws from the center console visible under the Pilot seat at the aft bulkhead on the left side of the aircraft, the third and fourth screws on the right side. (Figure 1-1)
- c. Using a long ¼" twist drill, drill down through the two potted inserts the screws were removed from in step b. It may be necessary to remove some Bell brackets and equipment to get the drill to line up. Re-install per the applicable Bell manual after the attachment fittings are installed. (Figure 1-1)
- d. Install one Clevis Bolt (P/N 308-302 028-001) in the outboard ¼" hole and install one Filler (P/N 308-302 027-001) below the skin. Temporarily secure with a nut and a stack of washers to clamp up. Align Filler laterally across the aircraft. It may be necessary to remove some of the sealant on the gear fitting. (Figure 1-1)
- e. Drill ¼" through Filler (P/N 308-302 027-001) from the top through the inboard ¼" hole drilled in step c. (Figure 1-1)
- f. Remove the both inboard NAS6604-7 fasteners securing the forward cross tube fitting to the rotorcraft. (FS 70.56 and FS75.44 and BL12.13). (Figure 1-1)
- g. Remove the Clevis Bolt installed in step d.
- h. Install the Plate (P/N 308-302 026-001) below the existing gear fitting with two Bolts (P/N 110241, NAS6604-9) and washers removed earlier re-securing the fitting to the aircraft. Make sure that the Filler (P/N 308-302 027-001) stays in place. (Figure 1-1)

CAUTION

TORQUE the new NAS6604 bolts 50 to 70 in.-lb. Over torque may damage the potted inserts.

- i. From the top, using a ¼" drill, drill through the Filler (P/N 308-302 027-001) 1 hole. (Figure 1-1)
- j. Locate the Radius Filler (P/N 308-302 029-001) against the bulkhead (FS 73.13) and centered left and right over the two ¼" holes. The angled portion of the Radius Filler is aft against the bulkhead with the angle on the Radius Filler matching the angle of the bulkhead. (Figure 1-1)

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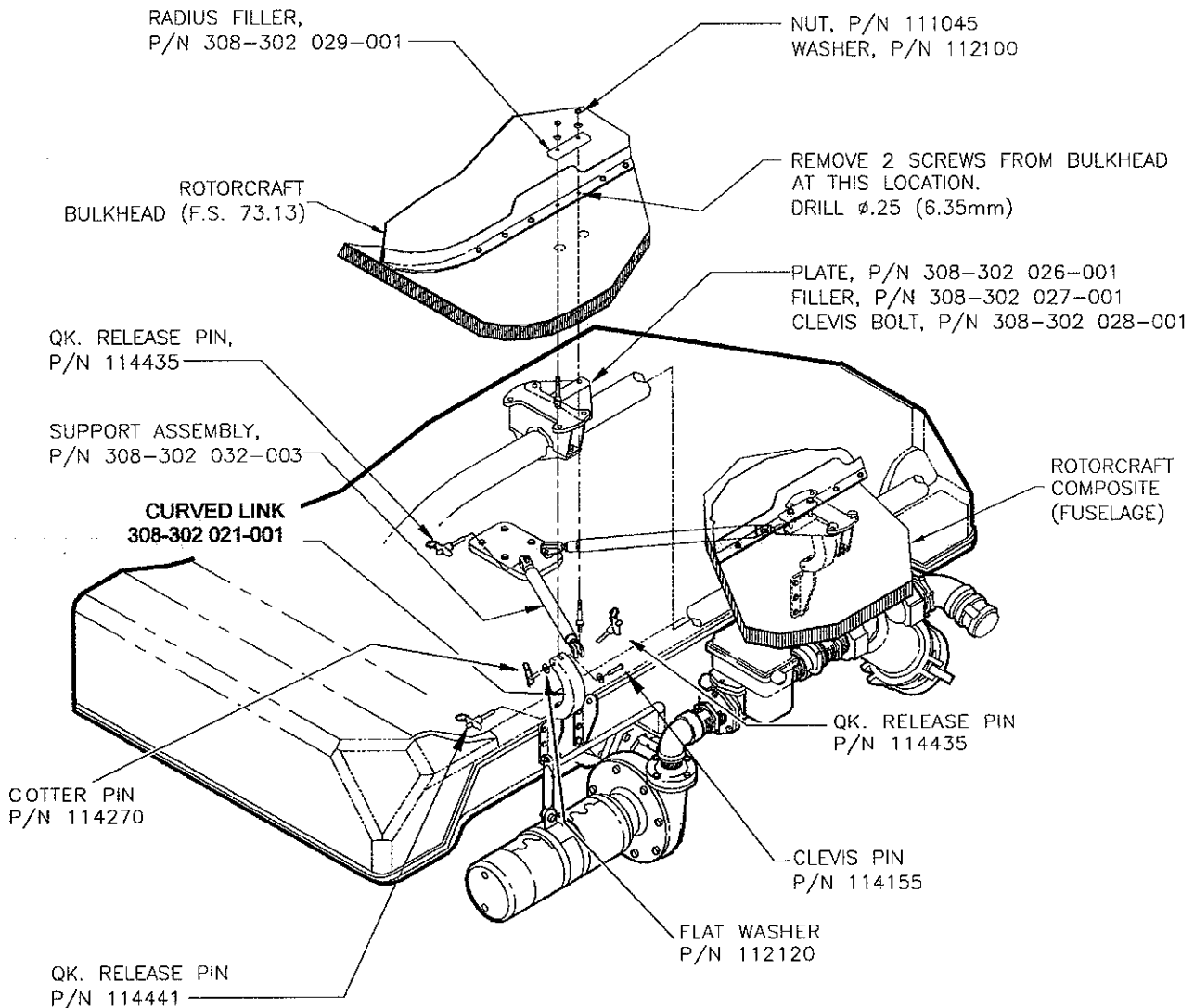


Figure 1-1 (Sheet 1 of 2), Forward Attachment Fitting Installation (Bell Gear)

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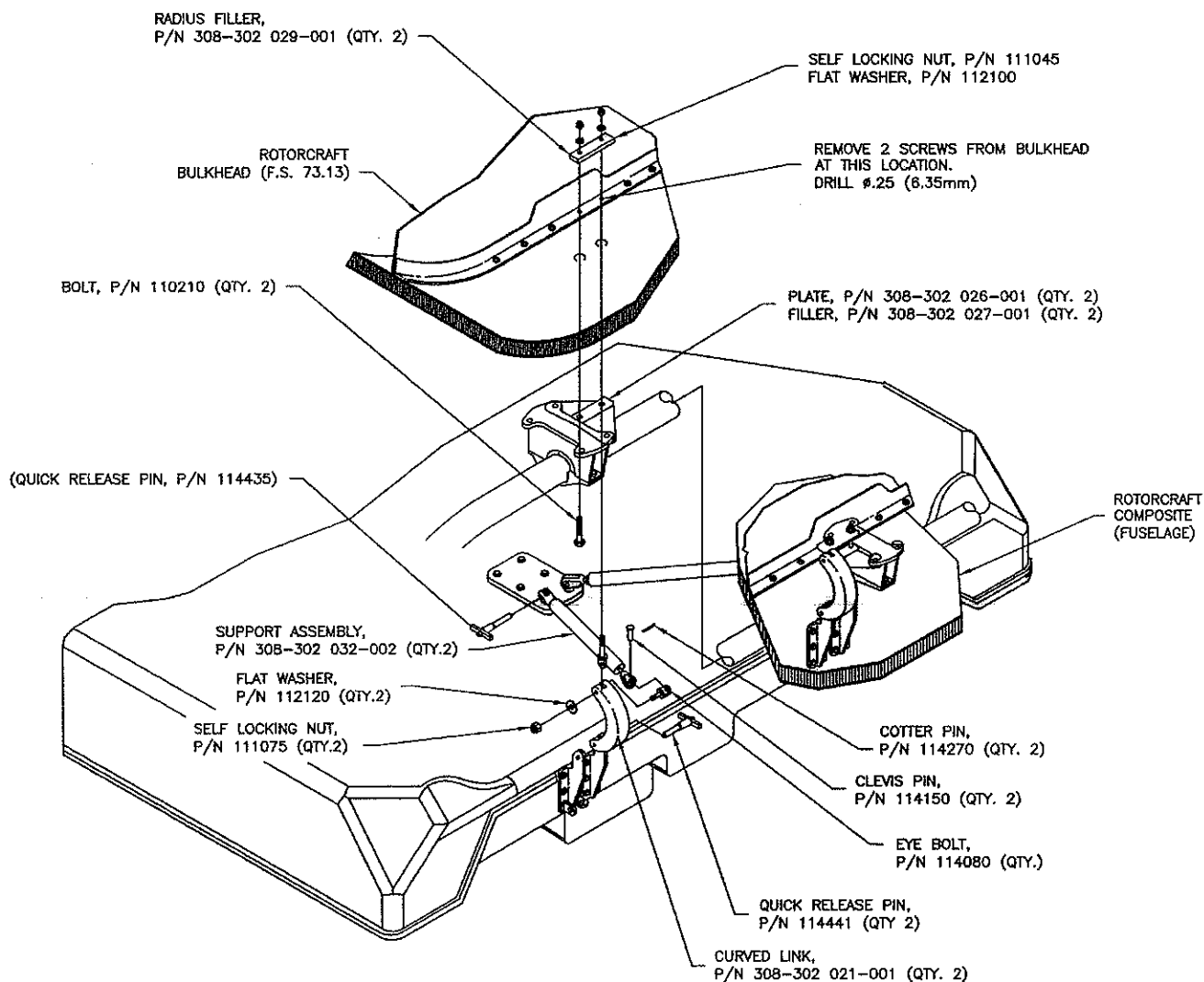


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A-A GEAR INSTALLATION
(ELECTRIC PUMP AND PLUMBING REMOVED FOR CLARITY)

Figure 1-1 (Sheet 2 of 2), Forward Attachment Fitting Installation (Aeronautical Accessories Gear)

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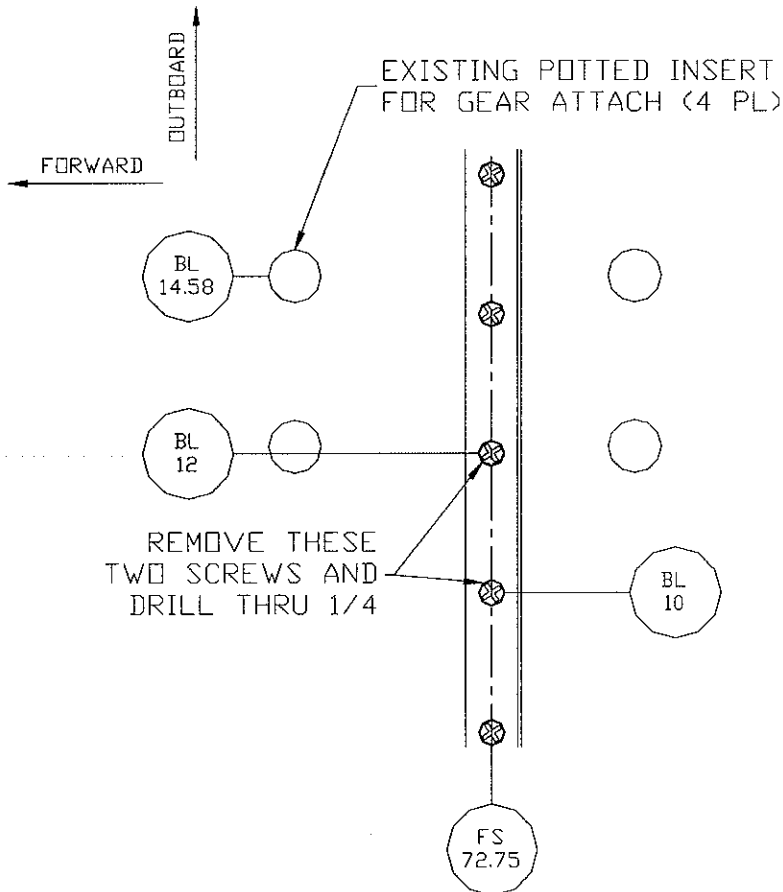


Figure 1-2 Forward Aircraft Modification

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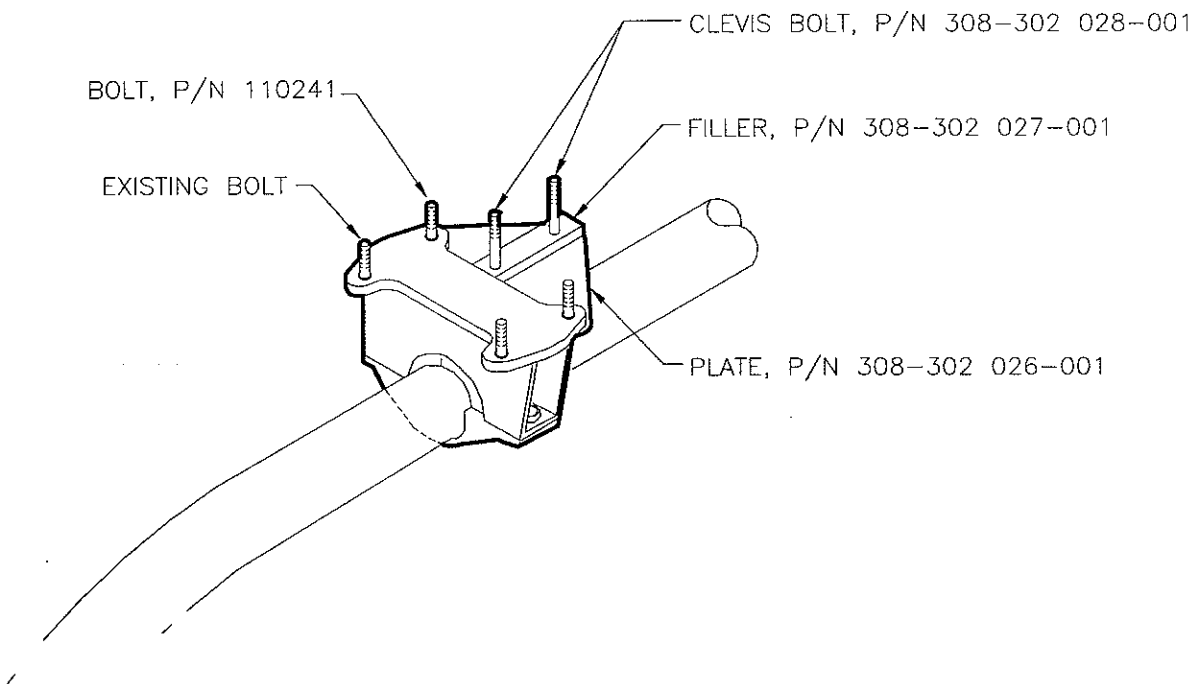


Figure 1-3 (Sheet 1 of 2), Forward Aircraft Attachment Fitting Installation (Bell Gear)

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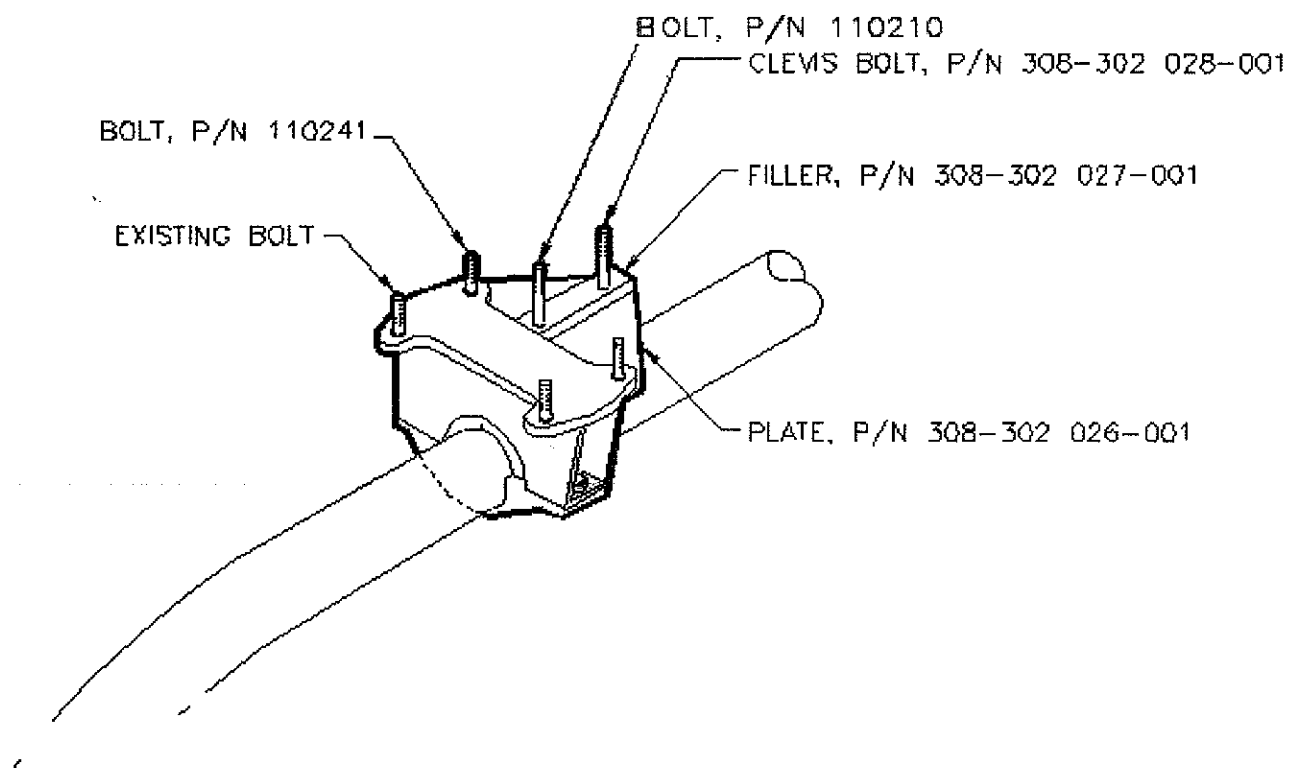


Figure 1-3 (Sheet 2 of 2), Forward Aircraft Attachment Fitting Installation (Aeronautical Accessories Gear)

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1.1.2 (cont.)

- k. Using a short $\frac{1}{4}$ " bit, mark the Radius Filler up from the bottom through the inboard $\frac{1}{4}$ " hole. Remove Radius Filler and drill $\frac{1}{4}$ " at marks. (Figure 1-1)
1. **(Bell Gear)** Install one Clevis Bolt (P/N 308-302 028-001) from the bottom and secure with Nut (P/N 111045 MS21044C4) and Washer (P/N 112100 AN960C-416). The Clevis Bolt aligns with the lug aft end canted 37° toward the aircraft center line. 50 to 70 in.-lb. (Figure 1-3, 1-4) **(Aeronautical Accessories Gear)** Install one Clevis Bolt (P/N 308-302 028-001) from the bottom through the inboard hole. Secure with nut (P/N 111045) and washer (P/N 112100). The Clevis Bolt aligns with the lug aft end parallel to the aircraft center line. 50 to 70 in.-lb. (Figure 1-4, 1-5)

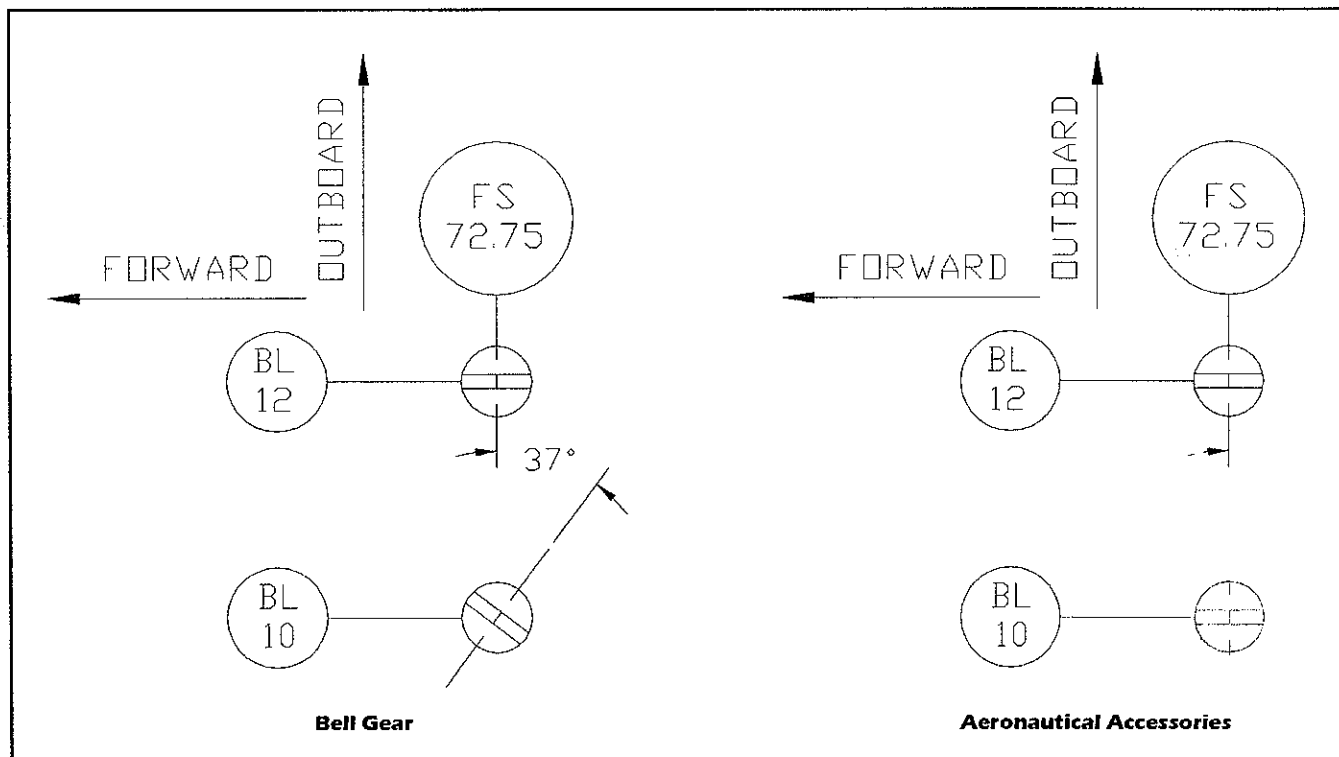


Figure 1-4, Clevis Bolt Orientation (View looking up, left side of aircraft)

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- m. Using the 1/4" bit, drill through the Radius Filler up from the bottom through the outboard 1/4" hole.
- n. **(Bell Gear)** Install one Clevis Bolt (P/N 308-302 028-001) from the bottom and secure with Nut (P/N 111045 MS21044C4) and Washer (P/N 1120100 AN960C-416). The Clevis bolt aligns with the lug fore and aft. 50 to 70 in.-lb. (Figure 1-1, 1-2) **(Aeronautical Accessories Gear)** Install one bolt (P/N 110210) from the bottom through the outboard hole. Secure with nut (P/N 111045) and washer (112100).(Figures 1-2, 1-5)
- o. **(Bell Gear)** Install one Curved Link (P/N 308-302 021-001) on the outboard Clevis Bolt with one Clevis Pin (P/N 114155) either end up, convex side forward with one washer (P/N 112120) on each side and secure with a Safety Pin (P/N 114255). **(Aeronautical Accessories Gear)** Install one curved link (P/N 308-302 021-001) on the inboard Clevis Bolt with the eyebolt (P/N 114080) either end up, convex side forward with one washer (P/N 112120) on each side and secure with a Safety Pin (P/N 114255).

CAUTION

TORQUE the new NAS6604 bolts 50 to 70 in.-lb. Over torque may damage the potted inserts.

NOTE:

Apply Corrosive Preventative Compound to NAS bolt shanks per Bell Standard Practices Manual BHT-ALL-SPM.

NOTE:

Apply Sealant to fittings per Bell Standard Practices Manual BHT-ALL-SPM.

1.1.3 Initial Aft Attachment fitting Installation:

Both left-hand and right-hand aft tank attachment fittings are fixed on the Spray System. A left and right bracket will be installed under the aft cross tube straps using new NAS hardware (supplied). After installation, the bracket will be drilled and secured during the initial installation.

- a. Remove the two NAS6206-10 fasteners securing both aft cross tube straps. (Figure 1-6)
- b. Install P/N 208-302 004-001(bracket, hard-point) to the bottom of the existing cross tube support using new 110217 (NAS6206-34) hardware (supplied) with bolt heads on the bottom, nuts on top. Leave brackets slightly loose until later.
- c. Position the tank with the forward attachment fittings on the tank below the forward attachment fittings installed earlier on the belly of the rotorcraft.

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- d. Lift the forward end of the spray tank into position. Attach the attachment fittings on the forward end of the tank to the lower ends of the curved Links (P/N 308-302 021-001) with 5/16" Quick Release Pins (P/N 114441).
- e. Lift the aft end of the Spray tank so that the angles mounted to the top of the tank align around the tabs on the brackets installed on the cross tube supports. (Fig. 1-5)
- f. Support the tank. No sharp objects are to be used against the tank structure.
- g. Tighten NAS6206-34 (P/N 110217) bolts attaching P/N 208-302 004-001 (bracket, hard-point) to the bottom of the existing cross tube support. See step b. **Torque:** 285 to 319 in.-lbs. [32.2 to 36 N-m]
- h. With tank supported and the tabs positioned approximately centered on the angle. (Figure 2-12) Verify that there is at least 1/8" clearance between the Curved Link and the forward gear cross-tube (It may be necessary to push the tank forward to obtain this). Drill through the brackets and tab $\phi 5/16"$ (8.33 mm).
- i. Insert 5/16" Quick Release Pins (P/N 114435) through aft attachment fittings.

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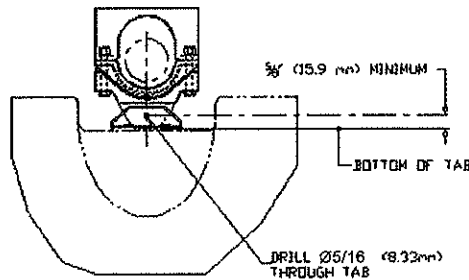


Figure 1-5, Aft Attachment fitting Installation

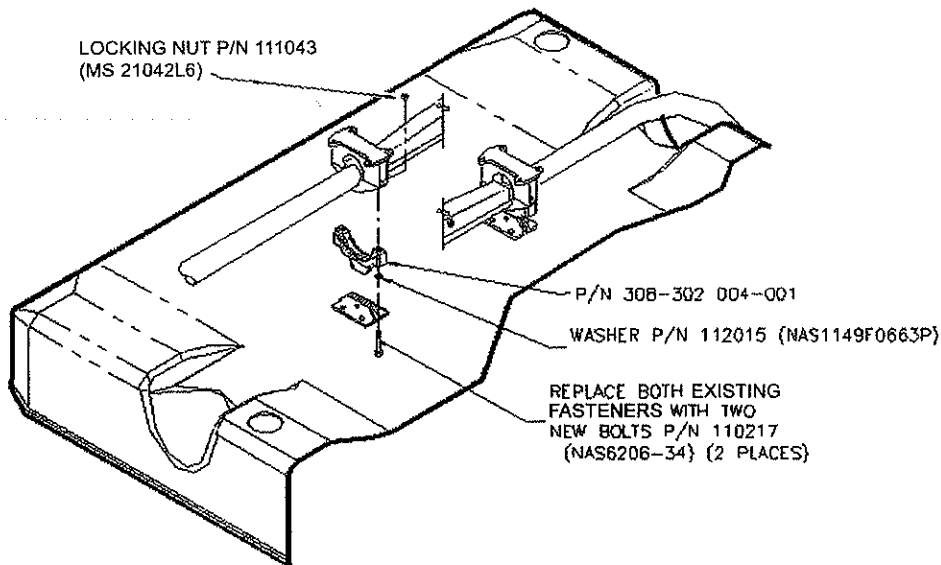


Figure 1-6, Aft Rotorcraft Attachment Fitting Installation

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1.1.4 Diagonal Support Assembly Installation

- a. Install the tank with all four-attachment fittings if not already accomplished. (Figure 1-1)
- b. Connect the two Struts (**Bell Gear**) (P/N 308-302 032-003) OR (**Aeronautical Accessories Gear**) (308-302 032-002), to the two clevis bolts on top of the tank 14" back from the front edge with Quick Release Pins (P/N 114435). (Figure 1-1)
- c. Adjust strut length by rotating fittings in ends of struts. Verify that adequate thread engagement exists in the strut threads by inserting a piece of safety wire into the "witness hole" on the tube and verify that the fork fitting threads extend at least that far. (Figure 1-1)
- d. (**Bell Gear**) When the forward fork fitting on the strut aligns with the inboard Clevis Bolt installed earlier (Figure 1-4) at the forward attachment point, install Quick Release Pin (P/N 114441 MS 17985-C510) through holes in both fittings. (Figure 1-1) (**Aeronautical Accessories Gear**) When the forward fork fitting on the strut aligns with the inboard Clevis Bolt installed earlier (Figure 1-4) at the forward attachment point, install the Clevis Pin (P/N 114150) and the Cotter Pin (P/N 114270) through holes in fittings. (Figure 1-1)
- e. Tighten jam nuts on strut fittings. (Figure 1-1)
- f. Verify that adequate thread engagement exists in the strut threads by inserting a piece of safety wire into the "witness hole" on the tube and verify that the fork fitting threads extend at least that far. (Figure 1-1)
- g. This completes the structural tank installation.

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