SERVICE LETTER

Service Letter Number	Simplex Model	Issue Date	Revision	Revision Date
SL2009-020	208 & 308	March 17, 2010	I/R	March 17, 2010

Written By:
Tina Bliss
Engineering

Approved By:
Stan Franz
Director of Engineering

Subject: Tank Attachment Inspection

Applicability: This service letter is applicable to Simplex Manufacturing Model 208 Spray Systems and Model 308 Fire Attack Systems installed on Bell 407 series rotorcraft utilizing either Bell or Aeronautics Accessories (AA) landing gear.

References: Follow instructions in the following manuals where applicable to avoid damage to system while performing procedures in this Service Letter.

- Bell 407 Maintenance Manual (MM) or Instructions for Continued Airworthiness (ICA)
- Simplex Model 208 and 308 Maintenance Manual (MM) Documents Number 208-102005-001 and 308-102005-001
- Simplex Model 208 and 308 Installation Manual Documents Number 208-102002-001 and 308-102002-001

NOTE: *The information contained in this document is for reference only and does not supersede the service instructions contained in the Model 208 or 308 Maintenance Manual Documents Number 208-102005-001 or 308-102005-001.*

Purpose: This document was drafted as a major inspection guide to ensure system performance and safety is not diminished by age or extended use in a highly corrosive and cyclic environment. Performing the recommended inspections will improve service life of the system and reduce unscheduled maintenance during peak usage.

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

Compliance: Compliance of this service letter is recommended prior to heavy seasonal use on systems that have 3000 hours time in service or 5 years since new and every 3000 hours or 5 years thereafter, whichever comes first.

Weight and Balance:

No effect.

Electrical Loads:

No effect.

Equipment:

1. Typical mechanics tool kit
2. Indelible ink pen
3. Drill and the following drill bits:
    a. #30 (1/8”)
    b. 3/16” (ϕ 0.191)
    c. 1/4” (ϕ 0.255)
    d. 5/16” (ϕ 0.313)
4. Pop rivet puller with mandrel capable of pulling a 3/16” aluminum rivet
5. Suitable ground handling equipment
6. Shop rags

Consumables:

1. Water
2. Acetone
3. MIL-C-16173-D grade 4 Corrosion Inhibitor
4. MS20995C032 Safety wire

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

Parts:

Parts required to comply with this service letter are listed in Table 1 with installation hardware listed below each major component. Parts may be purchased as a service letter kit by supplying the Simplex system model number and landing gear configuration. Replacement parts and service kits may be ordered through your local authorized Simplex Representative or directly from Simplex Manufacturing.

Table 1: Parts

Tank Attachment Parts		Bell Gear		AA Gear	
Part Number	Description	Quantity		Quantity	
		208	308	208	308
308-302004-001	Bracket, aft hardpoint, upper	2	2	2	2
000-110217-000	Bolt	4	4	4	4
000-112015-000	Washer	4	4	4	4
000-111043-000	Nut	4	4	4	4
308-302005-001	Bracket, aft tank angle, external	4	4	4	4
308-302006-001	Bracket, aft tank angle, internal	4	4	4	4
000-110173-000	Bolt	14	14	14	14
000-112080-000	Washer	14	-	14	-
000-112100-000	Washer, light	-	28	-	28
000-111045-000	Nut	14	14	14	14
308-302034-001	Plate, top forward tank attachment	1	1	1	1
000-110150-000	Bolt, 5/16”	4	4	4	4
000-114074-000	SS Eyebolt	2	-	2	-
000-114078-000	SS Eyebolt	-	2	-	2
000-112120-000	Washer, 5/16”	6	12	6	12
000-112363-000	Washer, fender, 5/16”	6	-	6	-
000-111075-000	Nut, 5/16”	6	6	6	6
308-302031-001	Bracket, forward tank attachment	4	4	4	4
308-302035-001	Plate, backup, front	4	4	4	4
000-110160-000	Bolt, ¼”	16	16	16	16
000-112100-000	Washer, light, ¼”	16	16	16	16
000-112362-000	Washer, fender, ¼”	-	16	-	16
000-111045-000	Nut, ¼”	16	16	16	16
000-110279-000	Bolt, 5/16”	6	8	6	8
000-114075-000	SS eyebolt, 5/16”	2	-	2	-
000-112120-000	Washer, 5/16”	8	8	8	8
000-112140-000	Washer, light, 5/16”	-	8	-	8
000-112459-000	Washer, fender, 5/16”	8	-	8	-

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

Tank Attachment Parts		Bell Gear		AA Gear	
Part Number	Description	Quantity		Quantity	
		208	308	208	308
000-111075-000	Nut, 5/16”	8	8	8	8
000-114435-000	Pin, T, with lanyard	4	2	4	2
000-114441-000	Pin, T	2	4	2	4
000-102855-000	Lanyard	2	4	2	4
000-114675-000	Pop rivet (3/16”)	6	6	6	6
000-112060-000	Washer, light (3/16”)	6	6	6	6
308-302021-001	Curved Link	2	2	2	2
000-114080-000	Eyebolt, 5/16”	-	-	2	2
000-114155-000	Clevis Pin	2	2	-	-
000-112120-000	Washer, light, 5/16”	4	4	4	4
000-111075-000	Nut, 5/16”	-	-	2	2
000-114150-000	Clevis Pin	-	-	2	2
000-114270-000	Cotter pin	4	4	4	4
308-302032-002	Support Rod	-	-	2	2
308-302032-003	Support Rod	2	2	-	-
650-912004-500	Strut, pump support	1	-	1	-
000-110279-000	Bolt, 5/16”	1	-	1	-
000-112120-000	Washer, 5/16”	2	-	2	-
000-111075-000	Nut, 5/16”	1	-	1	-
000-110140-000	Bolt, ¼”	1	-	1	-
000-112100-000	Washer, light, ¼”	2	-	2	-
000-111045-000	Nut, ¼”	1	-	1	-
000-153085-000	732 Sealant, 3-oz tube	2	2	2	2

Procedure:

1. Review rotorcraft log books and determine date of initial installation, hours in service, and time in service of system.

2. At 3000 hours or 5 years since new, remove tank from rotorcraft in accordance with the MM.

NOTE: *Failure to follow tank removal and installation instructions from the MM could result in damage to system or rotorcraft*.

3. Inspect tank to rotorcraft interface in accordance with Bell MM. Replace any corroded hardware.

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

4. Remove equipment shroud and access covers in accordance with specific system MM or ICA to gain access to front attachment brackets and hardware (Figure 1).

5. Thoroughly clean tank inside and out. Flush with fresh water.

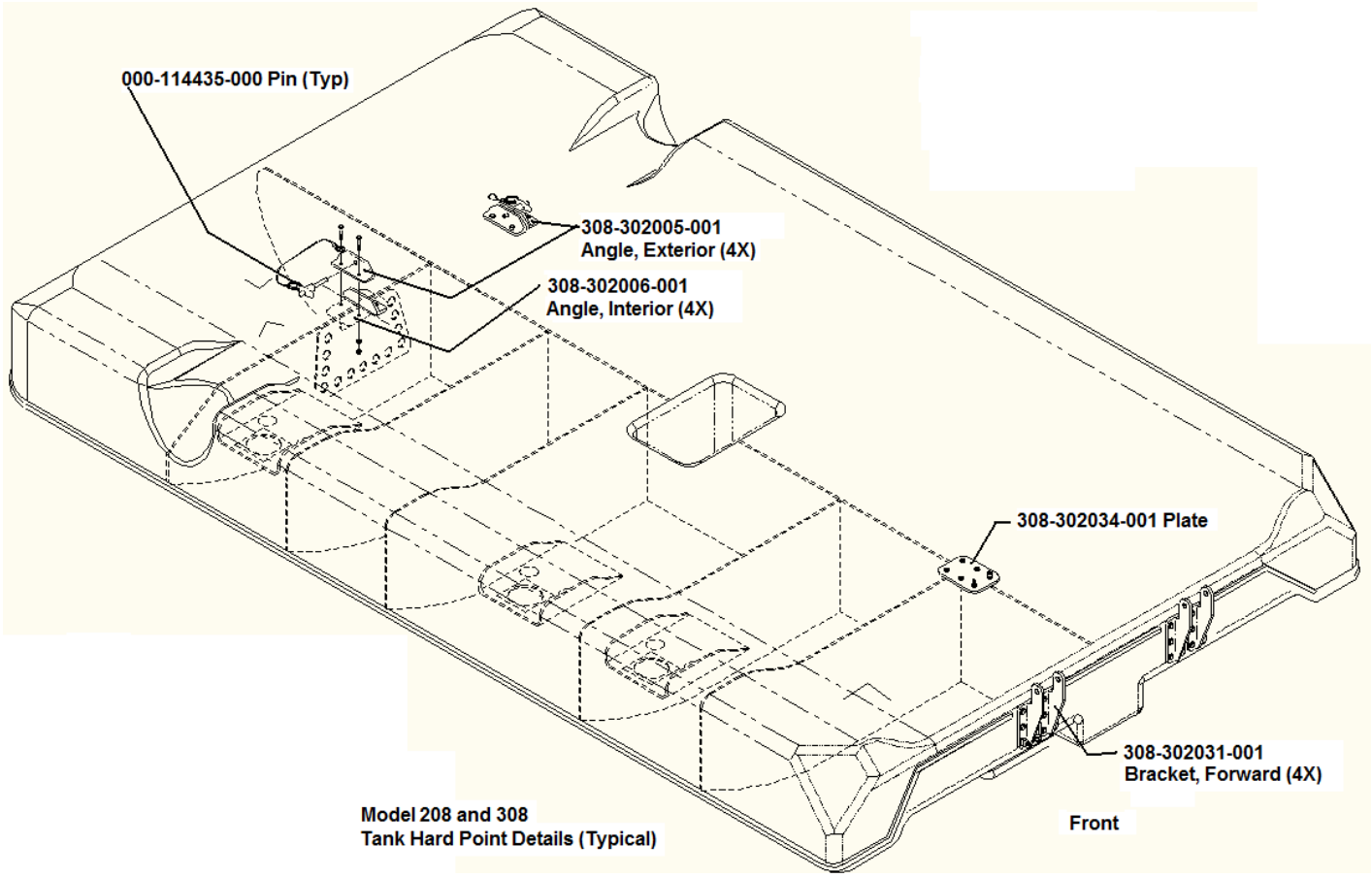

Figure 1: Tank Attachment Details (Typical)

6. Remove tank support rods, curved links, quick release pins and clevis pins.

7. Initially adjust replacement support rods to match adjustment length of existing rods. Discard old support rods.

8. Inspect tank structure for condition and repair in accordance with System MM or ICA.

NOTE: *Cracks within 2" of tank attachment are not customer repairable. Contact Simplex Manufacturing for direction if a crack is found in the vicinity of an attachment fitting (Ref MM 208-102005-001 or 308-102005-001).*

NOTE: *All hardware that penetrates the tank skin must be installed with 732 Sealant to prevent leaks. Spread a bead of sealant on the mating surface of all brackets, bolts and washers during installation. Allow a minimum of 24 hours for sealant to dry prior to leak testing tank.*

9. Inspect lanyards connecting quick release pins to tank surface for condition, security and leaks at rivet. Replace rivets and lanyards as follows if protective sleeve on cable is worn, ring eyes are out of round, or rivet is loose.

    a. The 208 systems may or may not have the quick release pin lanyards installed through the tank. Replace pins as configured, 3/16" rivets, backup washers and lanyards are supplied with Service Letter Kit.

    b. Drill out rivet securing each quick release pin lanyard to the tank with a 1/8" (#30) drill for the 208 systems or a 3/16" (ϕ 0.191) drill for the 308 or modified 208 systems. Be careful not to damage the composite tank structure when removing rivets. Discard.

    c. Install lanyard with 732 Sealant on pop rivet and backup washer as shown in Figure 2 (typical). Placement of rivet may vary and is not important as long as the quick release pin will fully engage in the brackets.

10. Discard six (6) quick release pins. Remove lanyard from split ring on pin if lanyard installation meets the criteria in Step 9.

11. Remove center plate by reaching inside tank and removing six (6) nuts, washers and bolt/eyebolts as shown in Figure 2.

12. Discard plate and hardware.

13. Thoroughly clean tank to bracket interface with acetone.

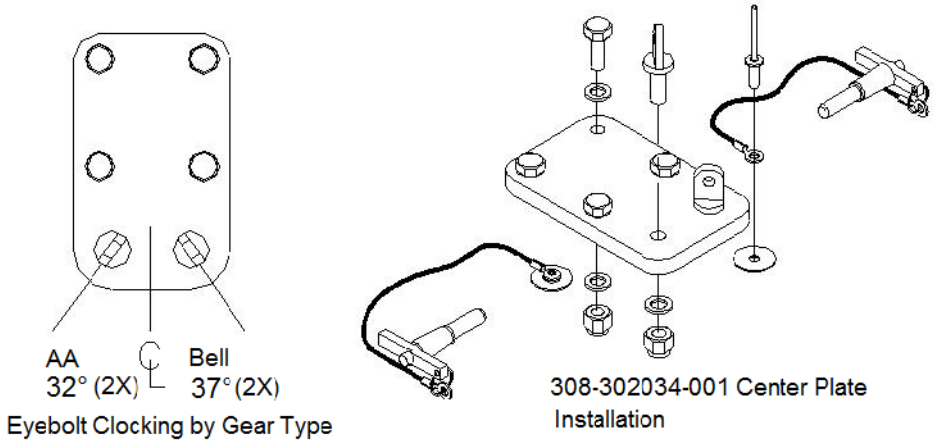

Figure 2: Center Plate Installation (Typical)

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

NOTE: *The replacement center plate (308-302034-001) has six (6) 0.313 holes for 5/16" hardware. Previous configurations may have had 1/4" holes for the four (4) bolts and the tank mounting holes will need to be enlarged. If tank pass through holes are 5/16" skip to Step18.*

14. Position the center plate on the existing mounting holes and temporarily secure with bolts or other suitable fixture.
15. Match drill tank to plate four (4) places using a ϕ 0.313 drill bit.
16. Remove plate and fixture.
17. Clean up debris and deburr holes.
18. Install plate to tank with hardware supplied in kit as shown in Figure 2 with 732 Sealant.
19. Clock eyebolts as shown in Figure 2 for the specific landing gear configuration.
    a. Clock both eyebolts 32° from bracket centerline for Aeronautics Accessories Gear.
    b. Clock both eyebolts 37° from bracket centerline for Bell Gear.
20. Torque hardware in accordance with system MM or ICA.
21. Wipe off excess sealant.
22. Remove aft external attachment brackets by reaching inside tank to access nuts, washers and bolts securing backup angles (Figure 3).

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

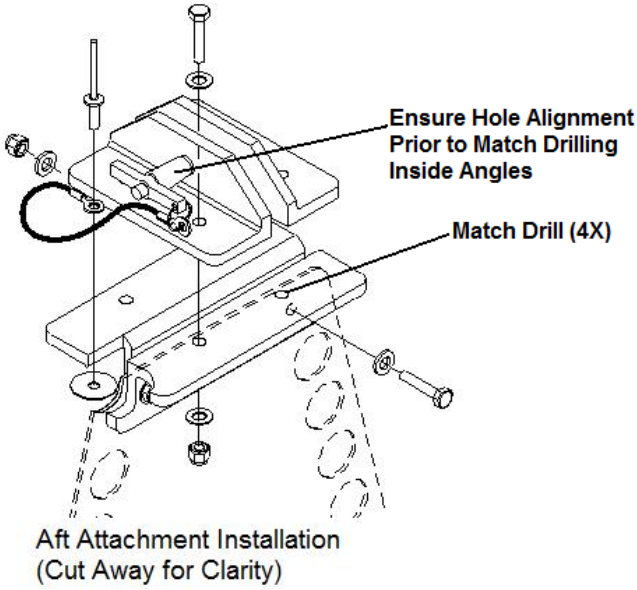

Figure 3: Aft Attachment Details (Typical)

23. Remove brackets and angles from tank. Discard.
24. Thoroughly clean tank to bracket interface with acetone.
25. Temporarily install interior angles (308-302006-001) as shown in Figure 3 using supplied hardware or other fixture.
26. Position exterior angles (308-302005-001) over mounting holes, install quick release pin or other 5/16” hardware to ensure alignment and match drill ϕ 0.255” mounting holes (2 places per angle) through interior angles (Figure 3).
27. Remove brackets and fixtures.
28. Clean up debris and deburr holes.
29. Install angles to tank with hardware supplied in kit as shown in Figure 3 using 732 Sealant.
30. Torque hardware in accordance with system MM or ICA.
31. Wipe up excess sealant.

NOTE: *On the Model 208 spray system, support the water pump before proceeding.*

32. For the 208 system, remove pump support rod (650-912004-500) shown in Figure 4 by removing bolts, washers and nuts at each end. Discard rod and hardware.

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

33. Inspect pump mounting bracket and clamps at pump, replace if damaged or corroded.

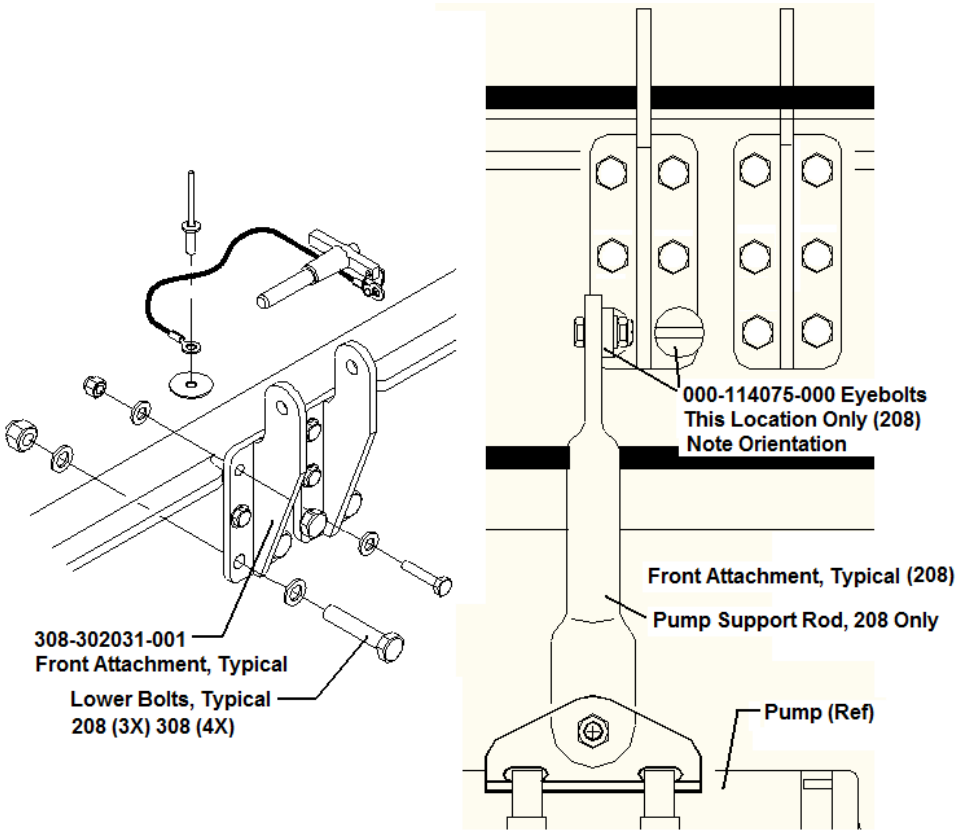

Figure 4: Front Tank Attachment Details

34. Remove front attachment brackets by reaching inside tank and removing nuts, washers, and backup plate. Discard.

35. Remove brackets, bolts and eyebolts (208 only). Discard.

36. Thoroughly clean tank to bracket interface with acetone.

37. Position replacement brackets on tank as shown in Figure 4 with 732 Sealant and secure with enclosed bolts.

38. For the pump support bracket, clock the eyebolts as shown in Figure 4, the outer most eyebolt is vertical for the pump support and the inner eyebolt is horizontal.

39. Secure with supplied washers and nuts.

40. Torque hardware in accordance with system MM or ICA.

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

41. Wipe up excess sealant.

42. Install 650-912004-500 pump support rod in outboard (vertical) eyebolt as shown in Figure 4 with 000-110279-000 Bolt, two (2) 000-112120-000 washers, and 000-111075-000 nuts.

43. Attach lower end of pump support rod to pump bracket with 000-110140-000 bolt, two (2) 000-112100-000 washers and 000-111045-000 nut.

44. Torque hardware in accordance with system MM or ICA.

45. Remove two (2) bolts washers and nuts securing each aft hardpoint bracket to rotorcraft at cross tube as shown in Figure 5.

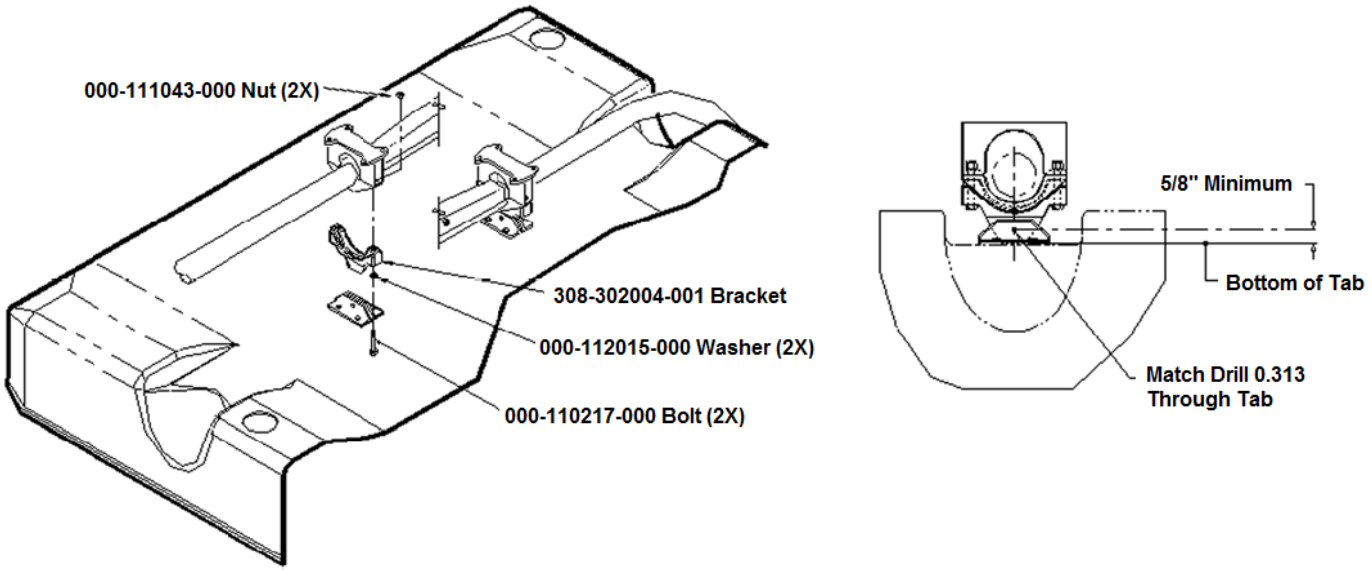

Figure 5: Aft Upper Hardpoint Details

46. Remove bracket and inspect attachment point. Treat any corrosion in accordance with Bell MM.

47. With an indelible ink pin or other suitable marking device, draw a line on the tab of the 308-302004-001 bracket that measures 5/8” from the bottom of the tab as shown in Figure 5 for reference in a future step.

48. Install each replacement bracket 308-302004-001 with two (2) 000-110217-000 bolts, 000-112015-000 washers and 000-111043-000 nuts.

49. Torque hardware in accordance with System MM.

50. Leak check tank prior to reinstallation

51. Install curved links and support rods to front hardpoint attachments at landing gear cross tube as follows:

    a. Bell Gear:

        i. Install each 308-302021-001 curved link to rotorcraft outboard fitting eyebolt with 000-114155-000 clevis pin, two (2) 000-112120-000 washers and a 000-114270-000 cotter pin.

        ii. Install 308-302032-003 support rod to inboard eyebolt with 000-114435-000 quick release pin.

    b. Aeronautics Accessories Gear:

        i. Install each 308-302021-001 curved link to rotorcraft inboard fitting eyebolt with 000-114080-000 eyebolt, 000-112120-000 washer and a 000-111075-000 lock nut.

        ii. Tighten nut so that eyebolt still rotates, do not torque at this step.

        iii. Install 308-302032-002 support rod to eyebolt on curved link with 000-114150-000 clevis pin and 000-114270-000 cotter pin.

52. Position tank under rotorcraft and for installation in accordance with MM 210-102005-001 or 310-102005-001.

53. Connect support rods to center tank attachment eyebolts with quick release pins replaced previously in Step 10.

54. Connect curved link to forward tank attachment fittings with quick release pins replaced previously in Step 10.

    a. Bell Gear:

        i. Attach to outboard bracket.

    b. Aeronautics Accessories Gear:

        i. Attach to inboard bracket.

        ii. Torque eyebolt installed in Step b, ii in accordance with System MM.

55. Lift tank into position at aft support fittings.

56. Support aft end of tank.

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com

57. Position tank brackets over aft hard point as shown in Figure 5. Check for proper distance from bottom of tab with marks made in Step 10.

58. Match drill 308-302004-001 hardpoint fittings ϕ 0.313 to aft brackets as shown in Figure 5.

59. Secure with quick release pins.

60. Adjust support rod turnbuckles so that the clevis ends line up with the eyebolts and the quick release pins can be installed. Ensure thread engagement through witness hole in turnbuckle, both ends. If adjustment cannot be made to assembly in order to have threads visible in witness hole, contact Simplex Manufacturing for resolution.

61. Tighten jam nut on turnbuckle to lock position and safety wire jam nuts.

62. Reinstall equipment shroud.

63. Complete tank installation in accordance with System MM.

64. Make the appropriate logbook entries and return rotorcraft to service.

13340 NE Whitaker Way, Portland Oregon USA 97230
Phone: +1 (503) 257-3511 **Fax:** +1 (503) 257-8556
mail@simplexmfg.com