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AVIONICS • INTERIOR • MAINTENANCE • PAINT REFINISHING

## SERVICE LETTER 265

### HYDRAULIC POWER PACK AT FUSELAGE STATION 67.88

| Aircraft Makes/Model(s):        | Float Model(s): | Compliance: Optional | By: MAS       |
|---------------------------------|-----------------|----------------------|---------------|
| Air Tractor<br>AT-802 & AT-802A | 10000A          | Part Number: 1012632 | Approved: DRH |
|                                 |                 | Date: 1/14/2025      | Revision: B   |

### LOG OF REVISIONS

| Revision | Description  | Date       |
|----------|--|------------|
| A        | Initial release  | 11/12/2024 |
| B        | Updated shop hours, added 1012632-02 kit. Updated work instructions, added images, renumbered figures and steps. | 1/14/2025  |

FAA approval has been obtained for technical data in this publication that affects STC or TSO design compliance.

#### EFFECTIVITY:

This service letter applies to Air Tractor AT-802 and AT-802A models with Wipline 10000 amphibian floats with hydraulic power packs at fuselage station 159.50 installed per STC SA01795CH.

#### COMPLIANCE:

Compliance is optional.

#### BACKGROUND:

In an effort to move the center of gravity forward, the hydraulic power pack is removed from fuselage station 159.50 and a new hydraulic power pack is now located at fuselage station 67.88.

#### COMPLIANCE METHOD:

Remove and install parts in accordance with work instructions in this service letter.

#### APPROXIMATE SHOP HOURS:

**Manual Water Retract Only** - Approximately 8 labor hours to complete per aircraft.

**Electric Water Retract Only** - Approximately 11 labor hours to complete per aircraft.

#### WEIGHT AND BALANCE:

Old hydraulic power pack installation: Weight -57.00, Arm 146.00

New hydraulic power pack installation: Weight 54.00, Arm 58.50

#### WARRANTY INFORMATION:

This service letter does not include warranty for labor and parts.

#### TECHNICAL DATA:

Copies of this service letter, associated service kit (if applicable), float service manual, and float parts manual are available by contacting Wipaire customer service.

1700 Henry Ave - Fleming Field (KSGS), South St. Paul, MN 55075

Phone: 651.451.1205 | Fax: 651.457.7858

www.wipaire.com

| <b>MANUAL WATER RUDDER RETRACT ONLY</b>                 |            |                    |  |
|---|------------|--------------------|--|
| <b>SERVICE LETTER KIT 1012632-01 (ONE PER AIRCRAFT)</b> |            |                    |  |
| <b>ITEM</b>   | <b>QTY</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                                     |
| 1   | 1          | 1011361-08         | HYDRAULIC LINE, PUMP TO COCKPIT FLOOR                  |
| 2   | 1          | 1011361-09         | HYDRAULIC LINE, RESERVOIR TO COCKPIT FLOOR             |
| 3   | 1          | 1011361-10         | HYDRAULIC LINE, SCOOP UP, DIR. VALVE TO LEFT FUSELAGE  |
| 4   | 1          | 1011361-11         | HYDRAULIC LINE, SCOOP DN, DIR. VALVE TO LEFT FUSELAGE  |
| 5   | 1          | 1011361-12         | HYDRAULIC LINE, SCOOP UP, DIR. VALVE TO RIGHT FUSELAGE |
| 6   | 1          | 1011361-13         | HYDRAULIC LINE, SCOOP DN, DIR. VALVE TO RIGHT FUSELAGE |
| 7   | 1          | 1012611            | ASSEMBLY, HYDRAULIC POWER PACK                         |
| 8   | 1          | 1012616            | ASSEMBLY, DIRECTIONAL VALVE                            |
| 9   | 1          | 1012618            | ASSEMBLY, FUSELAGE, UPPER MOUNT                        |
| 10  | 1          | 1012619            | ASSEMBLY, HYDRAULIC LINE, PUMP TO DIR. VALVE, PRESSURE |
| 11  | 1          | 1012620            | ASSEMBLY, HYDRAULIC LINE, PUMP TO DIR. VALVE, RETURN   |
| 12  | 4          | 1012625            | SPACER   |
| 13  | 2          | 1012626            | MOUNTING SUPPORT BRACKET, UPPER                        |
| 14  | 2          | 1012627            | MOUNTING SUPPORT BRACKET, LOWER                        |
| 15  | 1          | 1012645-T1         | TOOLING, DRILL TEMPLATE, HYD. PUMP                     |
| 16  | 1          | 1012645-T2         | TOOLING, DRILL TEMPLATE, DIRECTIONAL VALVE             |
| 17  | 2          | 10A12214-007       | CLAMP, BRACE   |
| 18  | 4          | AN3-16A            | BOLT, 10-32, 1.375 GRIP, UNDRILLED, STEEL              |
| 19  | 6          | AN3-4A             | BOLT, 10-32, 1.375 GRIP, UNDRILLED, STEEL              |
| 20  | 6          | AN3-5A             | BOLT, 10-32, 0.25 GRIP, UNDRILLED, STEEL               |
| 21  | 4          | AN4-16A            | BOLT, 1/4-28, 1.1875 GRIP, UNDRILLED, STEEL            |
| 22  | 2          | AN4-17A            | BOLT, 1/4-28, 1.4375 GRIP, UNDRILLED, STEEL            |
| 23  | 4          | AN4-5A             | BOLT, 1/4-28, 0.1875 GRIP, UNDRILLED, STEEL            |
| 24  | 2          | AN742D14           | CLAMP, LOOP  |
| 25  | 12         | MS21044N3          | NUT, LOCKING, REGULAR HEIGHT, 10-32 UNF                |
| 26  | 4          | MS21044N4          | NUT, LOCKING, REGULAR HEIGHT, 1/4-28 UNF               |
| 27  | 4          | MS21919WDG12       | CLAMP, LOOP, CUSHIONED, 3/4 TUBE OD                    |
| 28  | 2          | MS21919WDG6        | CLAMP, LOOP, CUSHIONED, 3/8 TUBE OD                    |
| 29  | 4          | MS21919WDG8        | CLAMP, LOOP, CUSHIONED, 1/2 TUBE OD                    |
| 30  | 1          | MS25036-112        | RING TERMINAL, #10 STUD, 10-12 AWG                     |
| 31  | 2          | MS25036-113        | RING TERMINAL, 5/16 STUD, 10-12 AWG                    |
| 32  | 16         | NAS1149F0332P      | WASHER, 0.203 ID, 0.032 THK, STEEL                     |
| 33  | 8          | NAS1149F0363P      | WASHER, 0.203 ID, 0.063 THK, STEEL                     |
| 34  | 8          | NAS1149F0432P      | WASHER, 0.265 ID, 0.032 THK, STEEL                     |
| 35  | 4          | NAS1149F0463P      | WASHER, 0.265 ID, 0.063 THK, STEEL                     |

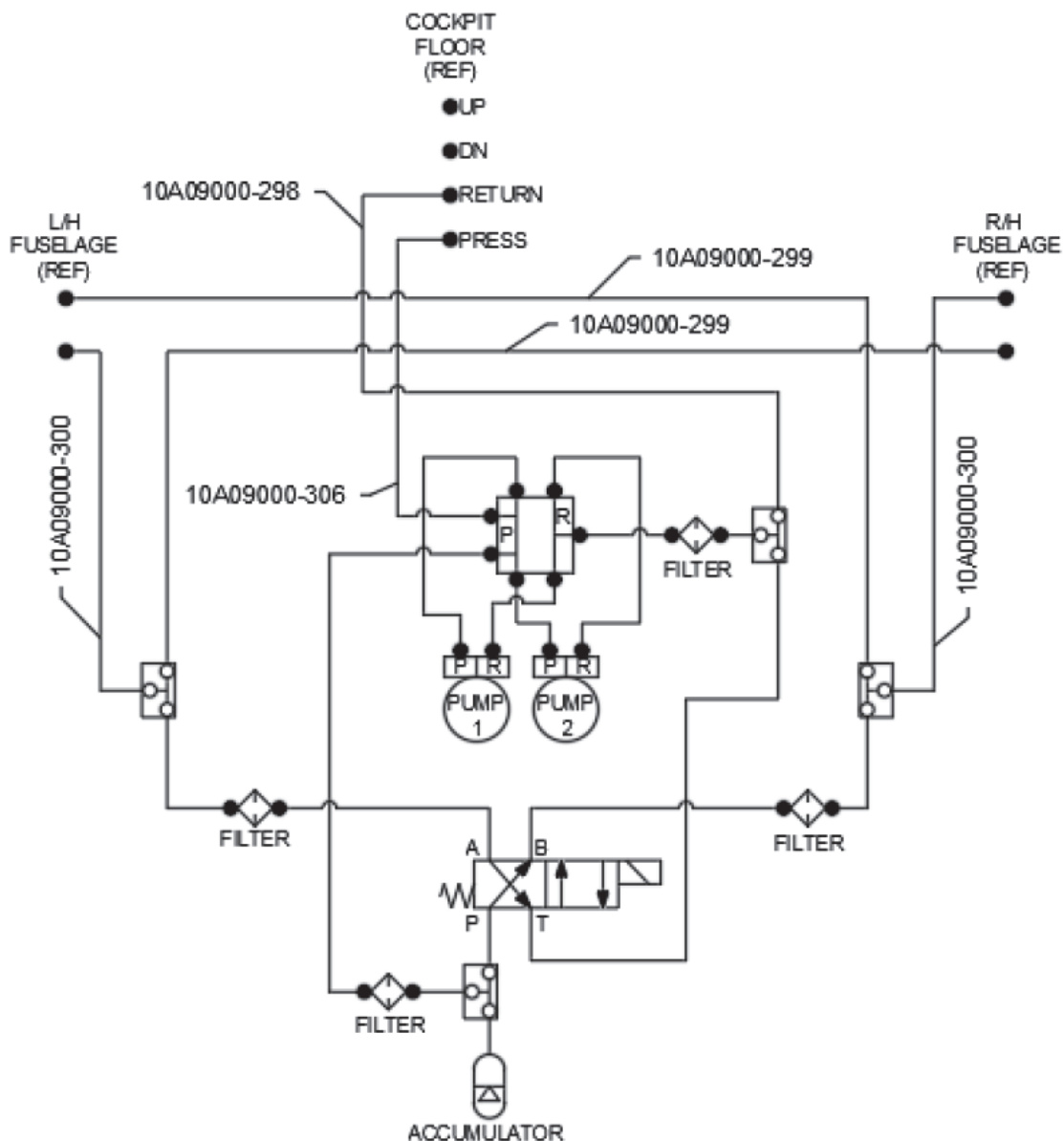
| <b>ELECTRIC WATER RUDDER RETRACT ONLY</b>               |            |                    |  |
|---|------------|--------------------|--|
| <b>SERVICE LETTER KIT 1012632-02 (ONE PER AIRCRAFT)</b> |            |                    |  |
| <b>ITEM</b>   | <b>QTY</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                                     |
| 1   | 1          | 1011361-08         | HYDRAULIC LINE, PUMP TO COCKPIT FLOOR                  |
| 2   | 1          | 1011361-09         | HYDRAULIC LINE, RESERVOIR TO COCKPIT FLOOR             |
| 3   | 1          | 1011361-10         | HYDRAULIC LINE, SCOOP UP, DIR. VALVE TO LEFT FUSELAGE  |
| 4   | 1          | 1011361-11         | HYDRAULIC LINE, SCOOP DN, DIR. VALVE TO LEFT FUSELAGE  |
| 5   | 1          | 1011361-12         | HYDRAULIC LINE, SCOOP UP, DIR. VALVE TO RIGHT FUSELAGE |
| 6   | 1          | 1011361-13         | HYDRAULIC LINE, SCOOP DN, DIR. VALVE TO RIGHT FUSELAGE |
| 7   | 1          | 1012611            | ASSEMBLY, HYDRAULIC POWER PACK                         |
| 8   | 1          | 1012616            | ASSEMBLY, DIRECTIONAL VALVE                            |
| 9   | 1          | 1012618            | ASSEMBLY, FUSELAGE, UPPER MOUNT                        |
| 10  | 1          | 1012619            | ASSEMBLY, HYDRAULIC LINE, PUMP TO DIR. VALVE, PRESSURE |
| 11  | 1          | 1012620            | ASSEMBLY, HYDRAULIC LINE, PUMP TO DIR. VALVE, RETURN   |
| 12  | 4          | 1012625            | SPACER   |
| 13  | 2          | 1012626            | MOUNTING SUPPORT BRACKET, UPPER                        |
| 14  | 2          | 1012627            | MOUNTING SUPPORT BRACKET, LOWER                        |
| 15  | 1          | 1012645-T1         | TOOLING, DRILL TEMPLATE, HYD. PUMP                     |
| 16  | 1          | 1012645-T2         | TOOLING, DRILL TEMPLATE, DIRECTIONAL VALVE             |
| 17  | 2          | 10A12214-007       | CLAMP, BRACE   |
| 18  | 4          | AN3-16A            | BOLT, 10-32, 1.375 GRIP, UNDRILLED, STEEL              |
| 19  | 6          | AN3-4A             | BOLT, 10-32, 1.375 GRIP, UNDRILLED, STEEL              |
| 20  | 6          | AN3-5A             | BOLT, 10-32, 0.25 GRIP, UNDRILLED, STEEL               |
| 21  | 4          | AN4-16A            | BOLT, 1/4-28, 1.1875 GRIP, UNDRILLED, STEEL            |
| 22  | 2          | AN4-17A            | BOLT, 1/4-28, 1.4375 GRIP, UNDRILLED, STEEL            |
| 23  | 4          | AN4-5A             | BOLT, 1/4-28, 0.1875 GRIP, UNDRILLED, STEEL            |
| 24  | 2          | AN742D14           | CLAMP, LOOP  |
| 25  | 12         | MS21044N3          | NUT, LOCKING, REGULAR HEIGHT, 10-32 UNF                |
| 26  | 4          | MS21044N4          | NUT, LOCKING, REGULAR HEIGHT, 1/4-28 UNF               |
| 27  | 4          | MS21919WDG12       | CLAMP, LOOP, CUSHIONED, 3/4 TUBE OD                    |
| 28  | 2          | MS21919WDG6        | CLAMP, LOOP, CUSHIONED, 3/8 TUBE OD                    |
| 29  | 4          | MS21919WDG8        | CLAMP, LOOP, CUSHIONED, 1/2 TUBE OD                    |
| 30  | 1          | MS25036-112        | RING TERMINAL, #10 STUD, 10-12 AWG                     |
| 31  | 2          | MS25036-113        | RING TERMINAL, 5/16 STUD, 10-12 AWG                    |
| 32  | 16         | NAS1149F0332P      | WASHER, 0.203 ID, 0.032 THK, STEEL                     |
| 33  | 8          | NAS1149F0363P      | WASHER, 0.203 ID, 0.063 THK, STEEL                     |
| 34  | 8          | NAS1149F0432P      | WASHER, 0.265 ID, 0.032 THK, STEEL                     |
| 35  | 4          | NAS1149F0463P      | WASHER, 0.265 ID, 0.063 THK, STEEL                     |
| 36  | 1          | 1012652            | ANGLE, RETRACT MOTOR SUPPORT                           |
| 37  | 2          | 1012713            | SPACER, 5 DEG, ELECTRIC WATER RUDDER RETRACT           |
| 38  | 1          | 10A08000-166       | CABLE, RETRACT   |
| 39  | 2          | AN44-10A           | EYE BOLT   |
| 40  | 2          | AN43B-10A          | EYEBOLT, 10-32 SHANK, 10 HOLE, 0.563 GRIP              |
| 41  | 1          | AN525-10R14        | SCREW, WASHER HEAD                                     |



| ELECTRIC WATER RUDDER RETRACT ONLY               |     |               |   |
|--|-----|---------------|---|
| SERVICE LETTER KIT 1012632-02 (ONE PER AIRCRAFT) |     |               |   |
| ITEM   | QTY | PART NUMBER   | DESCRIPTION                             |
| 42   | 1   | AN970-3       | WASHER, .203 ID, .875 OD, .063 THK      |
| 43   | 1   | MS20664C3     | BALL END, 3/32 WIRE ROPE, STAINLESS     |
| 44   | 1   | MS21044N3     | NUT, LOCKING, REGULAR HEIGHT, 10-32 UNF |
| 45   | 1   | MS21919WDG10  | CLAMP, LOOP, CUSHIONED, 5/8 TUBE OD     |
| 46   | 4   | NAS1149F0363P | WASHER, 0.265 ID, 0.063 THK, STEEL      |
| 47   | 2   | NAS43DD4-32   | SPACER                                  |

## Work Instructions

1. Place aircraft on stands, per the appropriate service manual.
2. Pull circuit breakers “PUMP 1” and “PUMP 2”.
3. Relieve pressure in the hydraulic system by moving the gear selector to the center position.
4. Removing hydraulic power pack system (10A12000-079) at fuselage station 159.50:
  - a. Remove hydraulic line (10A09000-306) from hydraulic pump pressure fitting to pressure bulkhead fitting on cockpit floor.
  - b. Remove hydraulic line (10A09000-298) from hydraulic pump spin on filter tee fitting to return bulkhead fitting on cockpit floor.
  - c. Remove all four hydraulic lines (10A09000-299 and 10A09000-300) from tee fittings on accumulator assembly to bulkhead fittings on the fuselage.



- d. Remove power wires (GA1 and GA4) from both solenoids on top of the power pack assembly.
  - e. Remove ground wire (GA20) from the ground point on the hydraulic power pack assembly.
  - f. Unplug the two pin connector (GE10 and GE11) from the top of the hydraulic power pack assembly.
  - g. Unplug the two pin connector (P-22) from the directional valve.
  - h. Remove the two clamps (MS21919WDG10) at the bottom of the hydraulic power pack that attaches the pump to the fuselage cross member.
  - i. Remove hydraulic power pack assembly by removing the hardware from the four pump mount clamps.
  - j. Reroute wire harness GA1, GA4, GA20, GE10, GE11 and plug P-22 from back of fuselage to under the cockpit floor at fuselage station 67.88.
5. Modify electric water rudder retract motor mounting and routing. If aircraft is equipped with a manual water rudder retract system, skip this step, and continue on to step 6.
- a. Make sure water rudders are set in the down position to relieve cable tension before disconnecting the cables from the electric motor.
  - b. Pull water rudder circuit breaker "W. R. RETRACT" and disconnect wires from the retract motor assembly.
  - c. Disconnect cables from the retract motor and remove the retract motor and support angle 1001097 from the forward baggage wall.
  - d. Use location tool 1012714 and locate the "#8 SCREW" hole onto the existing #8 screw from forward left baggage wall attach doubler. Locate 60928-1 clamp assembly onto diagonal tube and 0.25 holes in tool 1012714. Match drill the 0.25 holes through forward baggage wall. Dimensions shown in Figure 1 can be used if 1012714 tool is unavailable to make your own tool or locate the clamp by hand.
  - e. Locate new motor support angle 1012652 by matching the 0.25 holes drilled in the previous step and match drill the 0.33 holes through forward baggage wall.

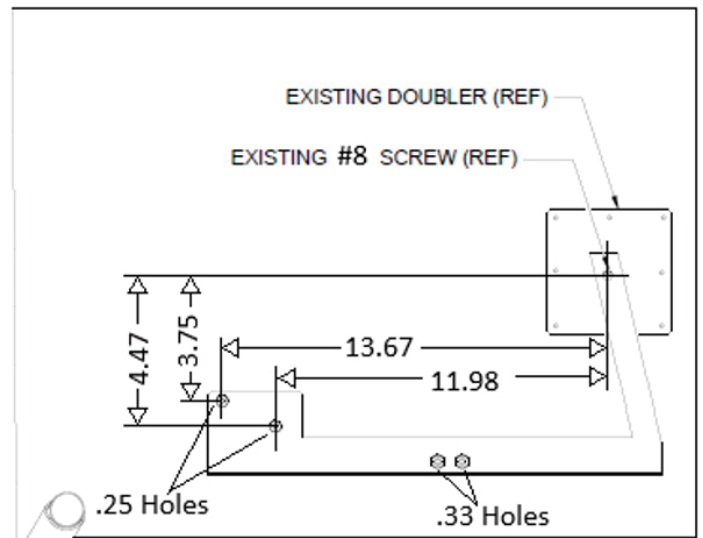
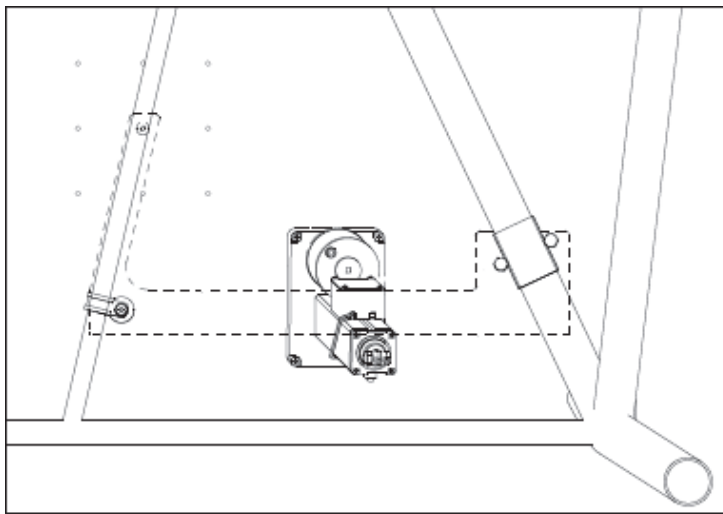
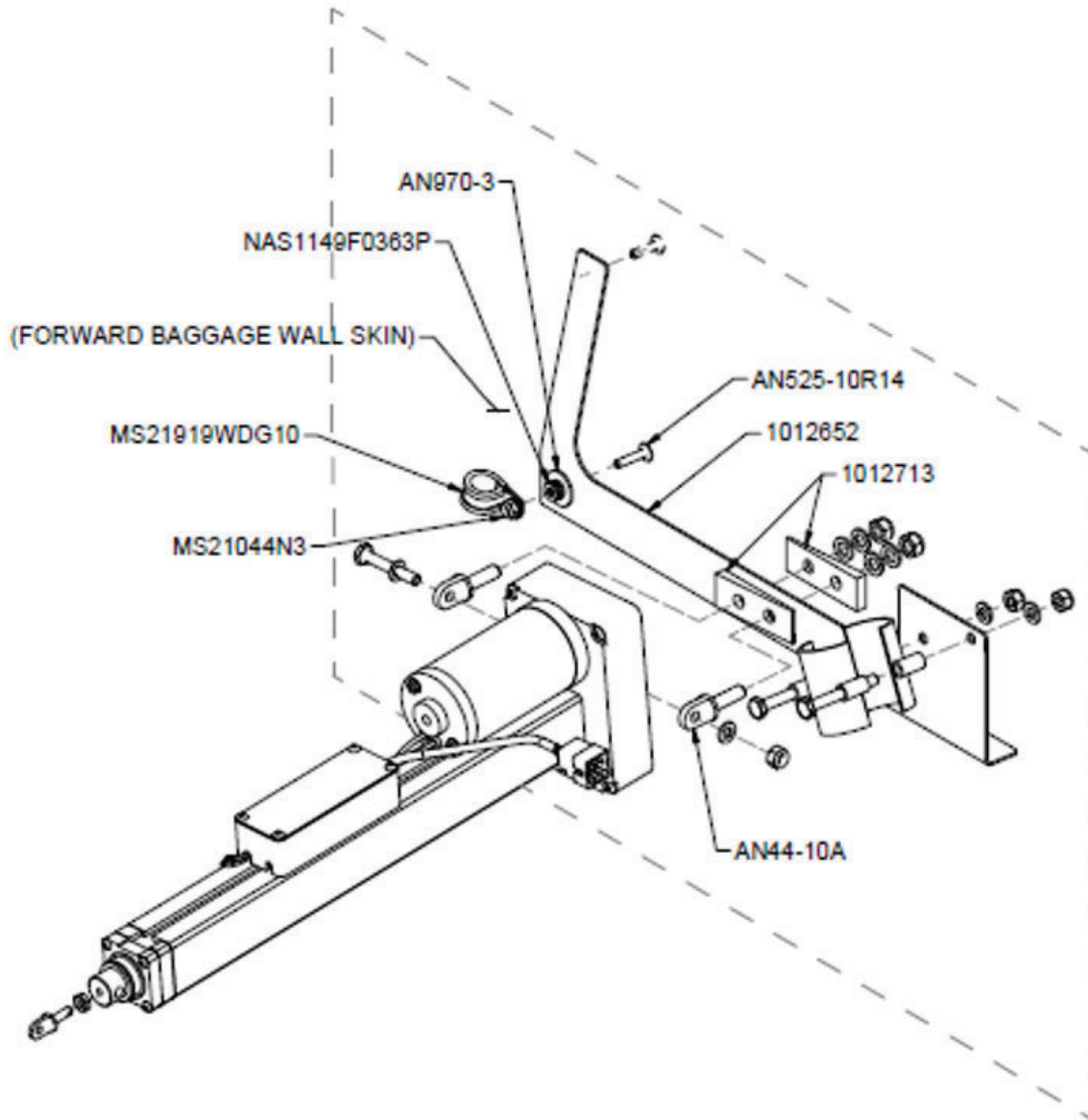


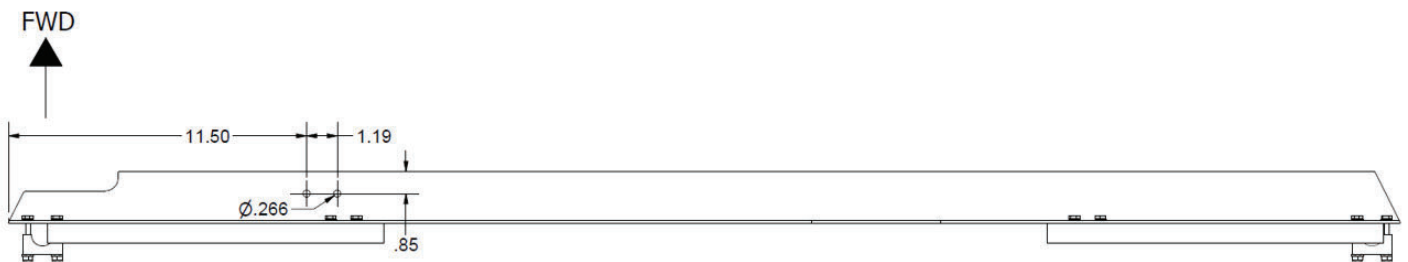
FIGURE 1

- f. When reattaching the electric retract motor, include tapered spacers (1012713) such that the electric motor angles 5 degrees outboard when attached. To properly position the spacers, ensure that the large radius edge is away from the fwd baggage wall skin and the support angle. Replace existing eye bolts with longer AN44-10A eye bolts.



**FIGURE 2**

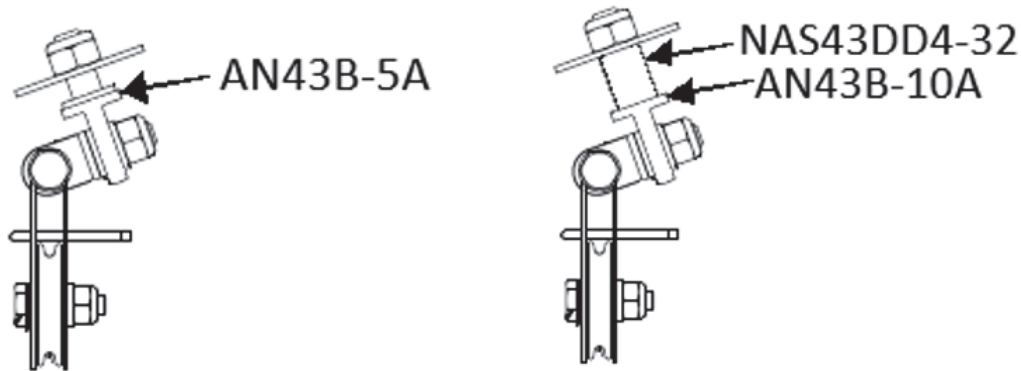
g. Drill new pulley assembly attachment holes into steering cable angle 10A12357-086 or 1012654 per dimensions shown in Figure 3.



**FIGURE 3**



h. When replacing the pulley assemblies in the newly located holes. Replace the AN43B-5A eye bolts with AN43B-10A eyebolts. Add spacers NAS43DD4-32 on the bolts below the angle.

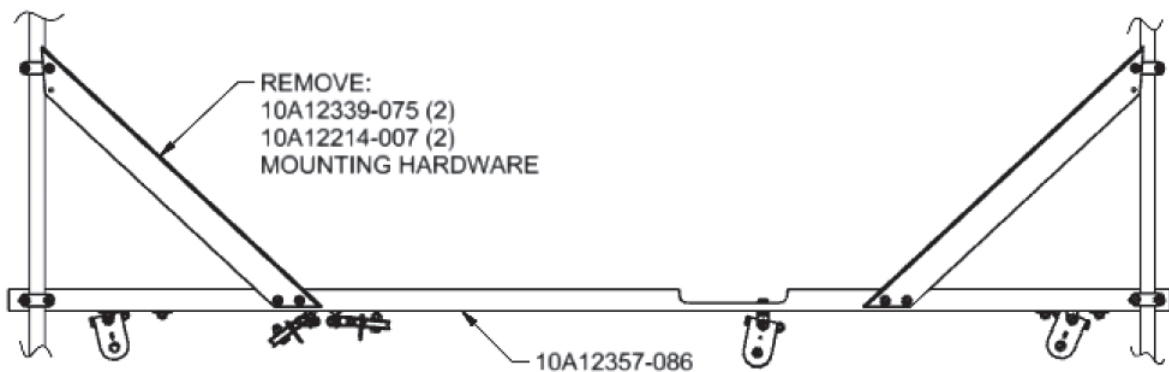


**FIGURE 4**

- i. After relocating the pulleys, the existing LH cable is too long, and the existing RH cable is short.
  - a. The cable running to the left float must be trimmed to shorten.
    - i. Trim cable from the fork end at the water rudder to the correct length and attach new ball end (MS20664C3).
    - ii. Reposition auxiliary pulley kit 1001531 for proper cable routing.
  - b. The cable running to the right float must be replaced with a longer cable.
    - i. Remove the existing cable assembly and use new 10A08000-166 cable assembly.
- j. Reconnect the motor connector, push in the breaker, and test to verify the water rudders actuate properly.
  - a. Adjust cable tension and position as needed.

6. Installing new hydraulic power pack at fuselage station 67.88:

- a. Remove the diagonal stiffeners (10A12339-075) located on the fuselage steering support angle (10A12357-086) at fuselage station 67.88. See Figure 5.



**FIGURE 5**

- b. Before installing the fuselage upper mount (1012618), attach the hydraulic lines, and clamps as shown in Figure 6. Do not tighten hardware at this point.



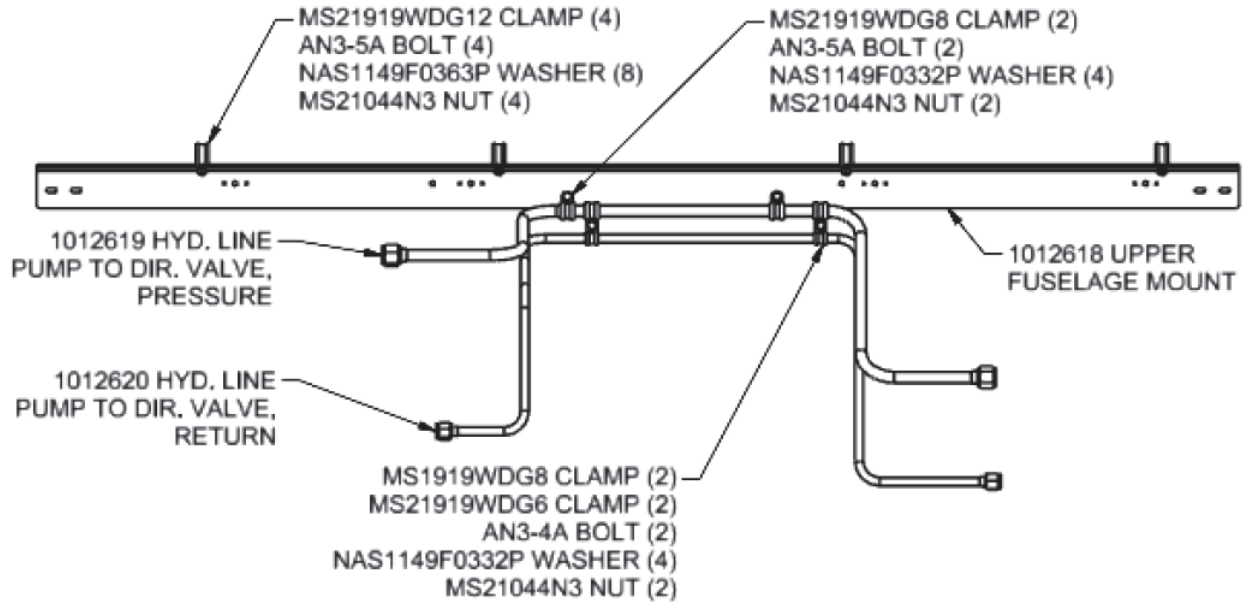


FIGURE 6

c. Locate upper fuselage mount (1012618) 15 1/8" up from fuselage steering support angle (10A12357-086). Secure upper fuselage mount, on each side, to airframe vertical tubing with hardware shown in Figure 7.

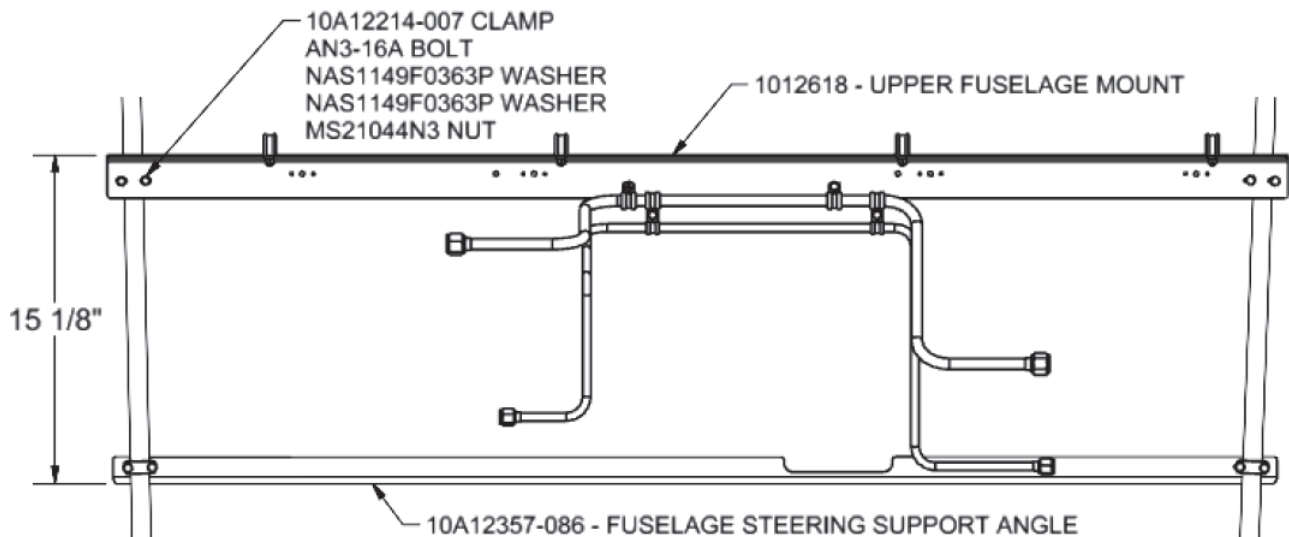


FIGURE 7

d. Install clamps (AN742D14) on horizontal cockpit floor tubing directly above the upper fuselage mount. Install mounting support bracket (1012626) onto clamp with supplied hardware. Install mounting support bracket (1012627) onto upper fuselage mount (1012618) with supplied hardware. Match drill holes from 1002626 into 1012627 and rivet together using MS20470AD3-5 rivets. See Figure 8.

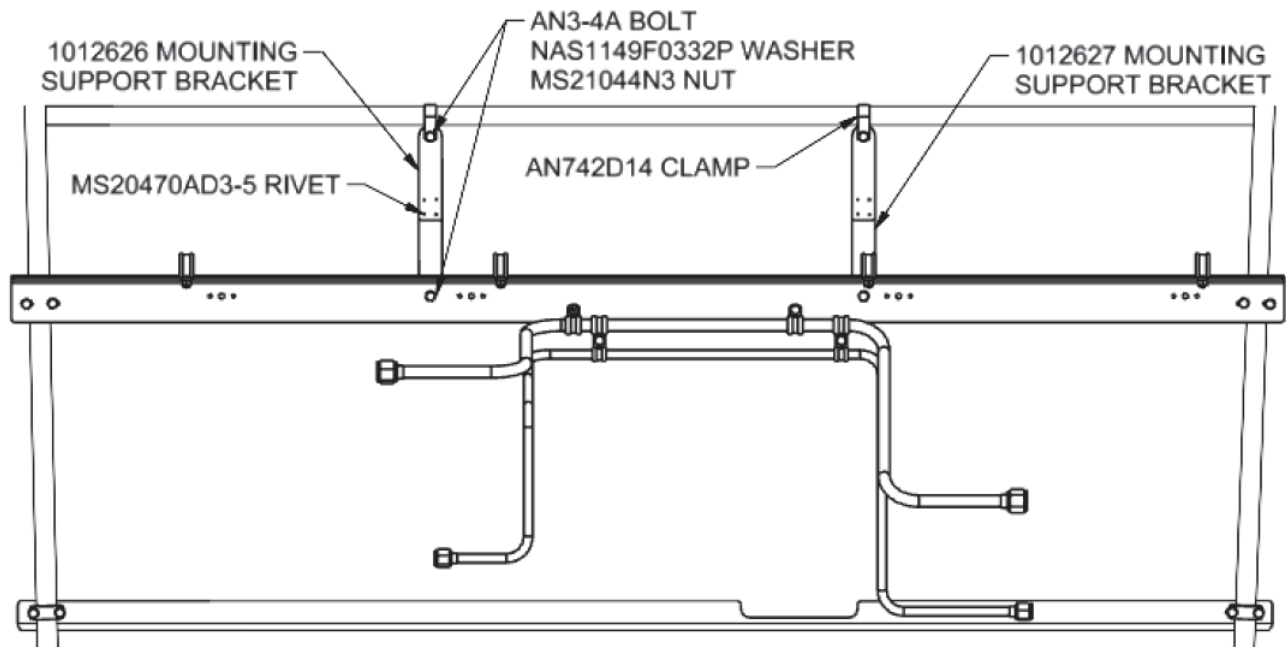


FIGURE 8

e. Install tooling 1012645-T1 and 1012645-T2 with AN4-5A bolts. Match drill four Ø.25 holes into fuselage steering support bracket (10A12357-086). Once holes are drilled, remove tooling. See Figure 9.

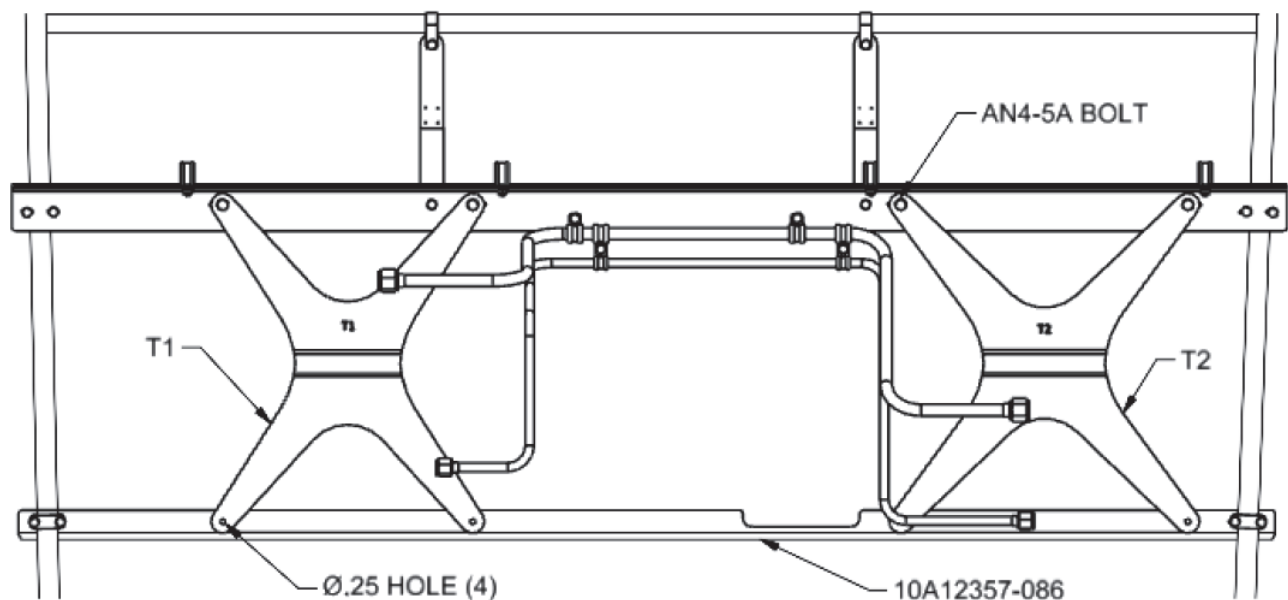
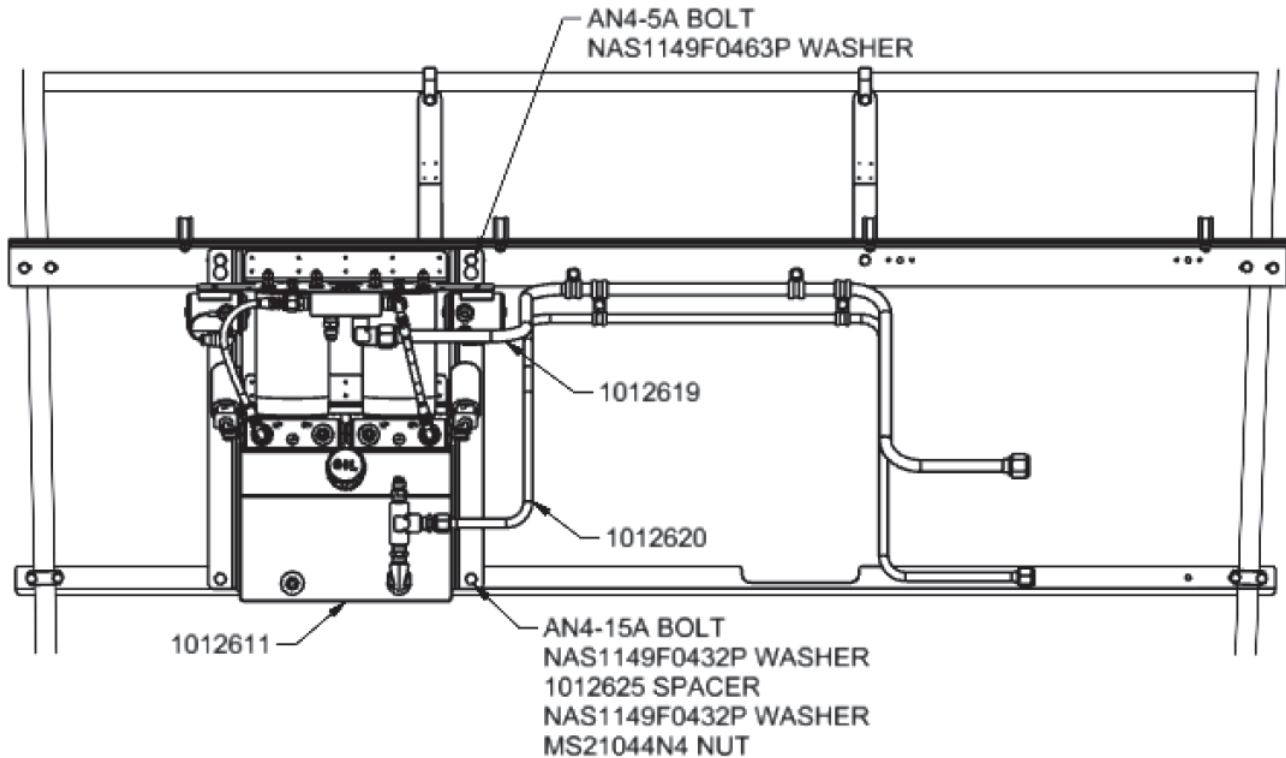


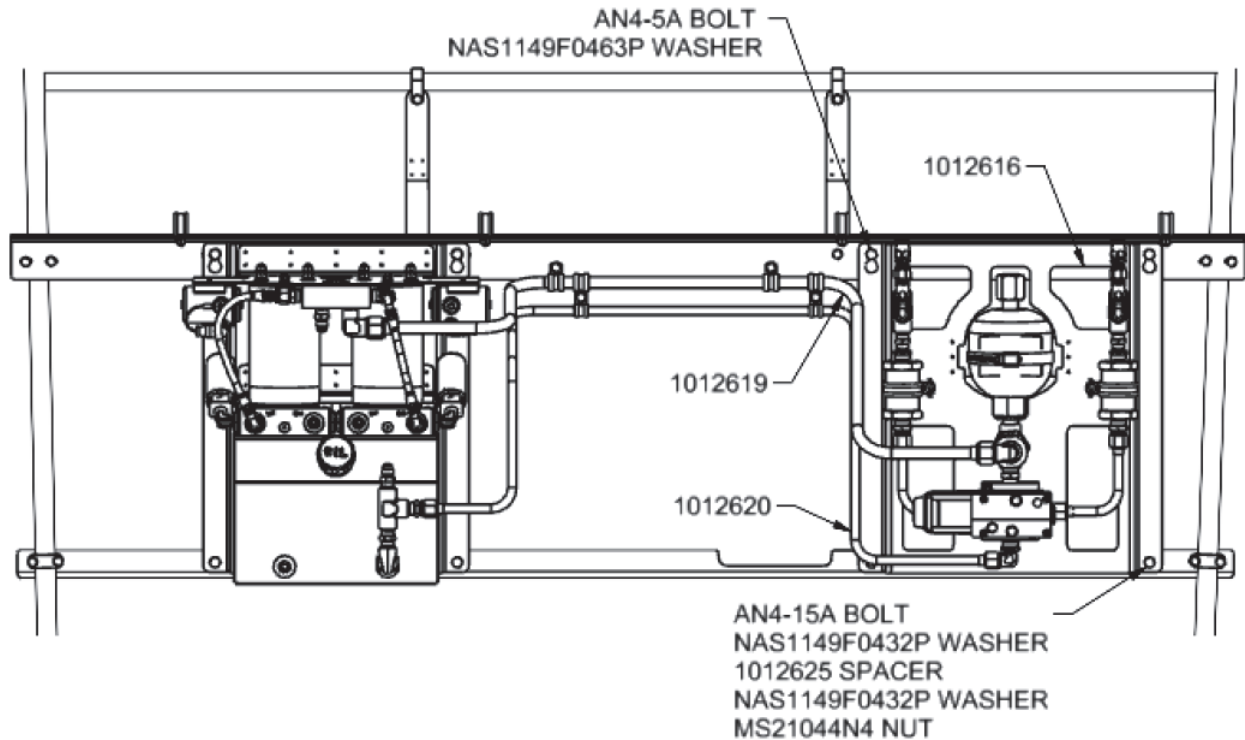
FIGURE 9

- f. Hand tight AN4-17A bolts (2) into the nut plates located on upper fuselage mount (1012618) for the hydraulic pump location. These bolts allow the hydraulic power pack assembly to hang on the mounts through the key holes in the hydraulic power pack mounting plate. Once the hydraulic power pack assembly (1012611) is hanging on the AN4-17A bolts, install spacers (1012625) between the hydraulic power pack assembly and the fuselage steering support angle (10A12357-086) and mounting hardware on the bottom of the hydraulic power pack assembly, as shown in Figure 10.
- g. One at a time, remove AN4-17A bolts and replace them with mounting hardware AN4-5A bolts and NAS1149F0463P washers.
- h. Connect hydraulic line (1012619) to the hydraulic pump manifold. Connect hydraulic line (1012620) to the #6 hydraulic fitting on the hydraulic reservoir.



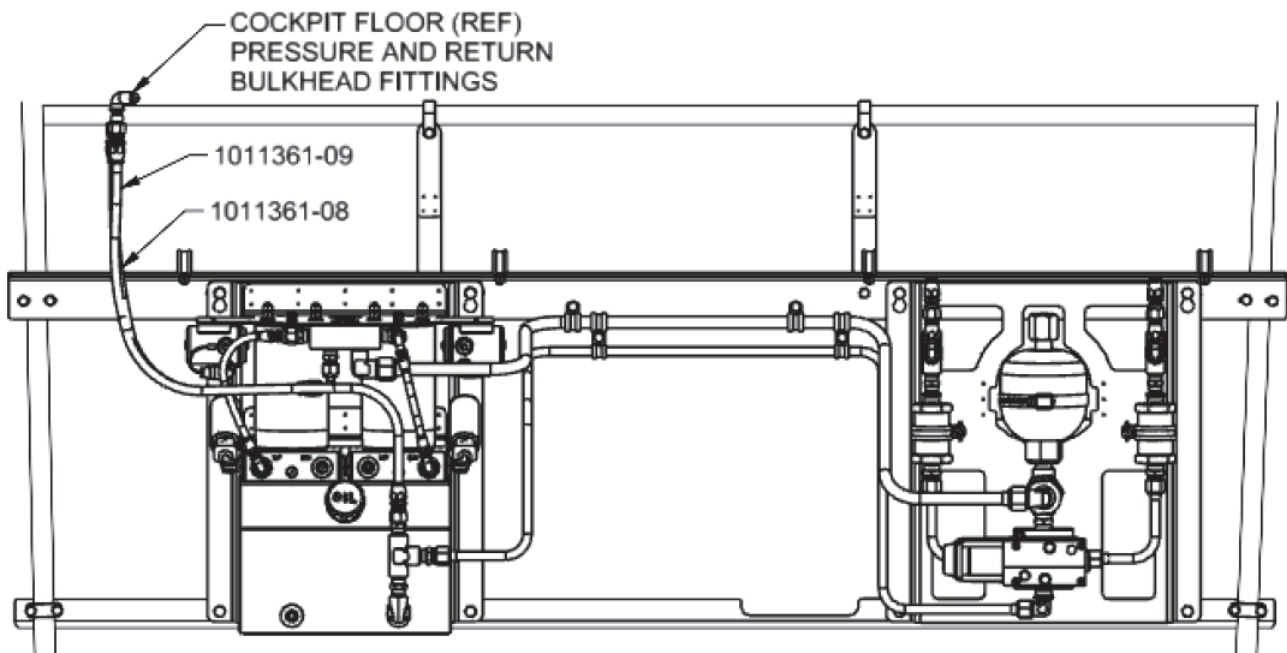
**FIGURE 10**

- i. Hand tight AN4-17A bolts (2) into the nut plates located on upper fuselage mount (1012618) for the directional valve location. These bolts allow the directional valve assembly to hang on the mounts through the key holes in the directional valve mounting plate. Once the directional valve assembly (1012616) is hanging on the AN4-17A bolts, install spacers (1012625) between the directional valve assembly and the fuselage steering support angle (10A12357-086) and mounting hardware on the bottom of the directional valve assembly, as shown in Figure 11.
- j. One at a time, remove AN4-17A bolts and replace them with mounting hardware AN4-5A bolts and NAS1149F0463P washers.
- k. Connect hydraulic line (1012619) to the #8 fitting on the inline filter. Connect hydraulic line (1012620) to the #6 hydraulic fitting on the directional valve port marked "T".



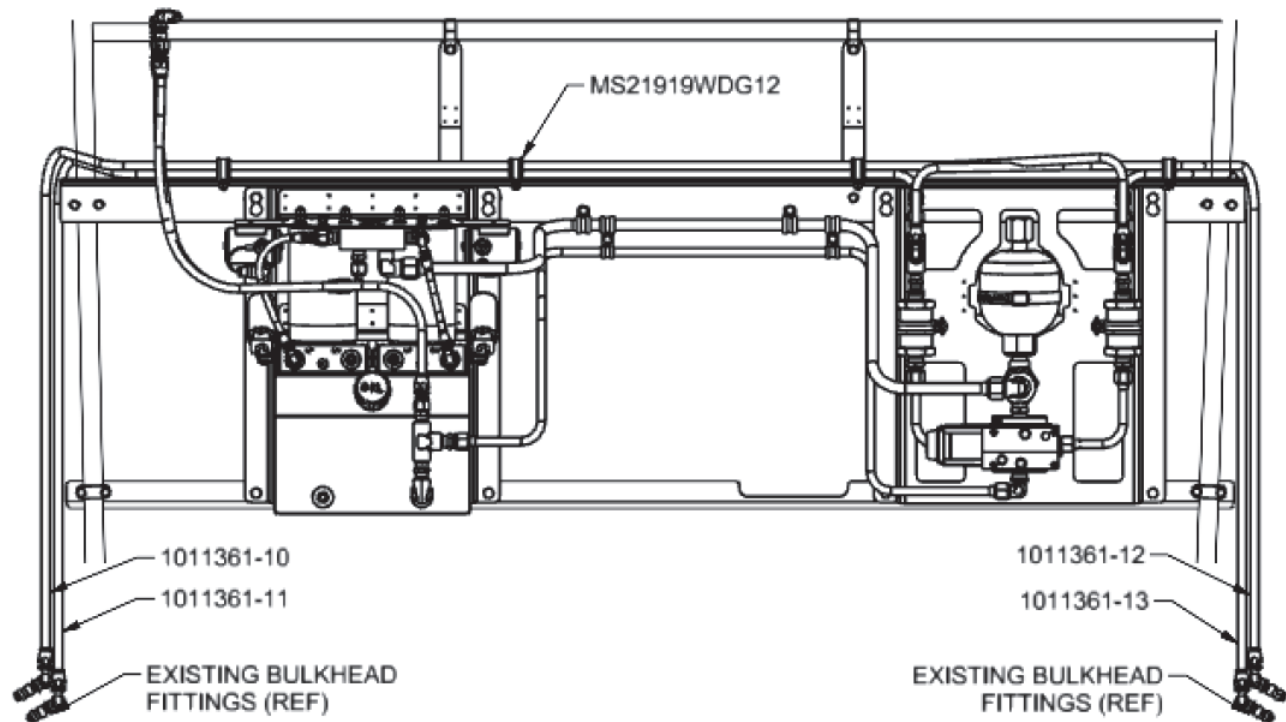
**FIGURE 11**

I. Install hydraulic line 1011361-08 from the hydraulic manifold fitting located under the top plate of the hydraulic powerpack assembly to the aft cockpit floor bulkhead fitting. Install hydraulic line 1011361-09 from the top fitting on the hydraulic reservoir to the second to last fitting of the cockpit floor bulkhead fittings. See Figure 12.

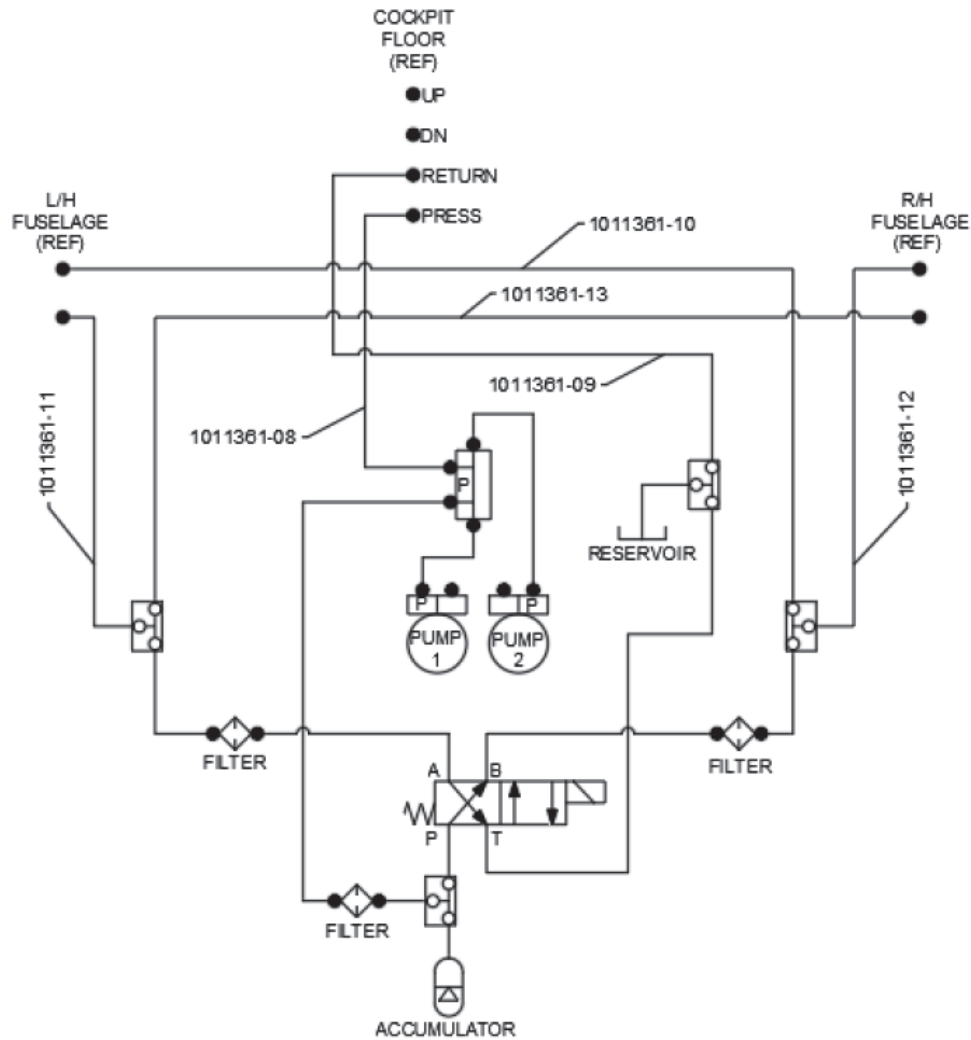


**FIGURE 12**

m. Install hydraulic lines 1011361-10, 1011361-11, 1011361-12 and 1011361-13 from the tee fittings at the top of the inline filters on the directional valve assembly through the clamps (MS21919WDG12) on the top fuselage mount angle to the existing bulkhead fittings on both sides of the fuselage. Tighten all clamps. See Figure 13 and hydraulic schematic.

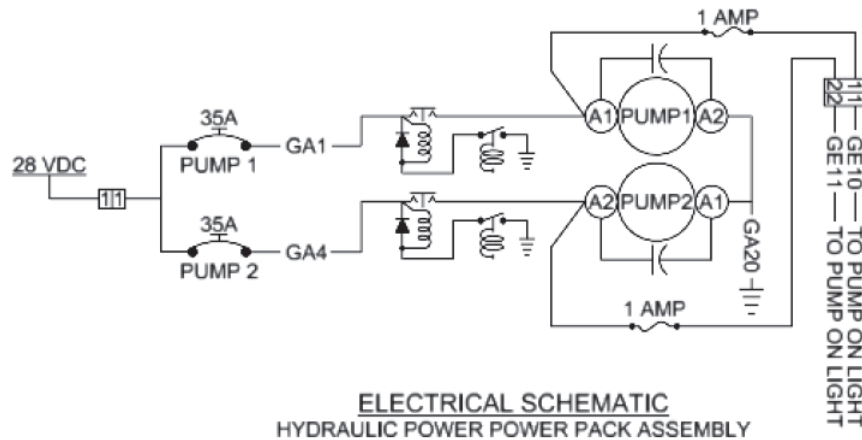


**FIGURE 13**



**HYDRAULIC SCHEMATIC**  
**HYDRAULIC SYSTEM AT F.S. 67.88**

- n. Route existing pump wires GA1, GA4, GA20 and GE10 / GE11 plug to the hydraulic power pack. Cut GA1 wire to length and install onto pump 1 electrical solenoid with MS25036-113 ring terminal. Cut GA4 to length and install onto pump 2 electrical solenoid with MS25036-113 ring terminal. Cut GA20 to length and install onto grounding point of hydraulic powerpack assembly with MS25036-112 ring terminal. Connect GE11 plug into plug on the hydraulic powerpack assembly. Zip tie remaining wires in the bundle.
- o. Connect existing P22 plug into the plug for the directional valve. Zip tie remaining wires in the bundle. See electrical schematic.
- p. Secure all hydraulic lines and electrical wires to adjacent fuselage or other structure to avoid chafing and from moving parts.



7. Aircraft closing and return to service
  - a. Bleed the hydraulic system and perform a gear swing in accordance with the appropriate service manual.
  - b. Remove jacks stand from floats per the appropriate service manual.

## Aircraft Closing & Return to Service

1. Bleed the hydraulic system and perform a gear swing in accordance with the appropriate service manual.
2. Remove jacks stand from floats per the appropriate service manual.
3. Upon completion of inspection, enter information in Aircraft Logbook for completion of Wipaire Service Letter 265.