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SERVICE LETTER 176

AT-802A ELECTRIC WATER RUDDER RETRACT

Aircraft Makes/Model(s):	Float Model(s):	Compliance: Optional	By: RCG
Air Tractor AT-802A	10000A	Part Number: 1009265	Approved: CAS
		Date: 10/26/2018	Revision: B

LOG OF REVISIONS

Revision	Description	Date
A	Initial release	5/29/2018
B	<ul style="list-style-type: none">Removed excess hardware provided in kitAdded diode to service letter kit	10/26/2018

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

EFFECTIVITY:

This service letter applies to the AT-802A with 10000 amphibious model floats installed per STCSA01795CH that have manual cable-operated water rudder retraction.

COMPLIANCE:

Optional Compliance.

BACKGROUND:

Wipaire has developed a service kit for retrofit of AT-802A aircraft to have electrically operated water rudder retraction, replacing the manual retraction lever.

COMPLIANCE METHOD:

Remove manual retraction components and install new kits in accordance per the Work Instruction section of this service letter.

APPROXIMATE SHOP HOURS:

Installing the electric water rudders will take approximately 15 labor hours to complete.

WARRANTY INFORMATION:

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

TECHNICAL DATA:

Copies of this service letter, associated service kit, float service manual, and float parts manual are available at www.wipaire.com.

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www.wipaire.com

ITEMS PROVIDED IN SERVICE KIT 1009265-01 (PER FLOAT SET)

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	1001475	KIT, RETRACT MOTOR AND HARNESS
1.1	1	1001097	ANGLE, SUPPORT, RETRACT MOTOR
1.2	1	1001098	ASSEMBLY, WATER RUDDER RETRACT MOTOR
1.3	1	1001336	PLACARD, FULL DN
1.4	1	1001337	PLACARD, UP
1.5	1	1001338	PLACARD, DOWN
1.6	1	1001622	PLACARD, WATER RUDDER RETRACT
1.7	1	1001623	PLACARD, FULL UP
1.8	4	1009620	EXTENSION, TOP, WATER RUDDER POST, 10000
1.9	1	1009740	WIRE HARNESS, INTERCONNECT, WR RETRACT
1.10	1	1009741	WIRE HARNESS, CONTROL, WR RETRACT
1.11	1	60928-1	CLAMP
1.12	1	6B3-2243-2	PLACARD, WATER RUDDER POSITION
1.13	1	7B3-4400-28	PLACARD, RUDDER RETRACT
1.14	1	7277-2-5	CIRCUIT BREAKER, 5 AMP
1.15	2	AGC-5	FUSE (SPARE)
1.16	1	AN315-3R	NUT
1.17	1	AN3-6A	BOLT
1.18	1	AN4-15A	BOLT
1.19	2	AN4-20A	BOLT
1.20	1	AN42B5A	EYE BOLT
1.21	2	AN44-5A	EYE BOLT
1.22	4	AN526C1032R6	SCREW
1.23	1	MS21044N3	NUT
1.24	3	MS21044N4	NUT
1.25	2	MS21044N5	NUT
1.26	2	MS21254-3LS	EYE END, TURNBUCKLE
1.27	4	NAS1149D0316J	WASHER
1.28	4	NAS1149D0363J	WASHER
1.29	1	NAS1149F0316P	WASHER
1.30	1	NAS1149F0432P	WASHER
1.31	3	NAS1149F0463P	WASHER
1.32	4	NAS1149F0563P	WASHER
1.33	4	NAS679-A3W	NUT
1.34	2	R-3	RING TERMINAL
1.35	1	R-5	RING TERMINAL
2	2	MS21260S3RH	TERMINAL WIRE ROPE STUD
3	2	MS21251B3S	TURNBUCKLE BARREL
4	4	MS21256-1	LOCK CLIP
5	1	1N4006	DIODE

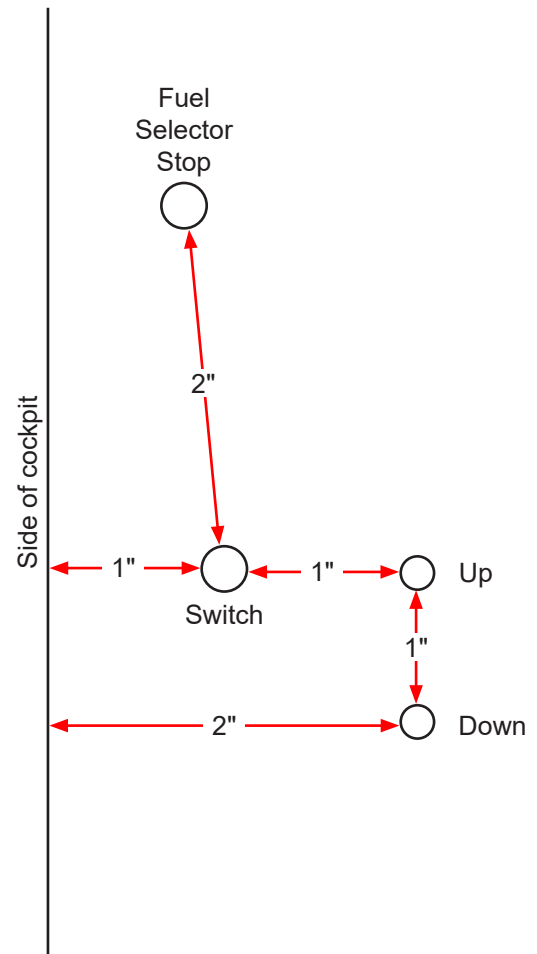
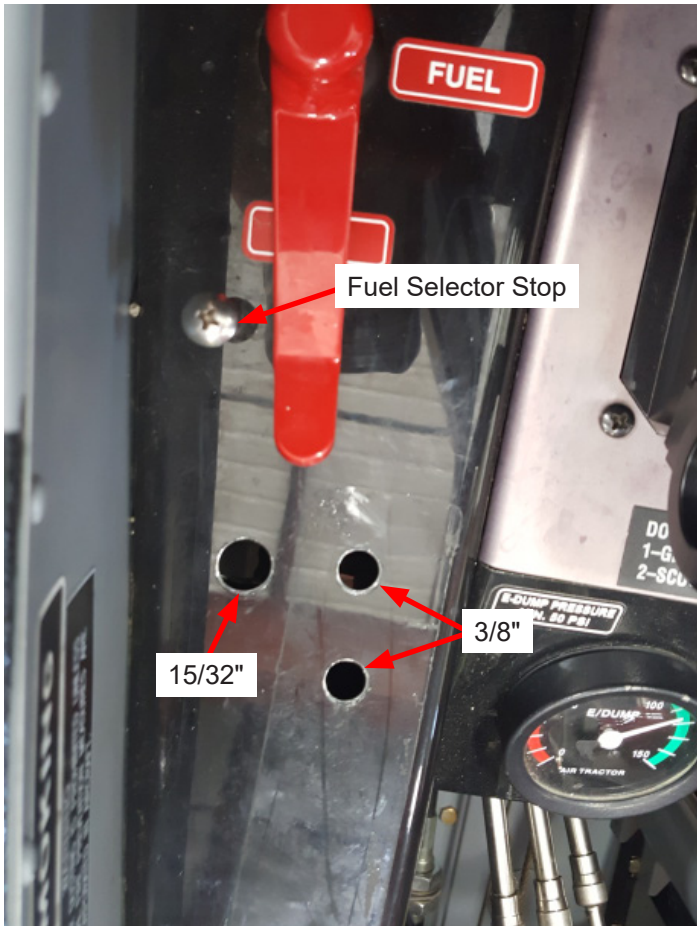
WORK INSTRUCTION

1. Remove 2 panels on the pilot side under door on to gain access to the cable retract motor mounting location



SECTION 1 - INSTALLATION OF WIRING, LIGHTS AND SWITCH

1. Drill 3 holes as shown



NOTE: Not to scale

2. Install switch and lights

NOTE: Bracket under switch may need to be grinded to allow clearance for install



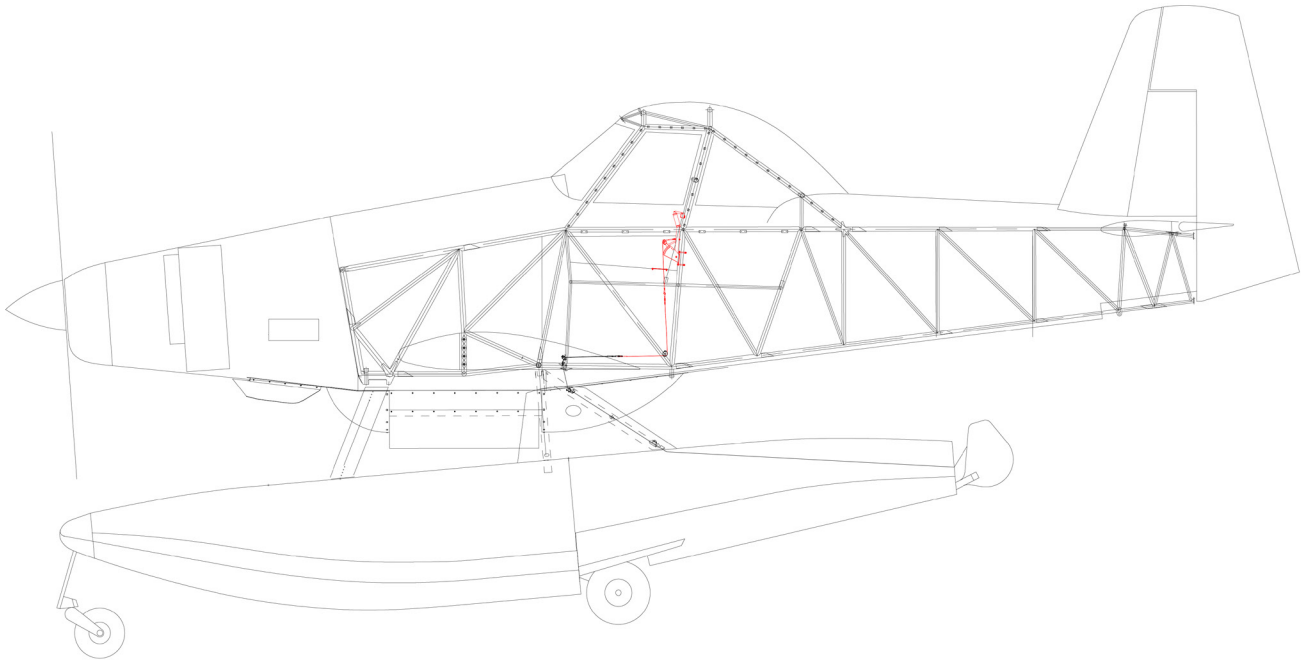
3. Install breaker in Fireboss breaker panel if space allows

NOTE: If there is no room in the Fireboss breaker panel, find an adequate space for a 5 amp breaker and run to buss power

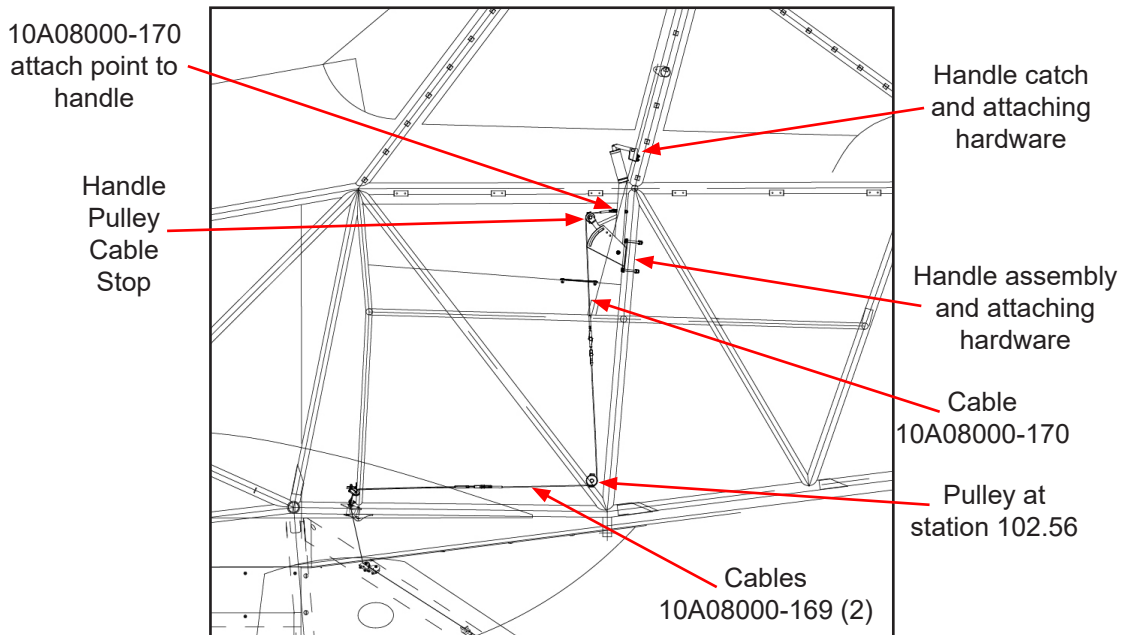
4. Locate P1 connector behind the radio stack
5. Remove the female pin from the connector and install a 1N4006 diode in line with the existing wire and splice in "P1-23" wire
6. Remove pins from J27 Molex and route through grommet on left hand side wall. Route with existing wiring to retract motor location

NOTE: Refer to Water Rudder Retract Diagram on last page for reference

SECTION 2 - MANUAL RETRACT HANDLE REMOVAL



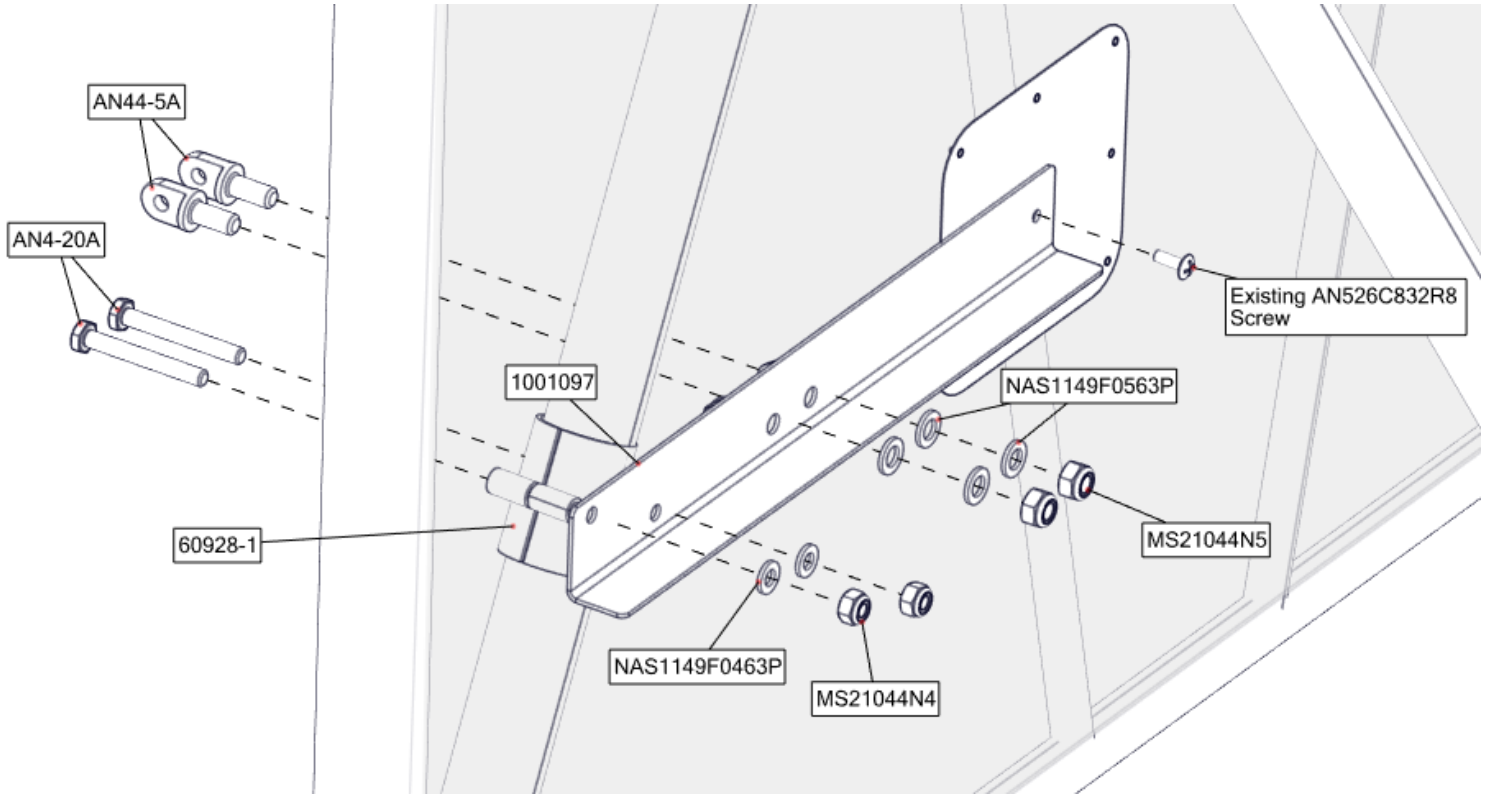
1. Detach 10A08000-170 cable assembly from handle and remove handle pulley cable stop
2. Remove cables and pulleys at station 102.56 (cable part number 10A08000-169 quantity 2 and part number 10A08000-170 quantity 1)
3. Remove handle catch, handle assembly, and all attaching hardware
4. Plug all holes and apply a floor cover (not provided) if desired



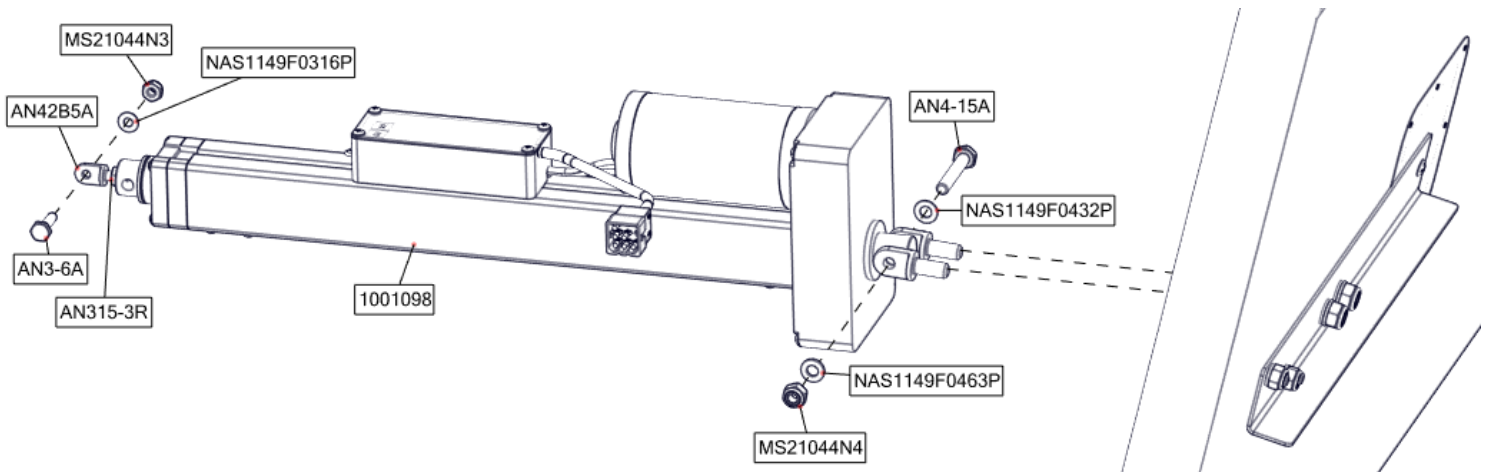
SECTION 3 - RETRACT MOTOR INSTALLATION

- Align 1001097 support angle inside baggage compartment picking up existing screw through the baggage wall and install support bracket as shown

NOTE: A template may be made to pick up the 1/4" holes for 60928-1 clamp

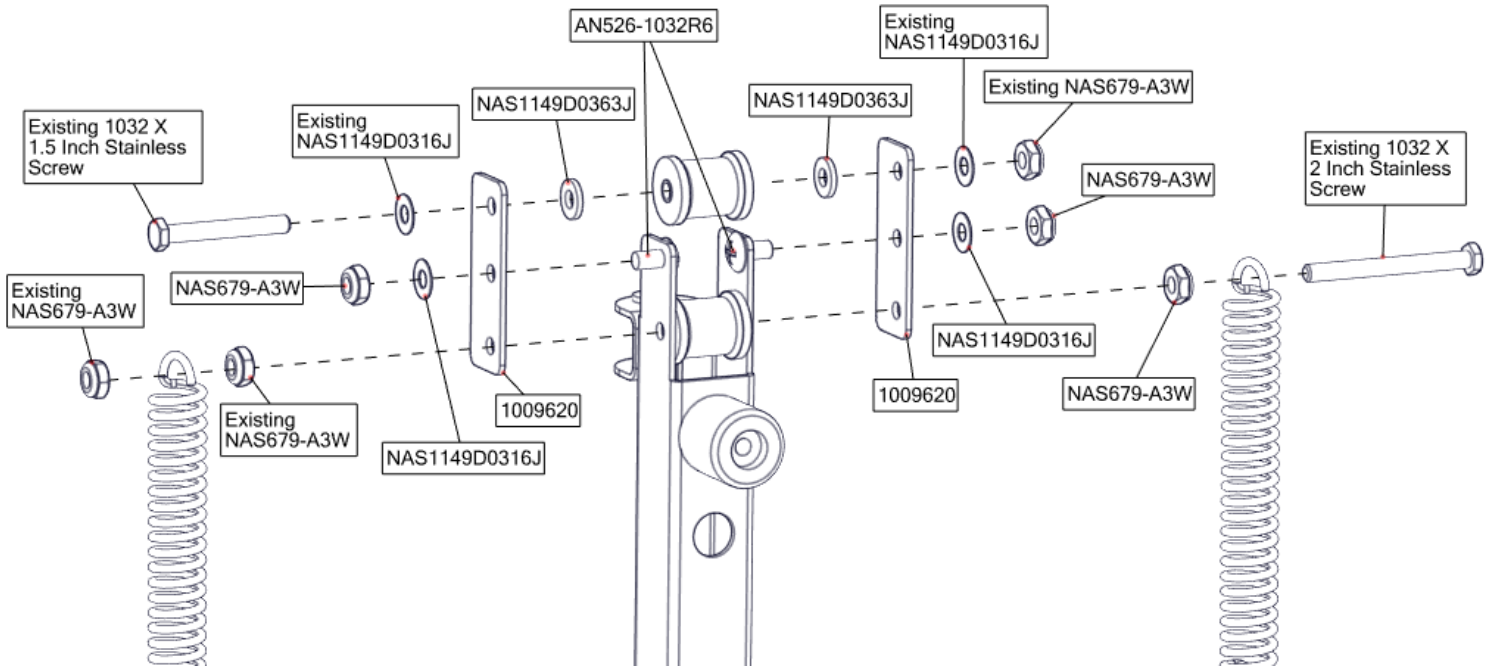


- Install 1001098 retract motor assembly as shown



SECTION 4 - WATER RUDDER EXTENSION INSTALLATION

1. Install new water rudder hardware as shown

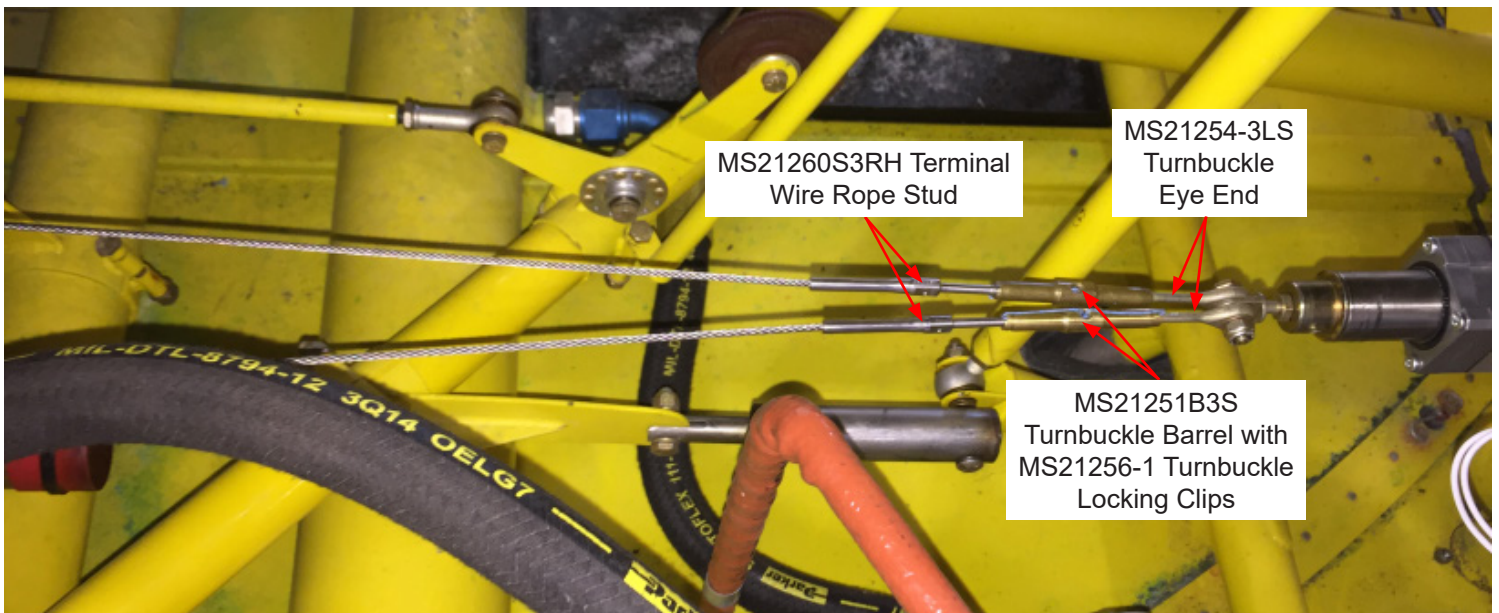


SECTION 5- RIGGING WATER RUDDERS

1. Set limit switches on bottom of actuator to maximum (full forward, full aft)
2. Fully extend actuator
3. Start rigging with the water rudders in the down position
4. Temporarily install MS21260S3RH terminal wire rope stud, MS21254-3LS turnbuckle eye end, and MS21251B3S turnbuckle barrel to the end of the actuator with MS21251B3S turnbuckle barrel just covering the threads of the S21260S3RH terminal wire rope stud
5. Run motor to water rudders down (extending the actuator) enough that the MS21260S3RH terminal wire rope stud are 1/2" away from entering into the closest pulley on the cross brace
6. Pull existing cables tight through cross brace pulleys and mark cables where they would bottom out inside MS21260S3RH terminal wire rope stud
7. Cut cables and swedge on new MS21260S3RH terminal wire rope stud to retract cables
8. Assemble MS21260S3RH Terminal Wire Rope Studs to MS21251B3S Turnbuckle Barrels and adjust so no threads are showing on the MS21251B3S Turnbuckle Barrels
9. Use limit switch to rig the water rudders down so water rudders are just resting on down stops

NOTE: If actuator goes past limit switch, it will blow the AGC-5 fuse in actuator

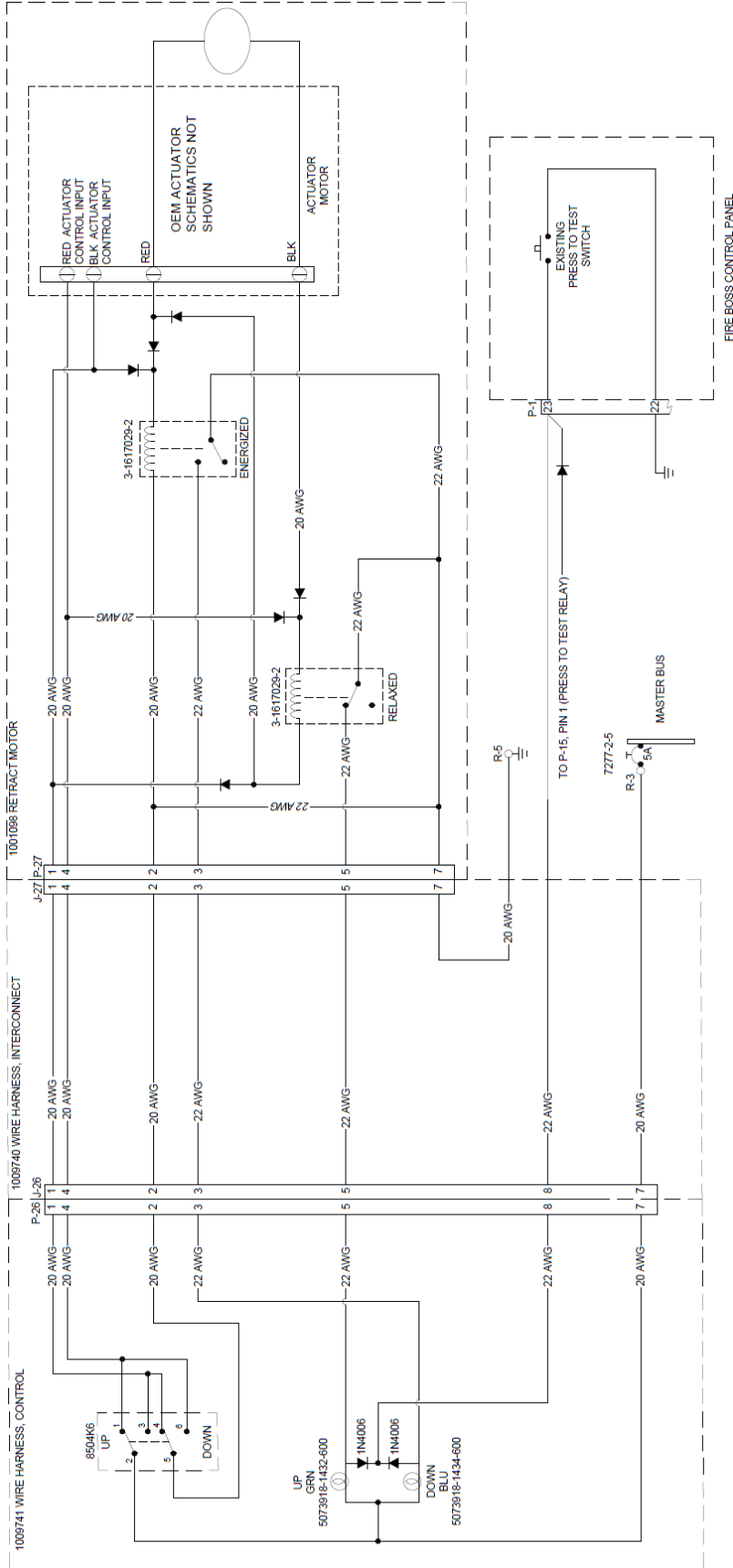
10. Set water rudders up using limit switch
11. Install MS21256-1 turnbuckle locking clips



RETURN AIRCRAFT TO SERVICE

1. Confirm operation of the water rudder retract by running the water rudder up and down
2. Reinstall 2 panels on the pilot side under door
3. Upon completion of inspection, enter information in Aircraft Logbook for completion of this Wipaire service letter
4. Visit www.wipaire.com and update your aircraft service letter/kit record using the link found on the Customer Support dropdown menu under "Update Service Letter & Kit Compliance Status"

A revised Airplane Flight Manual Supplement is needed. Please contact Wipaire Customer Service with your aircraft registration number and serial number to obtain a revised copy of the Flight Manual Supplement.



WATER RUDDER RETRACT DIAGRAM