

**RECOMMENDED INSTRUCTIONS**

**FOR ASSEMBLING AND MOUNTING**

**PUDDLEJUMPER FLOAT KIT**

**FOR CHALLENGER**

# PUDDLEJUMPER FLOAT KITS FOR NON CERTIFIED ULTRALIGHT AIRCRAFTS

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## FLOAT KIT PURCHASE AGREEMENT

### FLOAT KIT DESIGN, ASSEMBLING AND INSTALLATION INTEGRITY

Purchaser understands and agrees that many factors affect the design integrity of the float kit, including the design requirements for structural integrity of attachment to aircraft and aquadynamic, aerodynamic and center-of-gravity characteristics. Assembling and installation is the sole responsibility of Purchaser.

PUDDLEJUMPER FLOATS (1991) INC. reserves the right to make revisions in the Design and Construction of the Float kits at any time without liability to PUDDLEJUMPER FLOATS (1991) INC., as such revisions or changes may be deemed advisable from time to time.

### ACCIDENT LIABILITY

Purchaser understands and agrees that many factors beyond the control of PUDDLEJUMPER FLOATS (1991) INC. significantly affect the operational safety of the Float kit including the quality of the aircraft as constructed by Purchaser or others, the attachment of the Float kit to the aircraft as undertaken by the Purchaser or others, the performance by Purchaser or others of inspections, maintenance procedures, and repairs, or the operation of the aircraft, including high impact, rough water, excessive weight, high take off or landing speeds, etc. by Purchaser or others.

Purchaser also understands and agrees that the installation, maintenance, and/or repair of any aircraft or Float kit may involve use of tools, equipment, and construction methods which may present safety hazards which are beyond the control of PUDDLEJUMPER FLOATS (1991) INC.

PUDDLEJUMPER FLOATS (1991) INC. does not warrant the integrity of the Float kits after they have been shipped from the factory.

Purchaser agrees to inspect the Floats and all component parts, prior to installation, for shipping or other damage.

The entire risk as to the quality and performance of the Float kit is with the Purchaser. Float kits are provided "AS IS" without express or implied warranty of any kind, including merchantability and fitness for a particular purpose. Should the float kit or installation prove defective, the Purchaser and not PUDDLEJUMPER FLOATS (1991) INC. assumes the entire cost of all necessary servicing, repair, or correction.

### YOU ARE THE FINAL INSPECTOR

PUDDLEJUMPER FLOATS (1991) INC. is very conscientious to assure that the proper items are delivered. It is your responsibility, however, to inventory the parts supplied with the Float kit. If there are any discrepancies in your order, PUDDLEJUMPER FLOATS (1991) INC. must be notified within 30 days of receiving your Float kit for any necessary adjustments.

If damage has occurred to your Float kit during shipment, please call your trucking company and PUDDLEJUMPER FLOATS (1991) INC. immediately.

It is our intent to assure the delivery of quality Float kits. If you have any problems, please contact PUDDLEJUMPER FLOATS (1991) INC. for any necessary corrections.

## GENERAL INFORMATION

1. The initial installation requires that instructions be fully understood before any bolting or drilling of holes be accomplished. As most hardware will remain permanently fixed either to the floats or plane, subsequent removal or installation of the floats should take less than one hour.
2. It is suggested that on initial installation the plane be raised freely off the ground, preferably suspended at the center of gravity.
3. For those who use the floats seasonally, it is easier to remove or install the complete float assembly as one unit; wires are disconnected, lateral braces removed from the plane, and dowels disconnected from the airframe. All other components remain intact.
4. Floats can be painted at will with any good quality polyurethane paint normally found in marine supply stores or marinas.
5. If the plane is to remain out in warm sunshine, some pressures will build-up in the floats. Although this pressure has no adverse effect on the floats, it may render opening the inspection hatches difficult. Pinholes may be drilled in the center of the access hatch cover to release the pressure. 1/32" holes will not let water in the floats.
6. All parts bolted to the floats should not be over tightened, for hairline cracks may appear in the gel coat. Bolts cannot loosen as they are nylocks.
7. Caulking (silicone or goop) must be used under all accessories bolted to the floats, such as mounting blocks and hatch covers. Failure to do this will let water leak into the floats.
8. It is imperative that the bushings and shaft of the nose gear assembly be kept clean and lubricated with a silicone lubricant or light oil. Mechanism operation and steering function should be part of preflight inspection.

The S.S. shaft should be wiped with a lightly oiled rag as required to keep the shaft clean and free.

To insure that nose wheel assembly lowers and locks properly, a lubricant in the form of a spray or light oil should be poured in the void of the nose wheel fork. The emergency down push rod is highly recommended as a back-up.

Be sure to allow 1" free play in the retract cable. If the cable is taunt in the wheel down configuration, the normal wheel movement on a grass field can pull the lock-key in the open position and collapse the front wheel.

9. The area behind the wheel well is an absolute "no step" zone when the floats are on ground. Try to avoid stepping there at anytime even in the water.

## Warranty

There is no warranty on this product. Floats and hardware have been designed so that they will absorb energy and collapse before the airframe does in the event of serious impact.

Proper training for float operation is indispensable. Take-offs and landings on water, if not properly initiated, can put greater strain on the airframe than landing across a ploughed field on wheels.

## INSTRUCTIONS

1. Mount wheel lock 3" x 3" aluminum block on float, at the step, using pre-drilled holes, and install compression wood block. Holes are already drilled in the main gear 3" x 3" mounting block. Compression block must be snug at the top of the main mounting block.
2. Install Morse cables and locking plate on floats. Plastic support and lock bracket should be installed in pre-drilled holes at this point (Fig. 6). The Morse cable has a slot that matches the slot of the cable clamp. The clamp indentation must go into the slot of the cable.
3. Install rear wheel retract cable and attach to rear wheel fork as shown in Fig.6. Cut cables long enough to be able to complete installation in airplane cabin later. Don't forget that you must also cut a length for the nose gear.
4. Mount completed nose wheel section in front float spreader.  
Do not tighten nose wheel section to float spreader bar yet. (Fig. 1)
5. Raise airplane.
6. Remove main gear axle.
7. Install rear wheels in floats, cut spacers to appropriate length to center wheel in fork (if you have the brake system spacers are precut and packed with the wheels).
8. Install rear float spreader through both main gear blocks (Fig. 3).
9. Slide floats assembly under the plane.
10. Level the floats on wood blocks high enough so that the rear wheels will clear the ground comfortably in the down position. (Fig. 2)
11. Lower rear of aircraft to position "U" bracket on rear spreader tube. Mark where gear leg rests in bracket and fasten to spreader. Fasten gear leg to bracket using existing axle bolt (fig. 3). Do not bolt rear spreader to mounting blocks yet. Gear legs must rest on brackets directly over the rear crossbar, and not be carried by the axle bolts. See Fig.3. As axle bolting holes are different from one plane to another, drill new holes through the gear legs to attach the float brackets. Spreader bar is longer than required. Install as shown on one side of block and cut excess length on other side once installation is complete.
12. Remove front wheel fork.
13. Install front mounts assembly (front spreader) onto float deck, making sure that they are flat and centered on deck, and at an equal distance from the rear mounts on each side. (Fig. 4)
14. The nose wheel section is now connected to the shaft B of Fig.1. Do not bolt yet.

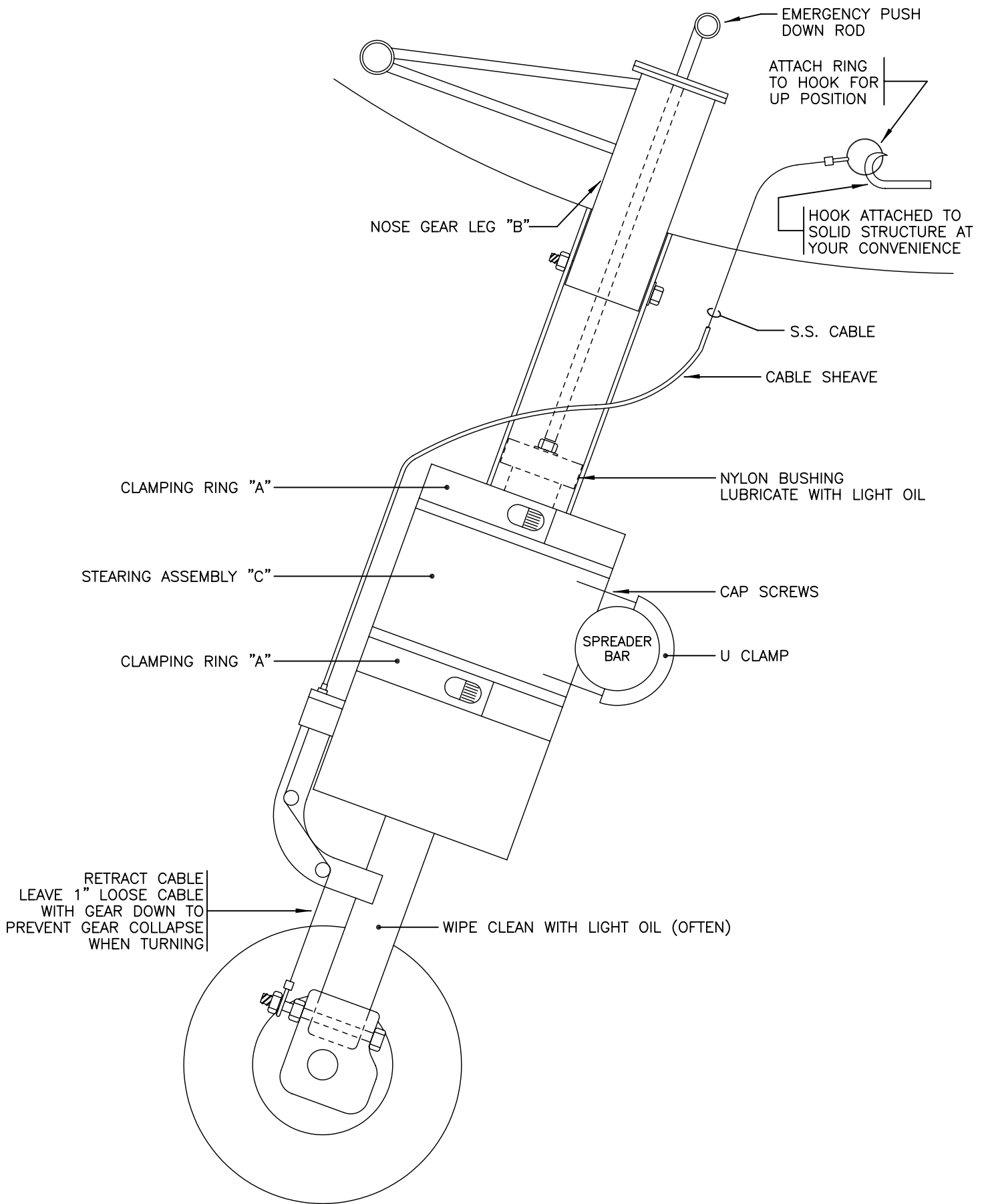
15. Make sure that floats are parallel to each other by measuring distance between axles and center of floats aft and forward: measure should be the same. There are markers fore and aft of the floats to simplify measurements.
16. Level aircraft. Level should be taken on main longeron between pilot and passenger seats. A + 4° spread between aircraft longeron and floats is acceptable. That is to say that the angle between longeron and floats is open up to 4°. A smaller angle, not less than 2.5° is also adequate but will increase water take off distances.

An easy way to have this angle is to have floats level and measure 4° up on the longeron with a protractor (fig. 5). Another way (on the Challenger) is to have a distance of 58¼" from under the leading edge tube of the wing to the top of the float (in an almost vertical line touching the front of the wing strut).

Make sure that rings "A" and "C" are at the base of the tubing as packaged. Bolt to shaft "B". Be sure that front wheels and rudder are lined up. **MAKE SURE THAT ALL ALUMINUM SHAVINGS RESULTING FROM DRILLING THE HOLES ARE REMOVED FROM INSIDE THE STEERING ASSEMBLY (insert a rag down the tubing before drilling and remove after).**

17. Drill ¼" hole on top of front mount through front spreader. Again as for rear spreader install as shown on one side of block and cut excess length on other side once installation is complete.
18. Fasten in place with channel bracket, and bolt through support (Fig. 4).
19. Bolt through rear spreader to rear mounting blocks (Fig. 3).
20. Bolt anti-sway struts in channel brackets on front mount and swing aft until they are centered on main fuselage longeron. Check that they are the same distance aft on both sides. Drill through longeron and install (Fig. 4).
21. Caulk around hatch rings and fasten to deck. Use 3/32" bit for pilot holes.
22. Install retraction nose gear cable as shown in Fig.1. An alternate location for the hook is along the seat tubing. These are only suggestions and each individual can customize the location to suit his needs.
23. Install main gear retraction cables as shown in Fig. 7. Once again this is a suggestion and you can customize to suit your needs. Make sure that when the retract handle is attached to the hook the wheel forks are to the maximum up travel position. You will then be able to slide the lock plates through the forks easily. The wheels fork must not be held up by the lock plate but rather by the cable. The lock plate in the "gear up" position is there only for security in case that for some reason the retract handle would release from the hook during a landing on water. The lock plate would stop the fork and wheel from coming down. If you use the lock plate to hold the gear in the "up" position your Morse cables will eventually get damaged.

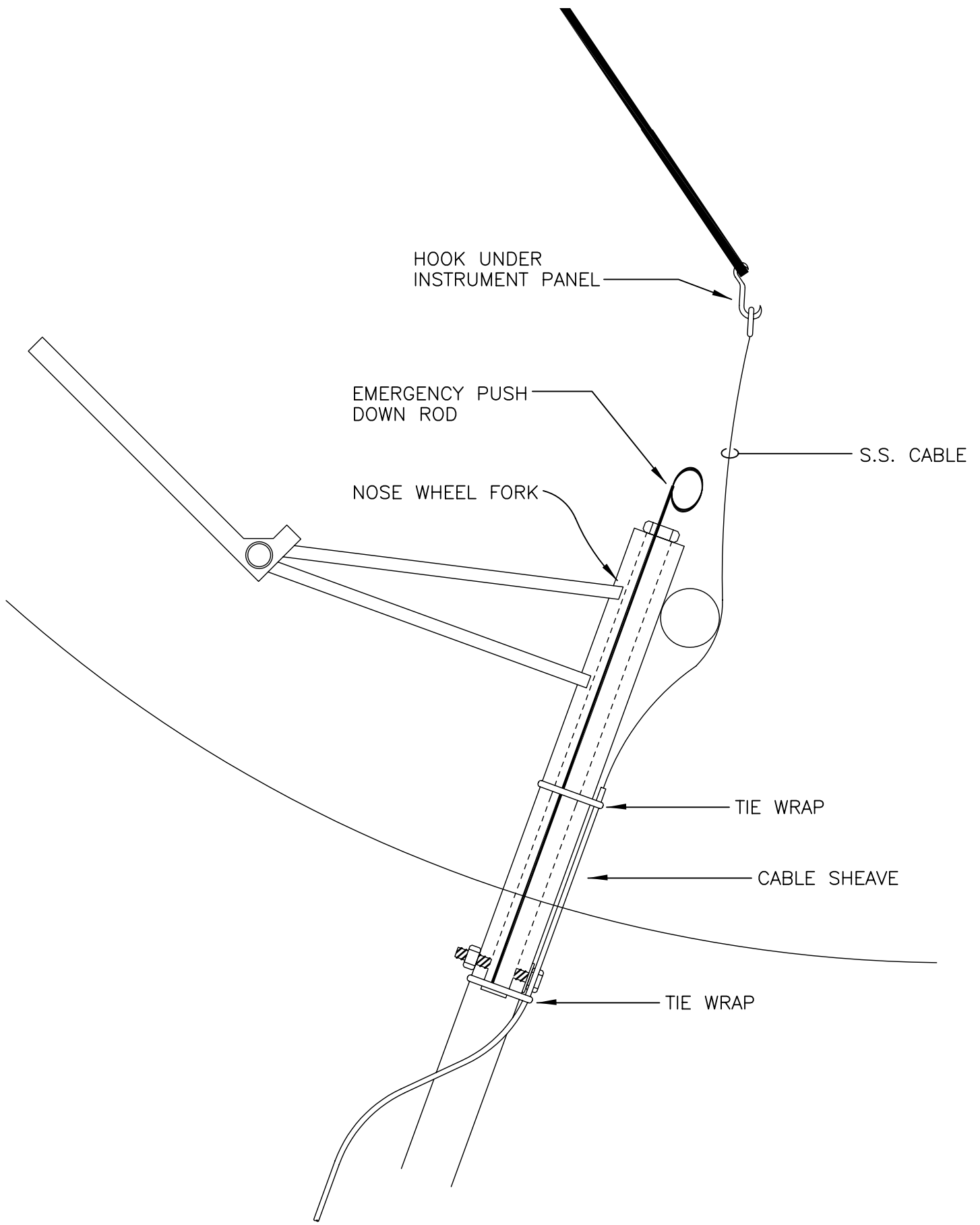
24. Install Morse cables inside cabin (Fig. 9). Once again you can customize this to suit your needs.
25. Sit in aircraft and practice retract and locking of gear. Make all necessary adjustments while the floats are mounted on the blocks so that you are comfortable with the procedure. You will have to operate this in flight so make sure that the positioning and mechanism operation is satisfactory to you.
26. Remember to have your wheels down for ground landing and your wheels up for water landing. Enjoy float flying.



STEERABLE NOSEWHEEL ASSEMBLY

FIG. 1





HOOK UNDER  
INSTRUMENT PANEL

EMERGENCY PUSH  
DOWN ROD

NOSE WHEEL FORK

S.S. CABLE

TIE WRAP

CABLE SHEAVE

TIE WRAP

NOSE GEAR RETRACTION

FIG. 1A

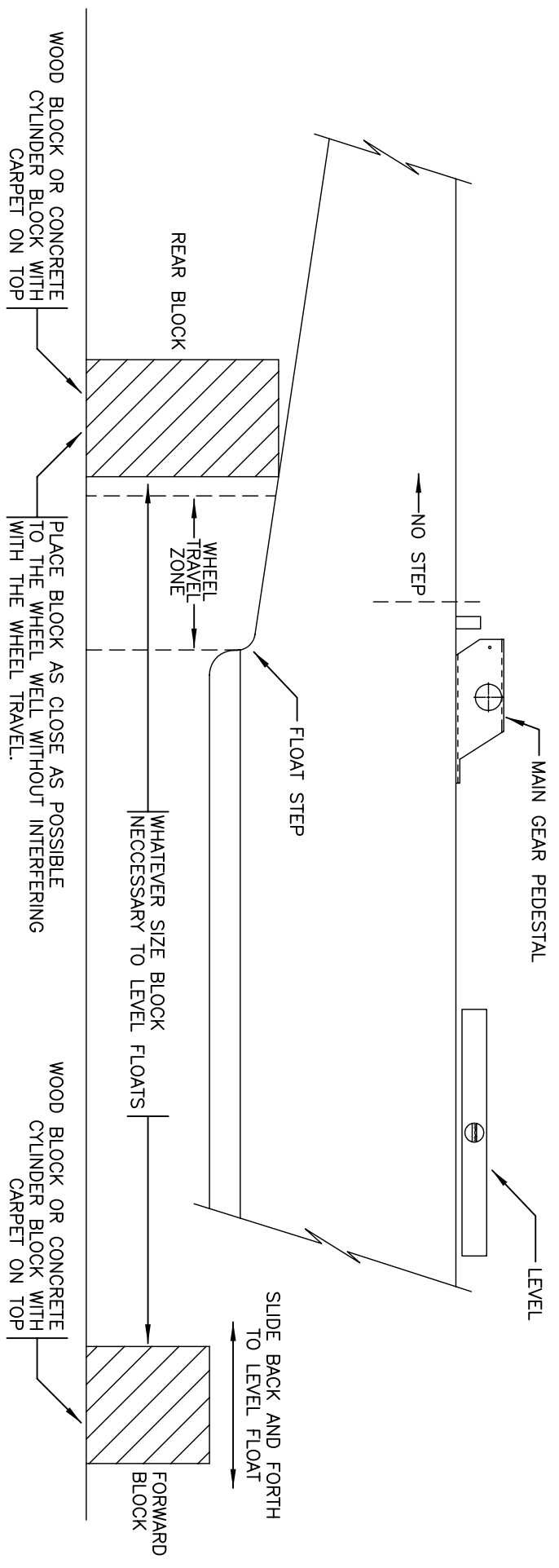
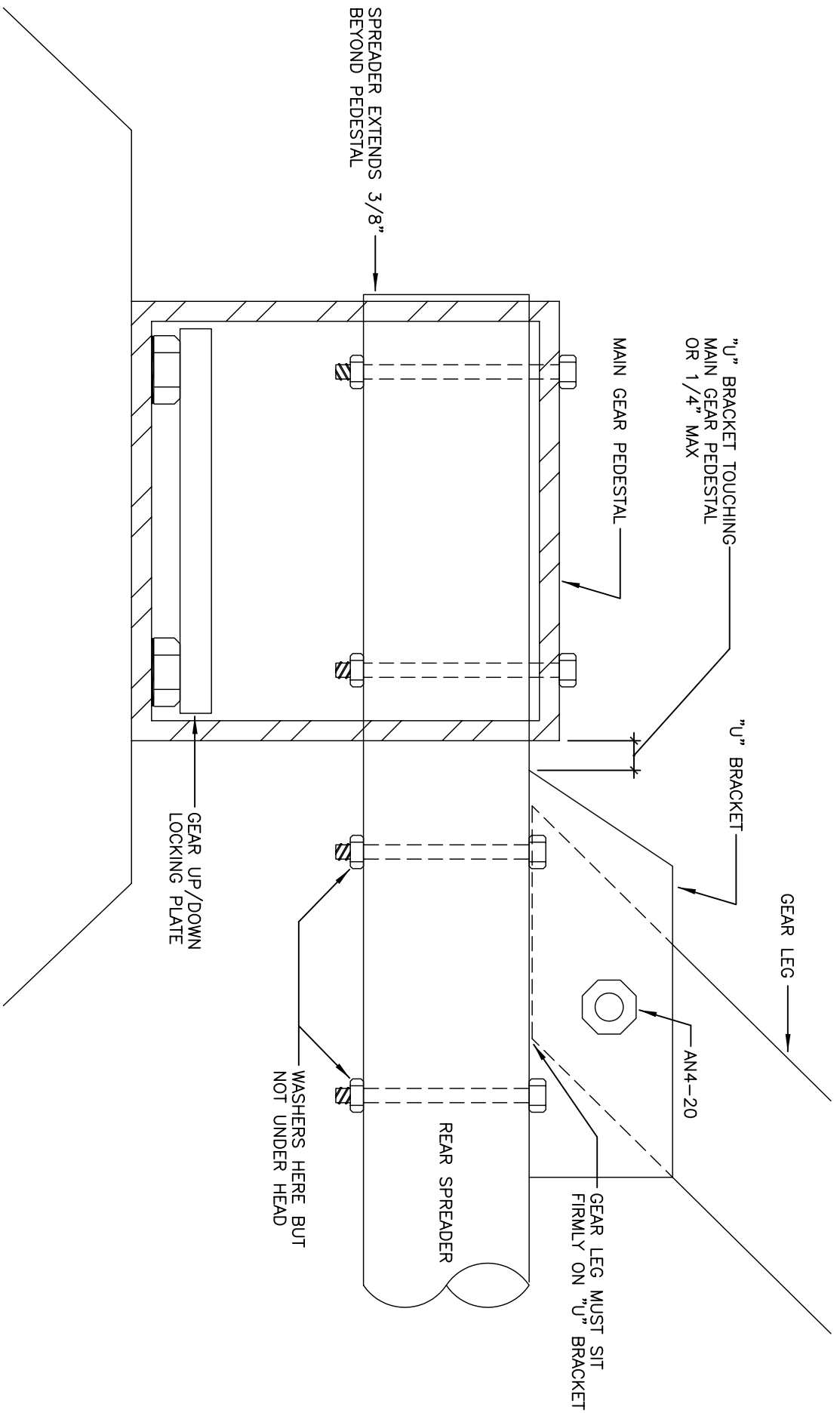
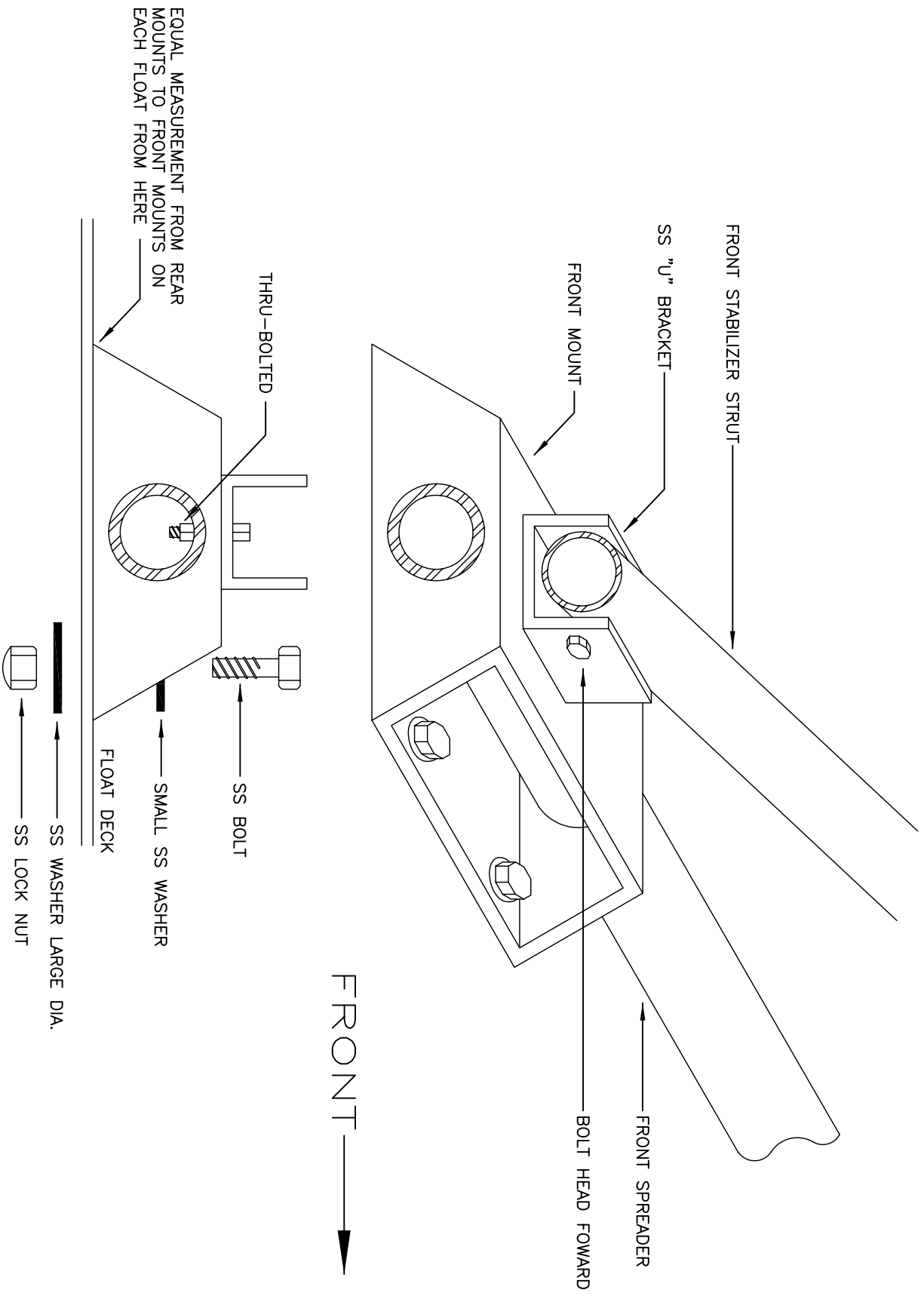


FIG. 2



FLOAT DECK

FIG. 3



FRONT MOUNTING BLOCK

FIG. 4

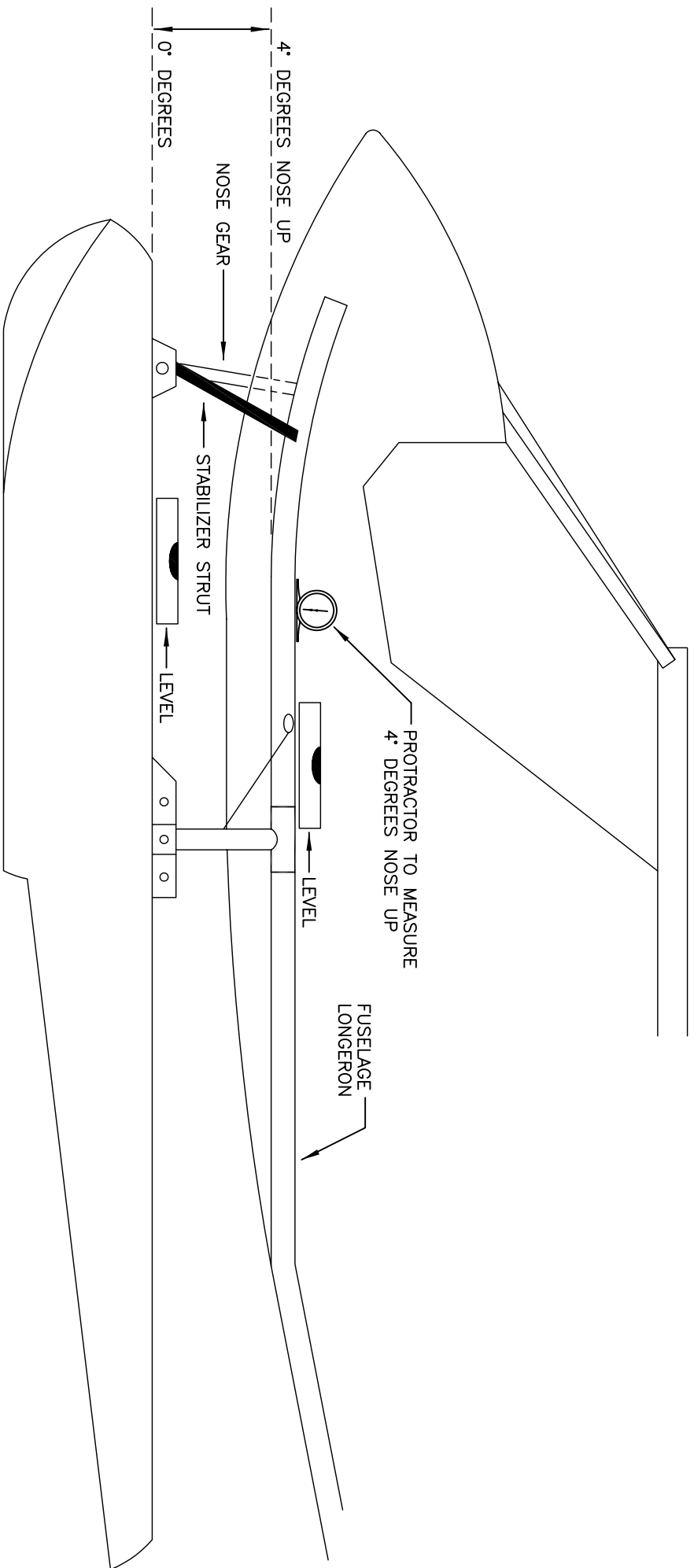


FIG. 5

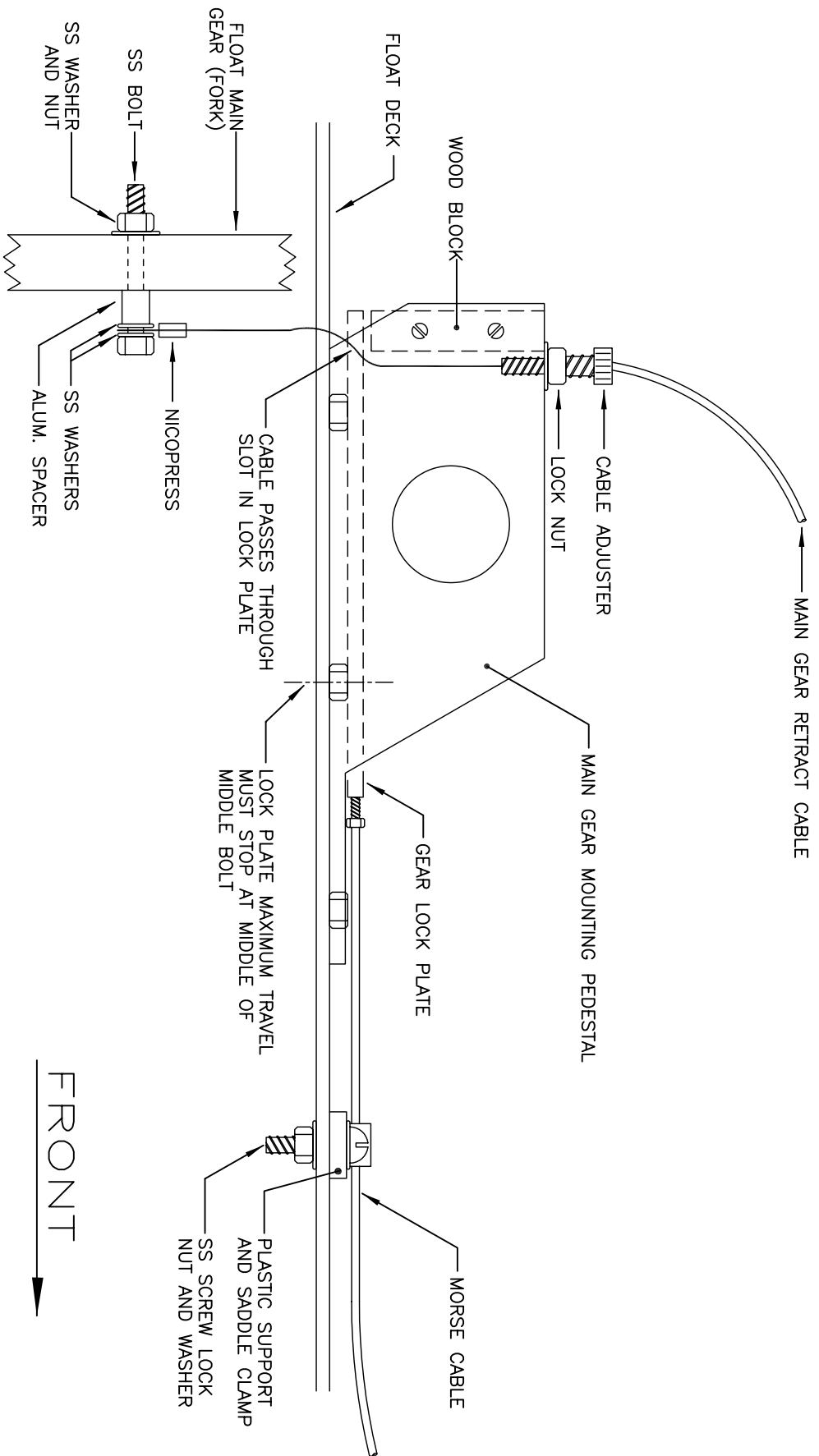
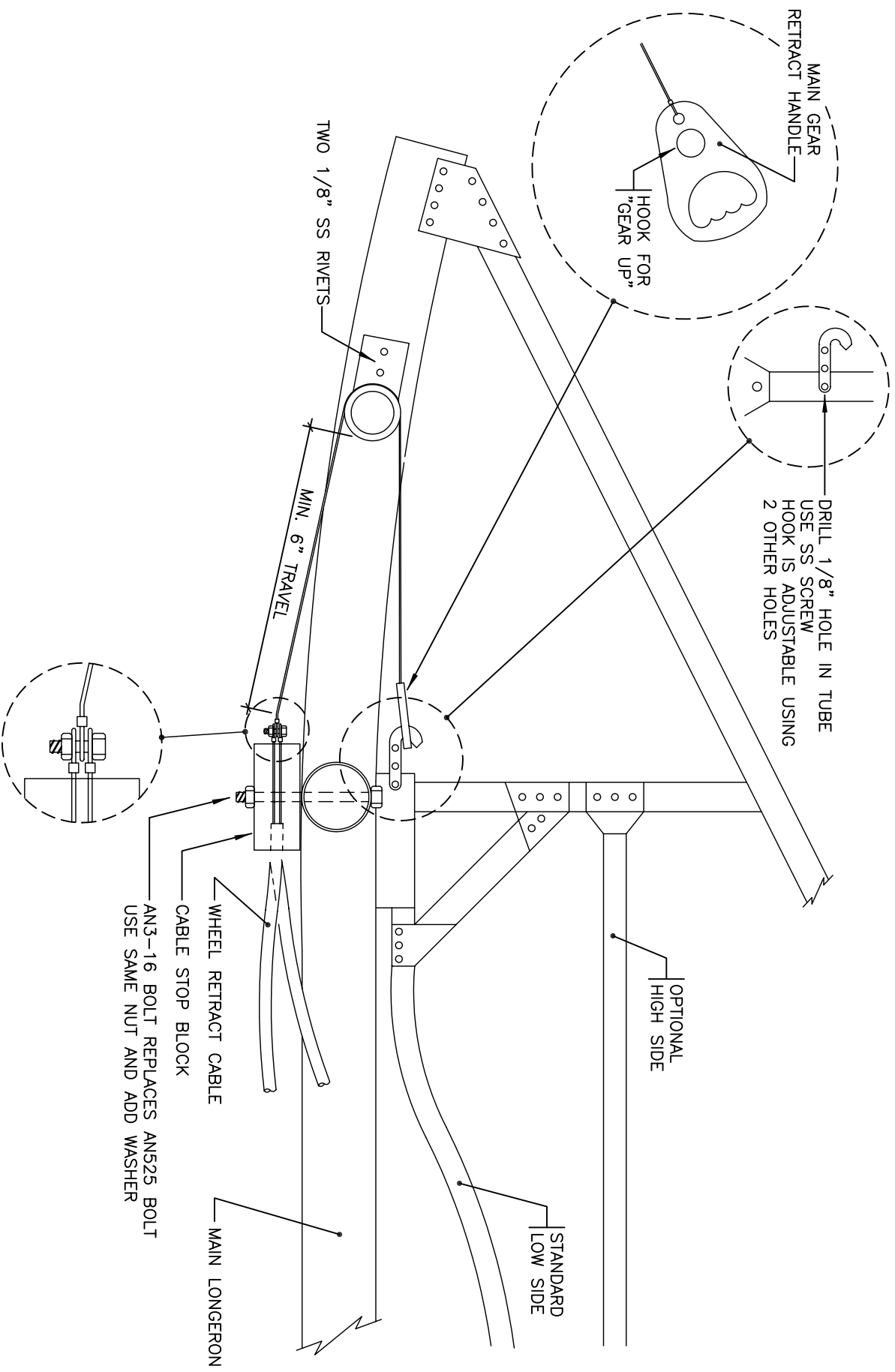


FIG. 6

FRONT



MAIN GEAR RETRACTION

FIG. 7

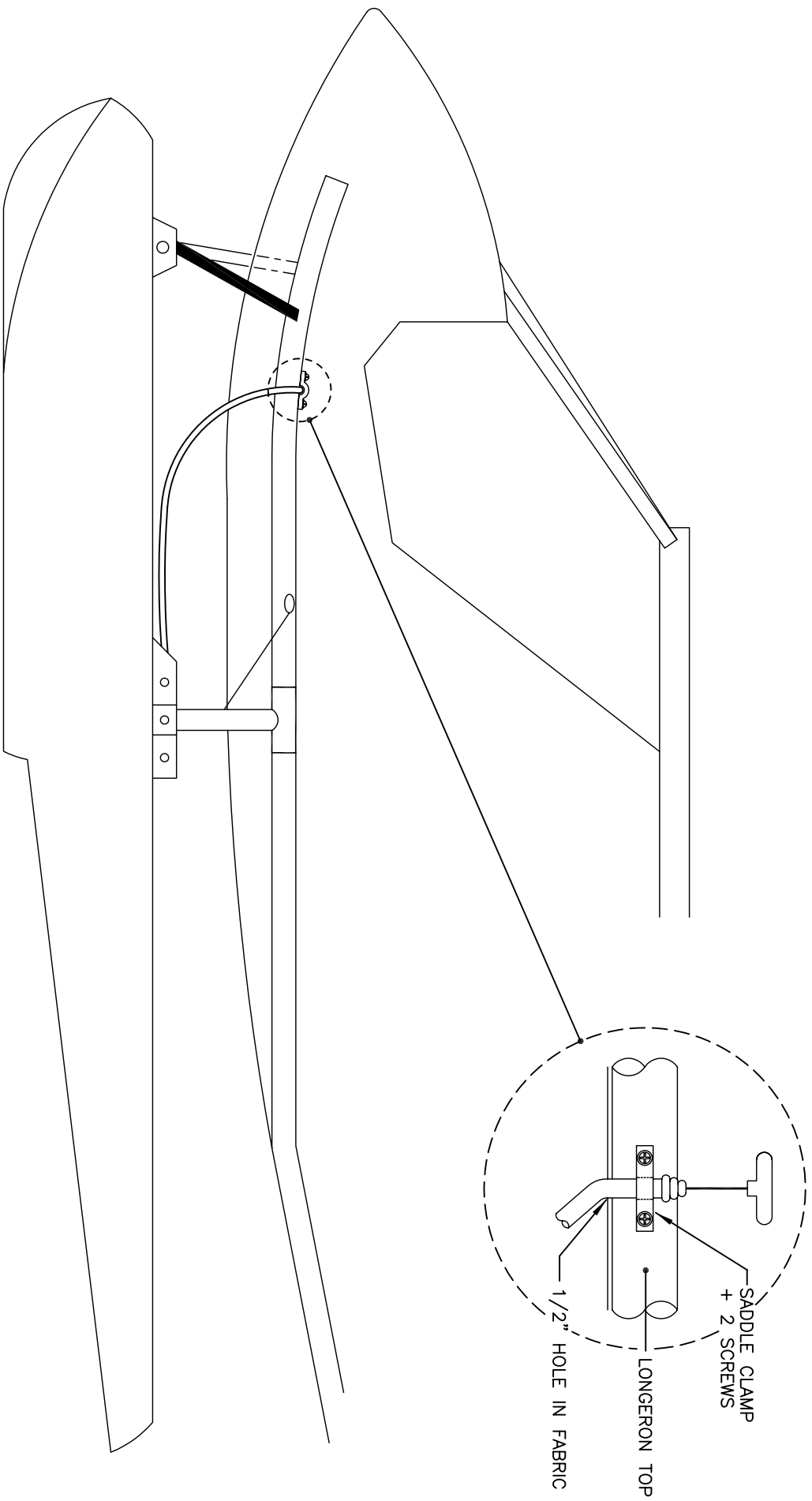


FIG. 9