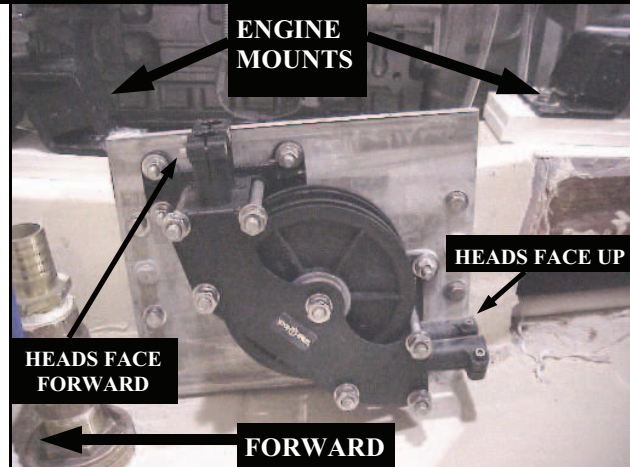


# 420 SOP STEERING INSTALLATION

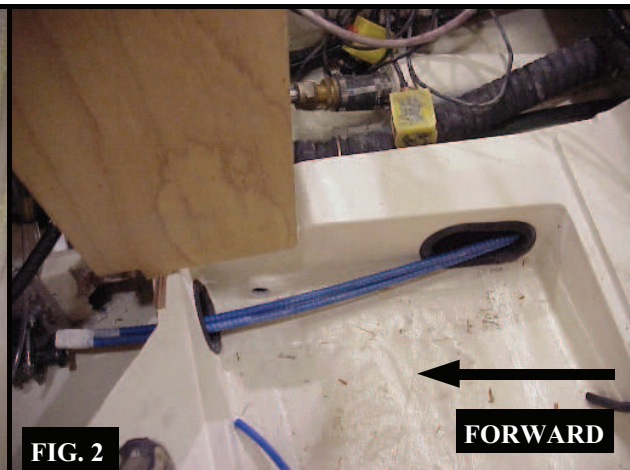
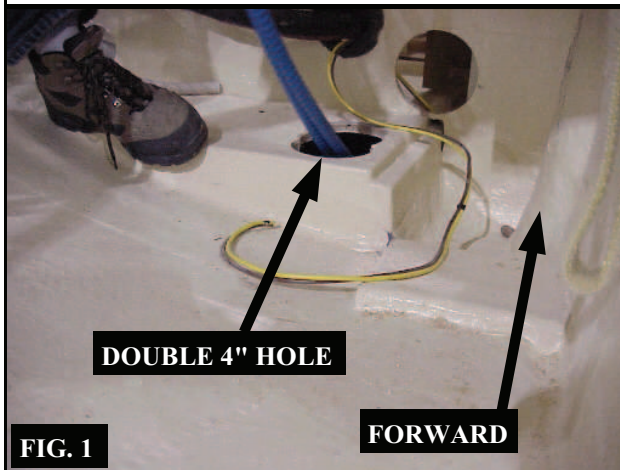
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## LOWER SHEAVE INSTALLATION

1. Attach four conduit clamps to the sheave so the heads of the screws on the top two clamps will face forward and the heads of the screws on the bottom two clamps will face up once the assembly is mounted to the boat.
2. Mount the lower sheave to the aluminum mounting plate using 3/8"-18 x 1-1/2" hex head bolts, washers lock washers, and nuts. The heads of the bolts will be on the backside of the mounting plate (the side with the two aluminum strips welded to the plate), the nuts and washers will be on the same side as the sheave. The sheave can be mounted only one way.
3. Place the mounting plate, with the sheave attached, against the stringer on the portside of the engine so two conduit clamps face up and the other two clamps face aft, the bottom of the plate is resting on the hull, and the plate is positioned (forward to aft) between the engine mounts.
4. Drill thru the six mounting holes on the plate into the stringer with 5/16" drill bit then attach the plate to the stringer with 3/8" x 2-1/2" lag bolts and washers.



## LONG CONDUIT (11.5') INSTALLATION

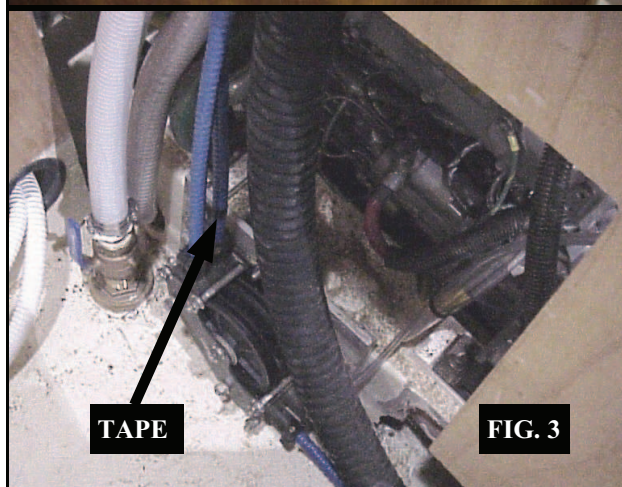
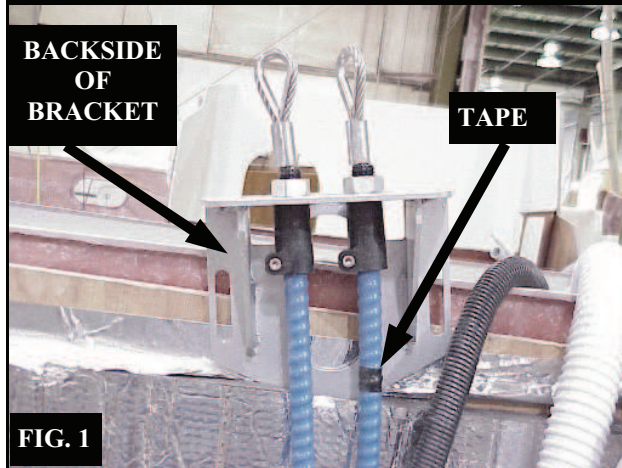


1. The two long pieces of conduit (11.5') will need to be run from the aft end of the boat under the pan to the forward sheave. Mark both ends of one piece of conduit with tape so they can be distinguished from each other after installation, then tape both pieces of conduit together on one end to run them up to the forward sheave.
2. Just aft of the aft kickboard and port of the rudder post is a "double 4 inch hole" (Fig. 1). Run the pieces of conduit through this hole and up thru the hollow stringer. It will come out of the port side of the stringer aft of the engine (Fig. 2). Continue to run the conduit thru the hole just aft of the sheave then leave the conduit at the end of the sheave.

# 420 SOP STEERING INSTALLATION

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## CONDUIT AND CABLE INSTALLATION

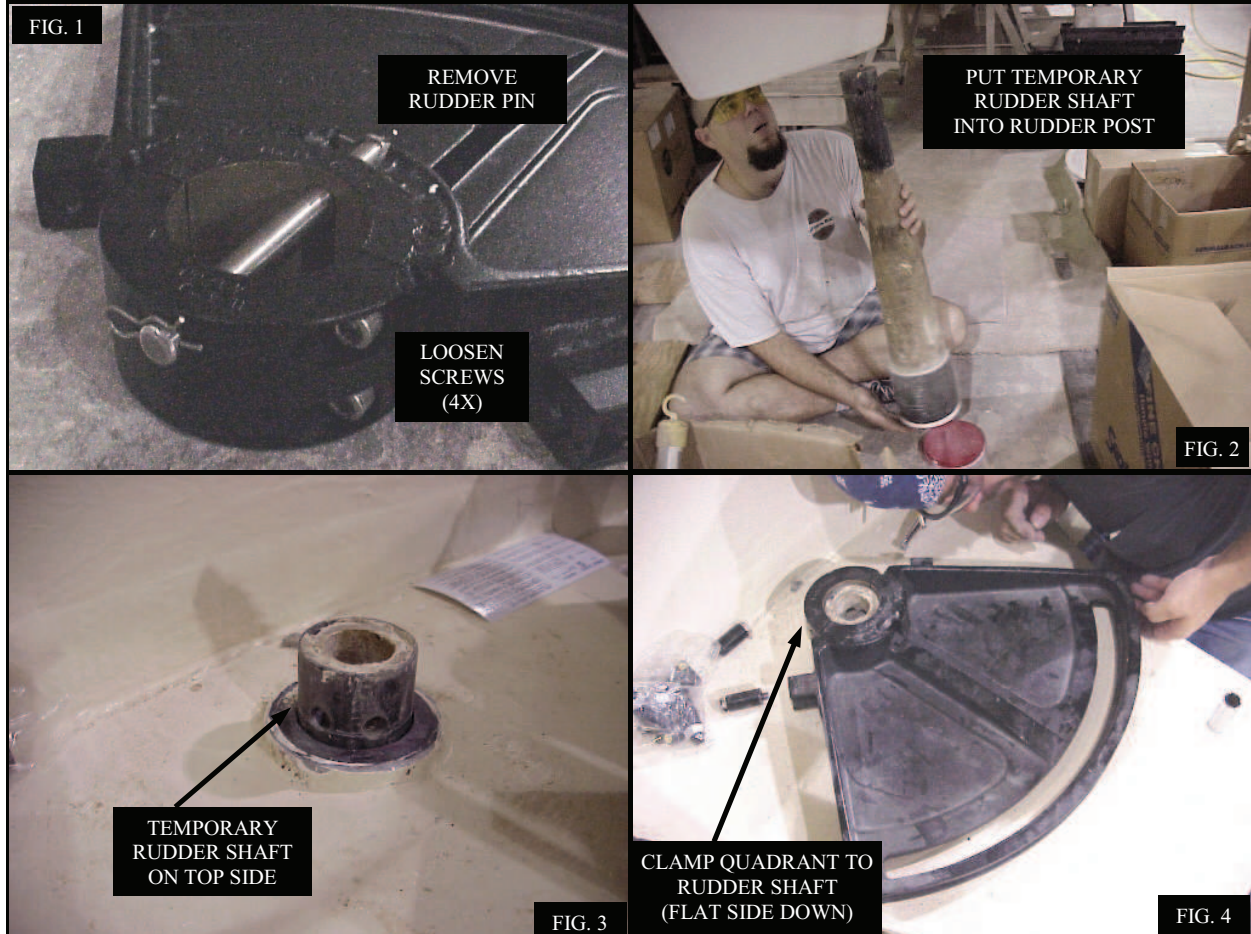


1. Attach two conduit clamps to the top of the steering bracket supplied in the kit. The clamp end goes towards the bottom of the bracket and the nut goes on top, the head of the screws on the clamp need to face out (Fig. 1).
2. The two middle length conduits (6' long) will need to be connected to the conduit clamps on the bracket but first mark both ends of one conduit piece with tape. When looking at the clamps on the bracket from the back (the side with the gussets) place one end of the taped conduit into the right conduit clamp and tighten the clamp. Place one end of the other conduit into the other clamp and tighten (Fig. 1).
3. Run the conduit down through the oblong hole on the port side of the generator shelf (directly above the engine) (Fig. 2). Connect the taped conduit to the starboard conduit clamp on the top of the lower sheave and connect the other piece of conduit to the port clamp, tighten the clamps well (Fig. 3). Leave the bracket loose in the generator compartment, it will be attached to the bottom of the steering pedestal after the boat has been decked (Fig. 2).
4. The longer conduit pieces should be at the aft end of the lower sheave and will need to be attached to the lower aft conduit clamps. Connect the conduit with the tape to the starboard clamp then connect the other conduit to the port clamp. Tighten the clamps well.
5. Run 7 feet of the stainless steel cables thru the top of the conduit clamps on the steering bracket then down the conduit to the lower sheave. Take the end of the cables and run them around the pulley then into the conduit heading aft. Go back to the steering bracket then run 3 more feet of cable into the conduit. At this point start coating the cable with super lube and run the rest of the cable down into the conduit. The reason the first 10 feet of cable is not greased is so trash will not stick on the exposed cable at the aft end.

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## QUADRANT INSTALLATION

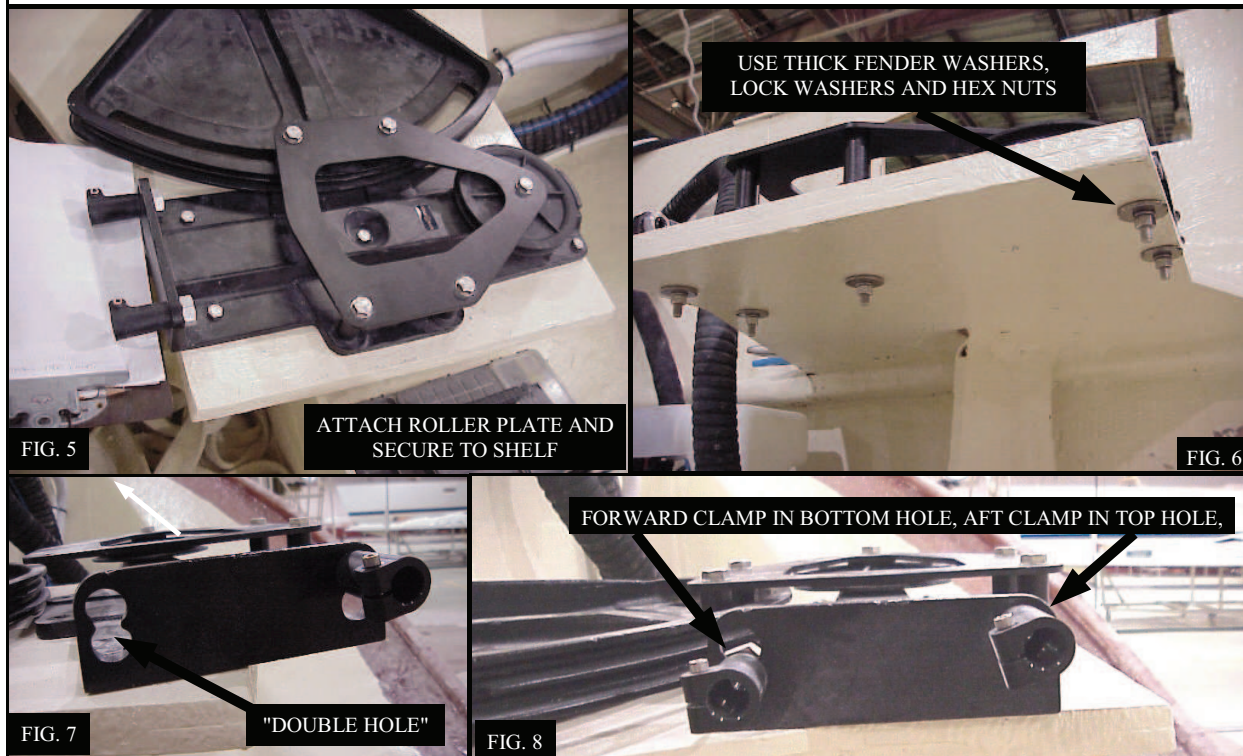


1. The quadrant and roller plate will be located on the center shelf, just aft of the aft kickboard, where the top of the rudder post is. To prepare the quadrant the screws will need to be backed off the split clamp on the quadrant (where the quadrant will be tighten to the rudder shaft) and if the rudder pin is going thru the quadrant it will need to be removed (Fig. 1).
2. From the bottom of the hull, slide the temporary rudder shaft up thru the rudder post (Fig. 2) and push up hard enough so it will stay (Fig. 3). From the top, slide the quadrant (flat side of quadrant goes down) over the top of the rudder post until it bottoms out, then tighten the quadrant to shaft (tighten the screws evenly and never use more than 30ft.-lbs.) (Fig. 4). Slide the base of the roller plate under the quadrant, the top groove in the quadrant should be the same height as the groove in the pulley on the roller plate. If the quadrant is to low measure how much it needs to be raised then remove the quadrant and add the appropriate amount of shims to achieve this. These shims should be machined out of UHMW tubing. Replace the quadrant onto the rudder shaft and tighten well (do not exceed 30ft.-lbs.).

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## ROLLER PLATE INSTALLATION



1. Place the roller plate aft of the quadrant so the pulley is on the starboard side. Remove the two bolts and spacers on the forward side of the roller plate then slide the roller plate forward until the two spacers will fit into the cutout on the quadrant. Reattach the spacers and bolts to the roller plate (Fig. 5). There is the possibility that no shims were needed under the quadrant and the roller plate will need to be raised and/or leveled. If this is the case then use 3/8" flat washers to raise or level the roller plate.
2. Position the roller plate so the center mounting hole is directly aft of the center of the rudder post. Rotate the quadrant port to starboard then move the roller plate forward or aft so the quadrant and the roller plate do not rub. When the roller plate is positioned correctly drill thru the five mounting holes with a 3/8" drill bit. Attach the roller plate to the shelf using 3/8"-16 x 2-1/2" bolts, thick fender washers, lock washers, and 3/8"-16 hex nuts (Fig. 6).
3. Two conduit clamps will need to be attached to the port side of the roller plate. The aft clamp will go thru the top part of the "double hole" and the forward clamp will go thru the bottom part of the other "double hole" (see pictures for clarification) (Fig. 7 & Fig. 8).