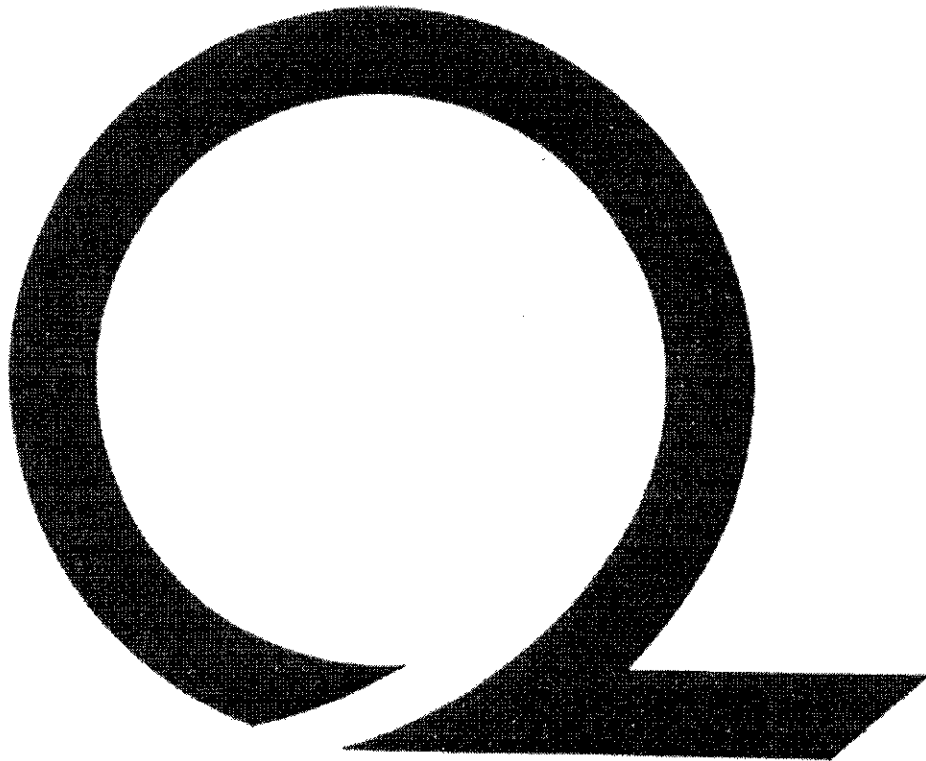


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INSTALLATION INSTRUCTIONS

SELF LEVELING
RADAR ANTENNA MOUNT
MODELS 100GA, 100GF



QUESTUS MARINE, INC.
P.O. BOX 9
MARBLEHEAD, MA 01945
TEL (781) 639-1900
FAX (781) 639-1905

**INSTALLATION INSTRUCTIONS
MODELS 100G, 100GF
QUESTUS SELF LEVELING RADAR MOUNT**

Congratulations, you have just purchased a system designed to maximize your return on your investment in marine radar.

Please read over these instructions fully before attempting to install your Questus Self Leveling Radar Mount (hereafter referred to as the "Q-mount").

BEFORE YOU BEGIN:

- A. Set up your work area. In most cases the assembly and installation can be performed in the cockpit of the boat with the pole laid fore and aft and the bottom end of the pole near the transom. (See figure 1.)

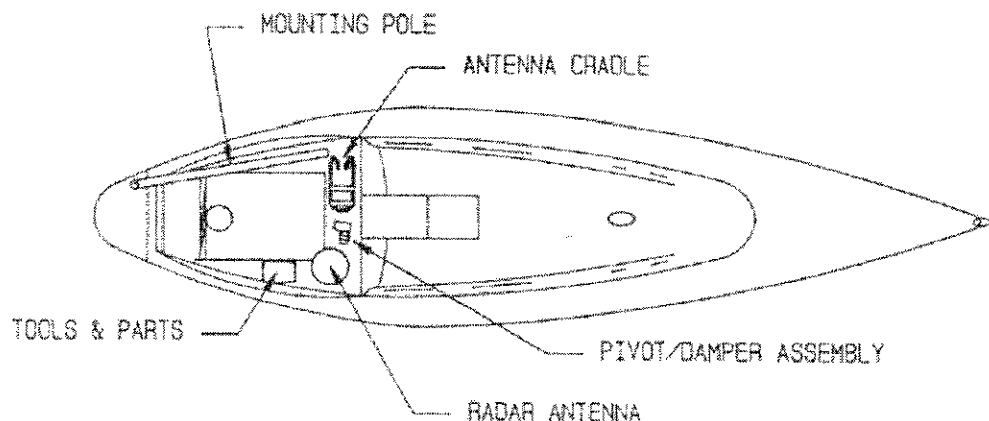


FIGURE 1

- B. Tools required: In addition to the three hex key wrenches supplied with the kit you will need pliers, a screwdriver, a roll of rigging tape and spare cotter pins or seizing wire. Consult the radar manufacturers installation instructions for tools required to connect the antenna.
- C. Install the electrical cable connecting the radar antenna to the display unit in such a way that 16 feet (4.5 meters) of cable extends from the chainplate to the end of the cable to be connected to the antenna. (**NOTE:** If a hydraulic backstay adjuster adaptor is to be used please refer to separate installation instructions.) Some of this cable length is slack, included to greatly ease installation and removal of the Q-mount. Provisions should be made to store this surplus cable below deck after installation.

STEP 1: VERIFY KIT MATERIALS

Open the boxes and verify that your Q-mount was supplied to you with the following components (see figure 2):

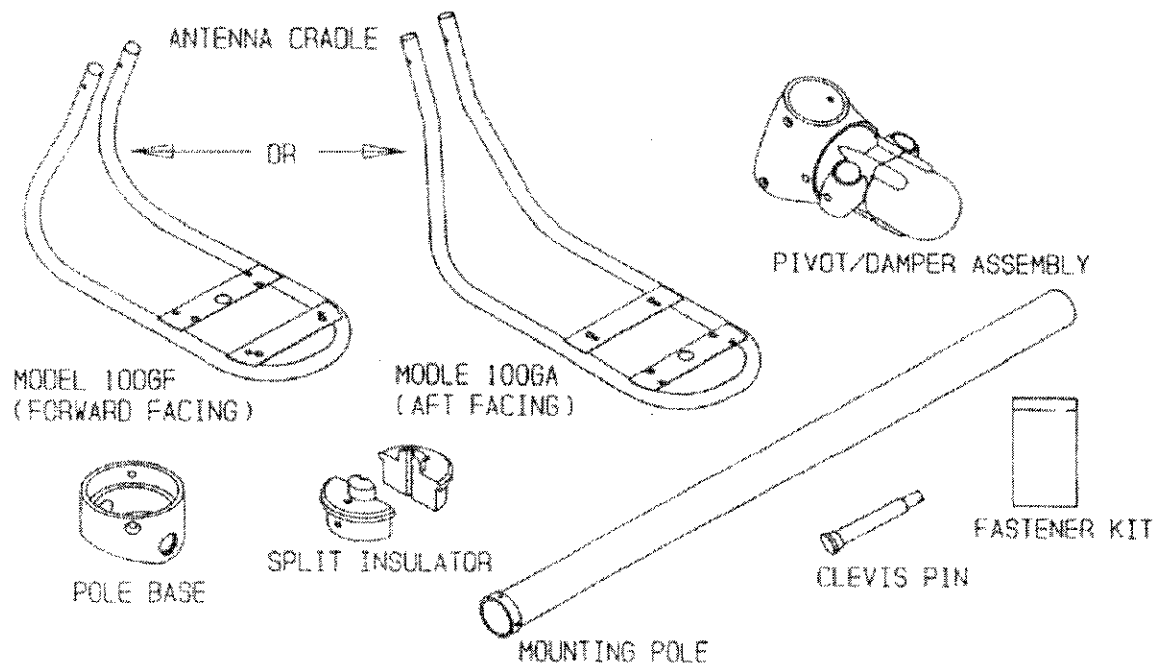


FIGURE 2

QTY	DESCRIPTION
1	ASSEMBLY, PIVOT/DAMPER
1	ASSEMBLY, MOUNTING POLE
1	ASSEMBLY, CRADLE, (FORWARD OR AFT FACING)
1	2-1/2" POLE BASE
2	SPLIT INSULATOR (SPECIFY WIRE DIAMETER)
1	CLEVIS PIN (SPECIFY CLEVIS DIAMETER)
1	FASTENER KIT

Verify that the hole through the split insulator is the same diameter as the backstay.

Verify that the clevis pin diameter is the same as the one presently connecting the backstay to the chainplate.

The fastener kit pouch contains the following items:

QTY	DESCRIPTION
6	1/4-20 SOC FLAT HD CAP SCREW 3/8" LG
2	1/4-20 SOC FLAT HD CAP SCREW 5/8" LG
2	1/4-20 SOCKET HD CAP SCREW 1-1/2 LG
1	HEX KEY, 5/32"
1	HEX KEY, 3/16"
1	HEX KEY, 1/4"
1	LOCTITE REMOVABLE THREAD LOCKER, .5ml CAPSULE
2	DOMED HOLE PLUGS (7/8" HOLE DIA)
1	3/32 DIA X 1.50 LG COTTER PIN
1	RUBBER EDGE GUARD
3	CABLE TIE
1	3/8" WASHER

STEP 2: ASSEMBLE THE Q-MOUNT

- A. Assemble the antenna cradle to the pivot/damper assembly (**NOTE: GPS Kit should be installed here**) and fasten together using the [2] 1-1/2" long socket head cap screws (see figure 3). Be sure the centerline of the bullet shaped pivot/damper is parallel with the base of the antenna cradle. Use a few drops of Loctite on each screw to prevent unwanted loosening. Due to the fact that the cradle is a weldment a slight mis-alignment may be seen between the four holes that mount to the Pivot Damper. This mis-alignment is normal and will properly align correctly with a slight push on the cradle base when installing the screws. Insert the plastic domed hole plugs in the exposed ends of the tubes.

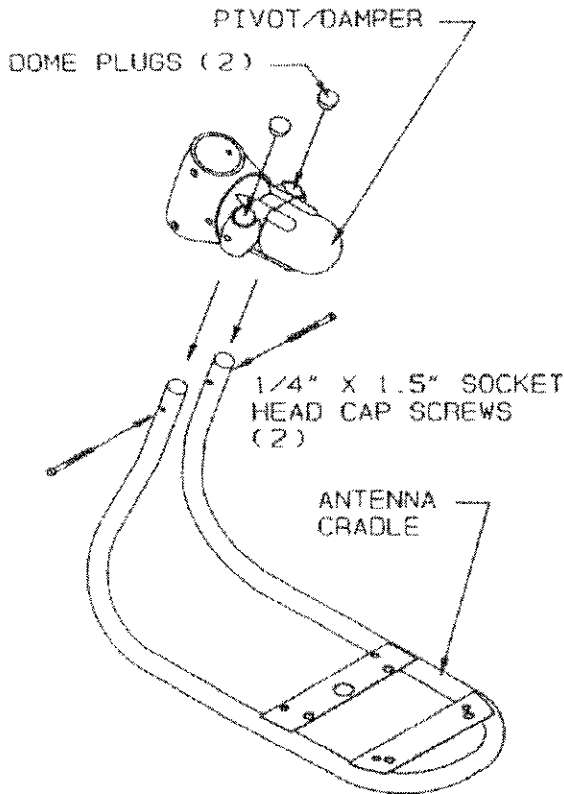


FIGURE 3A

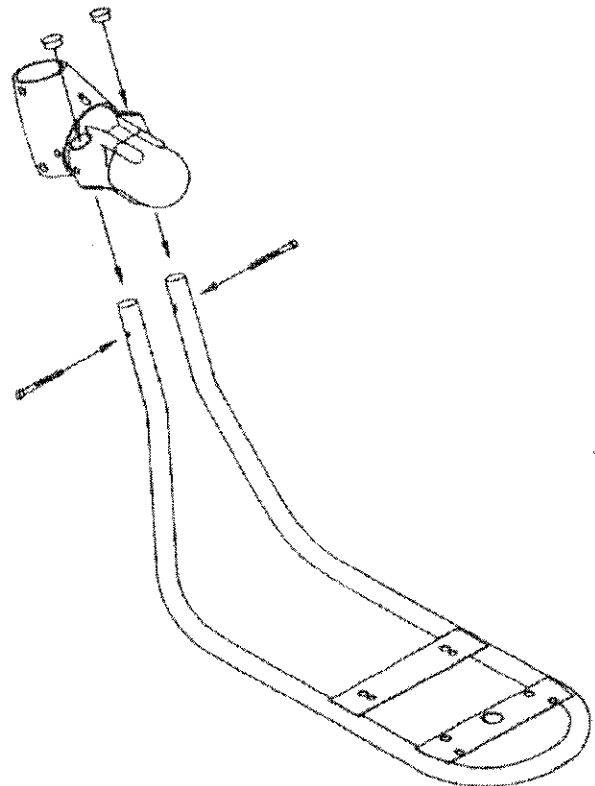


FIGURE 3B

- B. Rotate the base of the pivot/damper to horizontal and slide the mounting pole into the bore (see figure 4). Line up the four holes in the tube with those in the pivot/damper making sure the 1" slot for the antenna wire is on the opposite side of the pole from the antenna cradle. Put a few drops of Loctite on the two 3/8" long flat head screws and insert them into the two holes farthest from the open end of the tube.

- C. The process used to paint the components of the system occasionally may have a build up of paint at the edges. A slight sanding of the edges may be required to mate parts.

WARNING DO NOT APPLY EXCESSIVE TIGHTENING TORQUE TO THESE SCREWS; 35 in lbs (4 Newton meters) MAXIMUM TIGHTENING TORQUE.

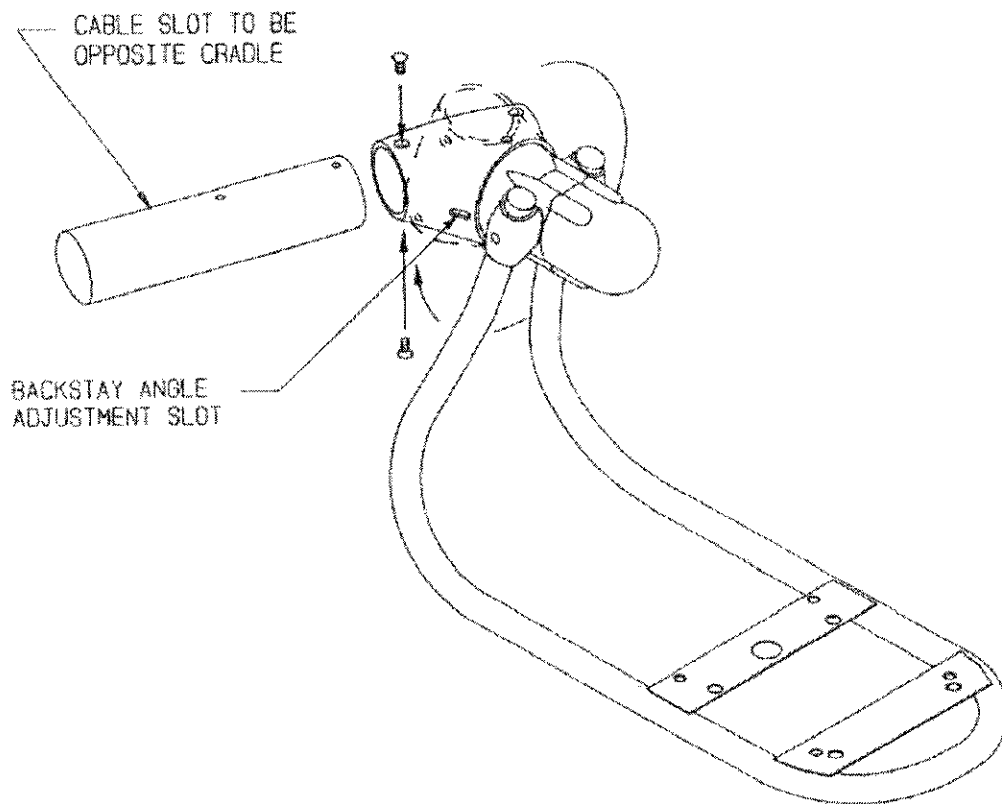


FIGURE 4

- C. Adjust the angle of the cradle so that the antenna will be level fore and aft after installation by inserting and turning the 1/4" hex key in the slot on the pivot/damper. (NOTE: This operation can also be performed after installation.)

STEP 3: INSTALL THE RADAR ANTENNA AND CABLE

- A. Determine if there is clearance for the cable to get by the largest fitting on the backstay when the backstay is centered in the mounting pole. If there is not adequate clearance the cable must be run external to the pole.
- B. If the wire is to go inside the mounting pole, slide the radar cable up the length of the pole and pull it out the 1" wide oval slot near the upper end. If your antenna has a bottom cable entry, route the cable through the 1" dia hole in the bottom of the cradle. Install any other wires in the same manor (see figure 5).
- C. Connect the cable to the radar antenna per the manufacturer's instructions and bolt the antenna to the cradle.
- D. Leave enough slack in the antenna cable coming out of the pole to the cradle to allow the cradle to swing freely as shown in figure 5 below.

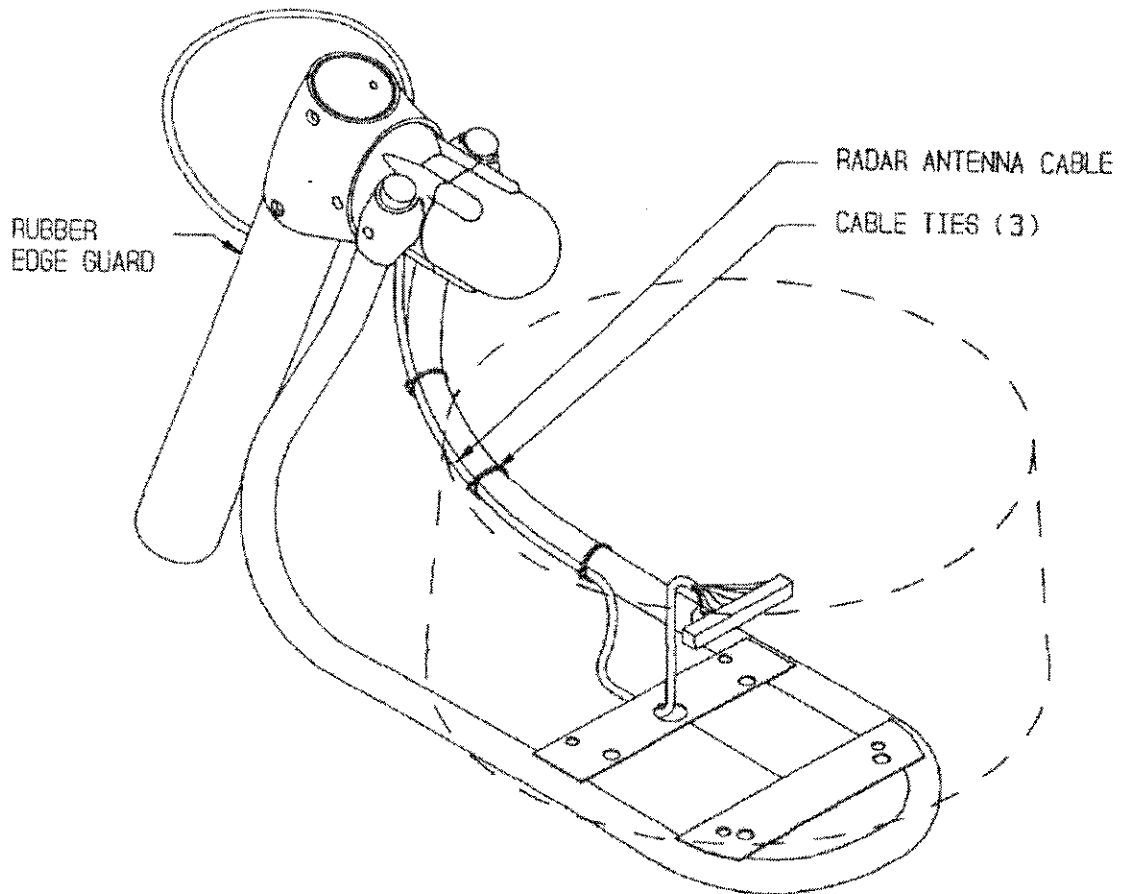


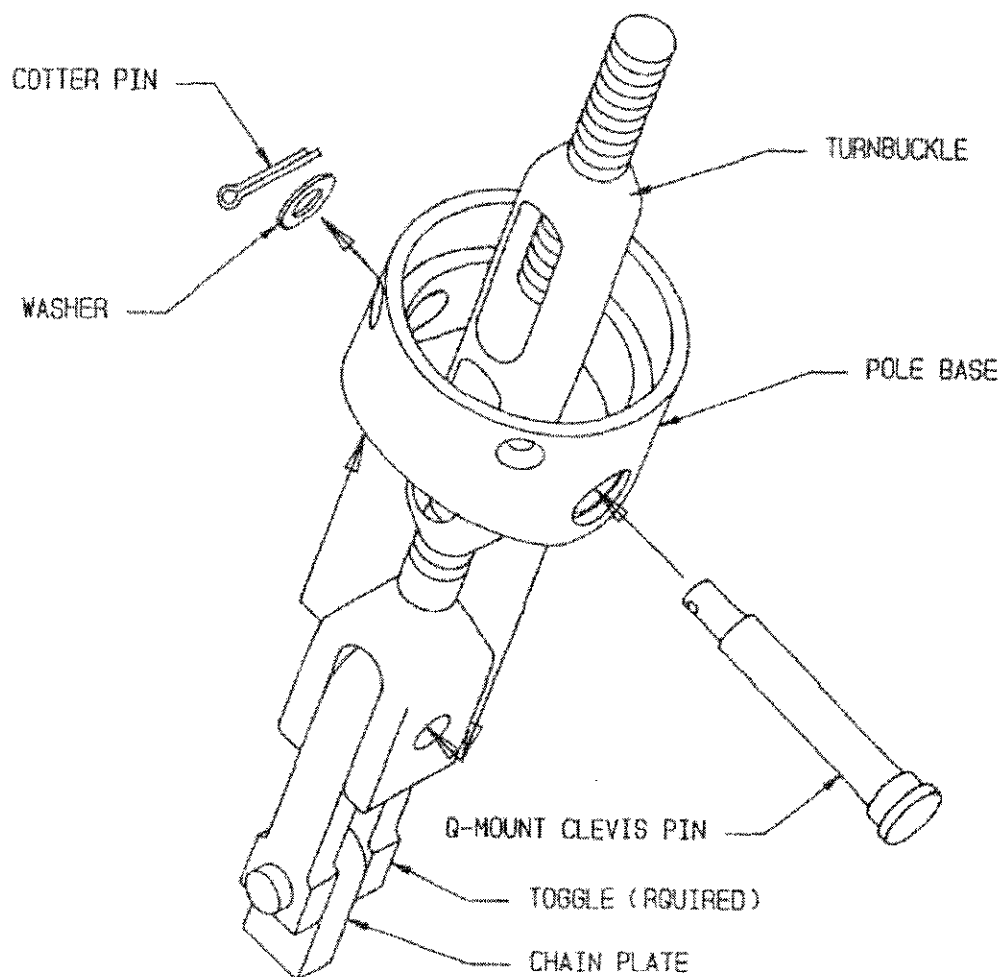
FIGURE 5

- E. Install the rubber edge guard included in the kit to the oval opening in the mounting pole to prevent chafing of the cable.

STEP 4: DISCONNECTING THE BACKSTAY

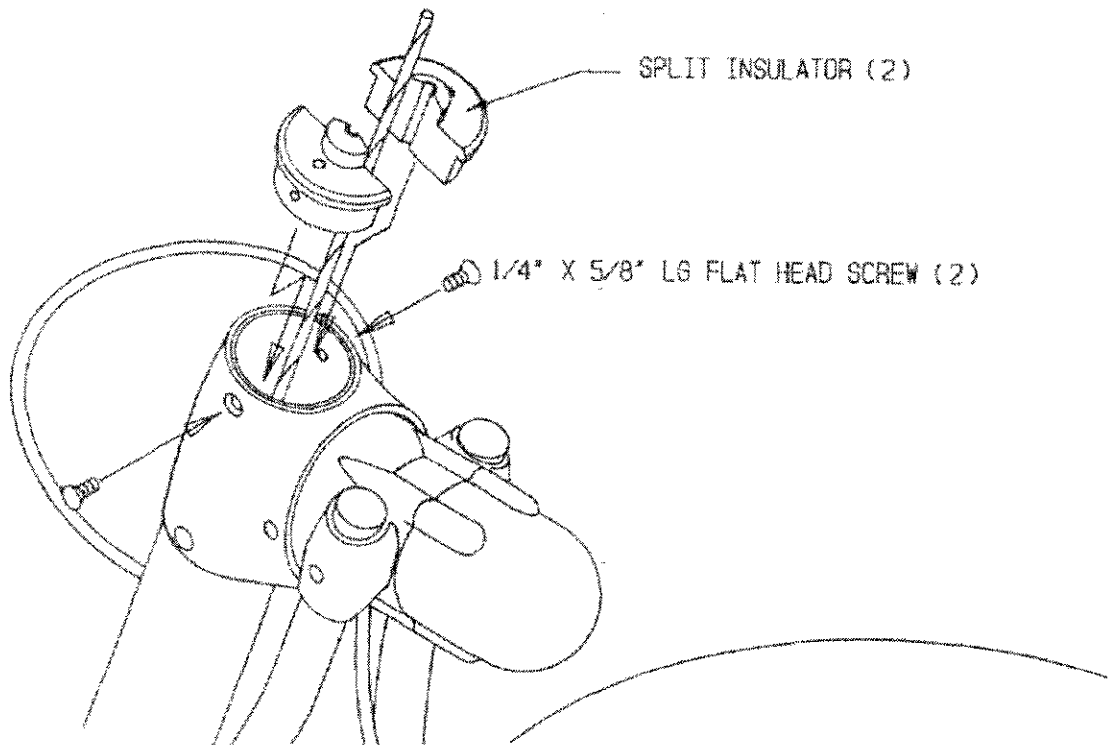
CAUTION Installation of the Q-mount requires disconnecting the vessel's backstay. If you are unsure of the proper procedures, this task should be referred to a qualified rigger.

- A. Be certain the mast is adequately supported before disconnecting the backstay.
- B. Loosen the backstay turnbuckle all the way until it separates. Remove existing clevis pin at coupling and replace using Questus Clevis Pin and Base Ring (see figure 6). (**NOTE:** If a hydraulic backstay adjuster adaptor is to be used please refer to separate installation instructions.) **NOTE:** A toggle should be installed between the chainplate and the turnbuckle.

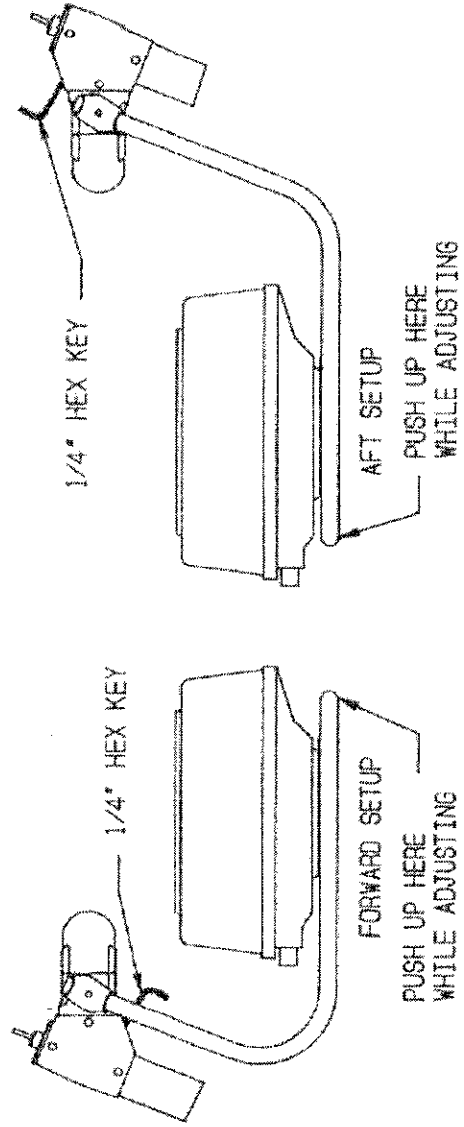


STEP 5: Install THE Q-MOUNT

- A. Feed a 3/8" to 1/2" line down the inside of the Mounting Pole until it comes out the lower end. Attach the upper end of the backstay just above the turnbuckle end with a double clove hitch. Put a bowline right next to the clove hitch.
- B. Using existing boat hardware, i.e. cleats; make a bridle at deck level just forward or aft of chainplate. Attach small block and tackle to bridle. Other end of block and tackle will be attached to the bowline in line coming down inside of Mounting Pole once bowline appears at lower end of pole.
- C. Using line in pole, pull backstay lower end into Mounting Pole a sufficient distance to allow split insulator halves to be installed.
- D. Place the two halves of the split insulator in the top end of the pole. Align the threaded holes in the insulator with the top hole in the pole assembly and fasten using two 5/8" long flat head screws (see figure 7). When installing the split insulator the screws should be noticeably tight. This is required so the screws do not back out. Do not re-tap the holes to make it easier to assemble. **(NOTE:** Single and double antenna kits may be installed at this point and wires run down inside of the Mounting Pole).
- E. Using Either the vessel's main halyard or second person raise the Q-mount up the backstay while pulling on the 3/8" line until the turnbuckle end and bowline is exposed at the bottom. Connect the block and tackle and use it to tension the backstay so the turnbuckle can be reconnected.



- F. Tighten the backstay turnbuckle and lock in place using cotter pins or seizing wire. Tape all fittings particularly where there is potential chafing between the fitting and the antenna cable.
- G. Slide the mounting tube down the backstay and line up the four holes in the pole base with the holes in the pole. Using four 3/8" long flat head screws with a few drops of Loctite on each, fasten the pole base to the pole. (NOTE: If a hydraulic backstay adjuster adaptor is to be used please refer to separate installation instructions.)
- H. From a ladder or bosun chair, insert the 1/4" hex key in the slot on the pivot/damper to adjust the antenna to level fore and aft, lifting the outer end of the cradle while ease this process. (see figure 8)

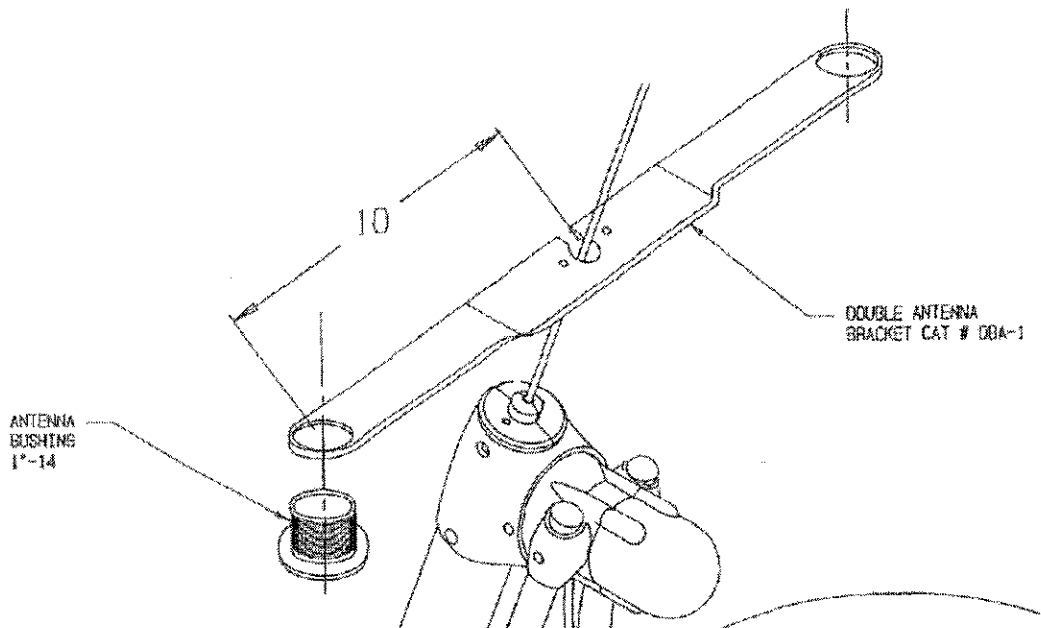


**MODEL 100G
DBA1 DOUBLE ANTENNA KIT**

1. The DBA1 Double Antenna Kit contains the following parts:

<u>ITEM</u>				
<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>		<u>QTY</u>
1	100105-005	1/4-20 Button Head Screw		2
2	102274-000	Double Antenna Bracket		1
3	100361-005	Lockwasher		2
4	102096-000	1"-14 Threaded Bushing		2
5	102137-000	Installation Instructions		1

2. The DBA1 Bracket is designed to be assembled to the split insulator at the top of the Model 100 Mounting Pole, using (2) Button Head Screws and Washers. The 1"-14 Threaded Bushings insert thru the Bracket from the bottom and accept most Marine Antenna bases. The Bushing holes are 10" away from the backstay which allows the installation of TV Antennas up to 18" in diameter. When you mount the DBA1 make sure that the portion of the bracket where the Bushings insert; is horizontal.

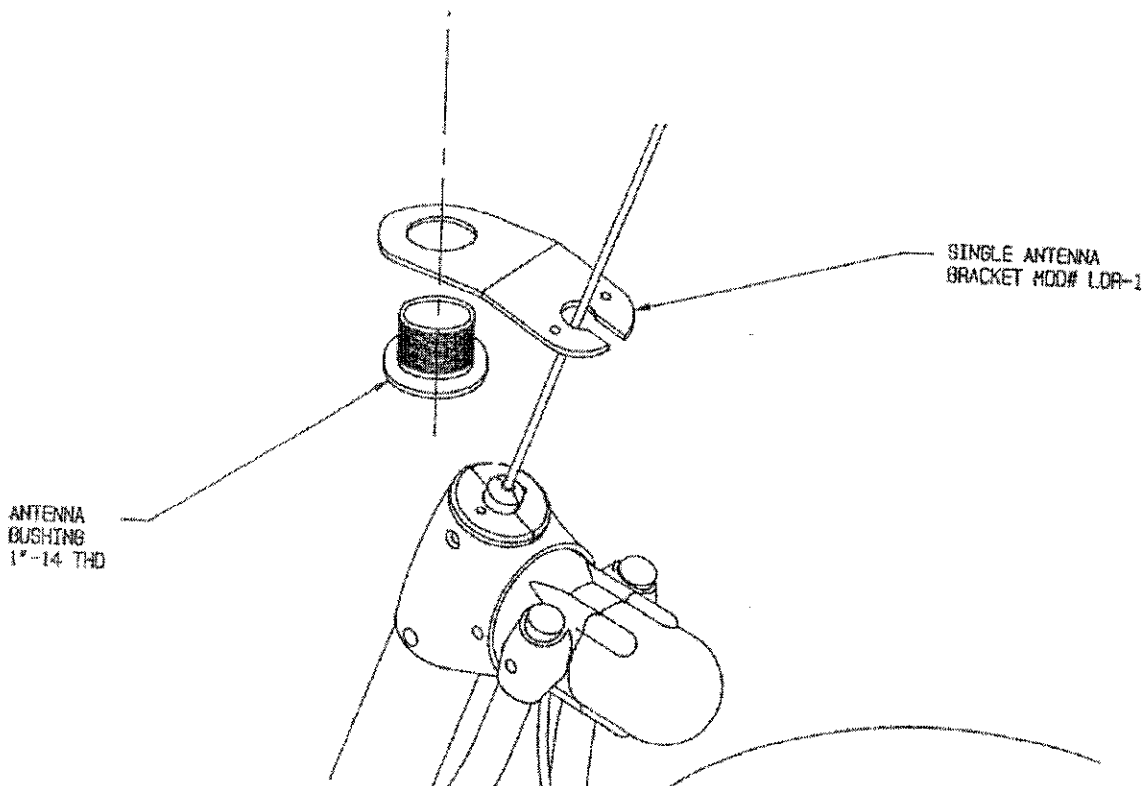


**MODEL 100G
LOR1 SINGLE ANTENNA KIT**

1. The LOR1 Single Antenna Kit contains the following parts:

ITEM				
<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>		<u>QTY</u>
1	100105-005	1/4-20 Button Head Screw		2
2	102212-000	Single Antenna Bracket		1
3	100361-005	Lockwasher		2
4	102096-000	1"-14 Threaded Bushing		1
5	102137-000	Installation Instructions		1

2. The LOR1 Bracket is designed to be assembled to the split insulator at the top of the Model 100 Mounting Pole, using (2) Button Head Screws and Washers. The 1"-14 Threaded Bushing inserts thru the Bracket from the bottom and accept most Marine Antenna bases. If the LOR1 is being installed on a Model 100GA with a GPS2 Kit, you will need to make a spacer 1" high to fit between the split insulator and the single antenna bracket. 1/4-20 X 1 1/2" long screws will replace the screws provided with the LOR1 Kit. This is necessary to prevent the GPS2 Bracket hitting the LOR1 Bracket during gimbaling of the Radar Dome. sure that the portion of the bracket where the Bushings insert; is horizontal.



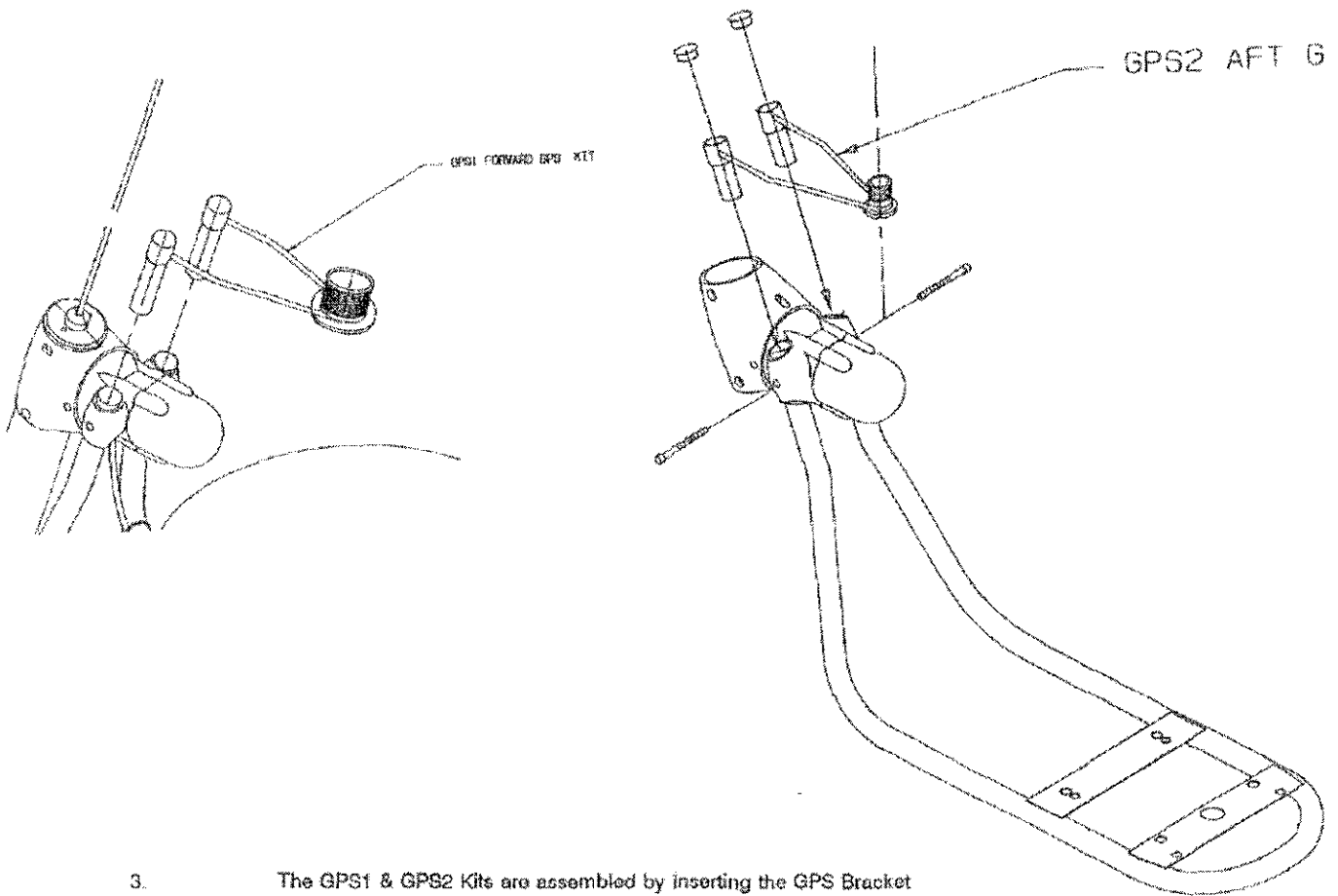
MODEL 100G
GPS1 (FWD) & GPS2 (AFT) ANTENNA KITS

1. The GPS1 Forward GPS Kit contains the following parts:

ITEM			
<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>
1	102329-000	Forward GPS Bracket	1
2	102239-002	Dome Plug	2
3	100361-007	Lockwasher	1
4	100104-021	Soc Head Cap Screw	1
5	102333-000	Magnevox Adapter Plug	1

2. The GPS2 Aft GPS Kit contains the following parts:

ITEM			
<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY</u>
1	102330-000	Aft GPS Bracket	1
2	102239-002	Dome Plug	2
3	100361-007	Lockwasher	1
4	100104-021	Soc Head Cap Screw	1
5	102333-000	Magnevox Adapter Plug	1



3. The GPS1 & GPS2 Kits are assembled by inserting the GPS Bracket tubes into the top of the Cradle tubes after they have been installed into the Pivot/Damper Assembly.
4. Install (2) 1/4-20 X 1 1/2" Socket Cap Screws thru Pivot/Damper Housing, Cradle Tubes, and GPS Tubes. Tighten screws.
5. Install dome plugs into top of GPS Bracket tubes.