SATELLITE TRACKER ASSEMBLY INSTRUCTIONS.

Using your residence dish antenna or purchasing an additional one for your boat.

CAUTION: Double check that you do not insert the azmith cable and the vertical motor cable in the wrong connectors.

The 3 pin connectors on the power cable can be forced on the wrong way which may damage the connector and blow fuses.

Complete the power cable connections to the azmith drive before final mounting because access to its electrical panel will usually be impossible after you mount it.

ANTENNA

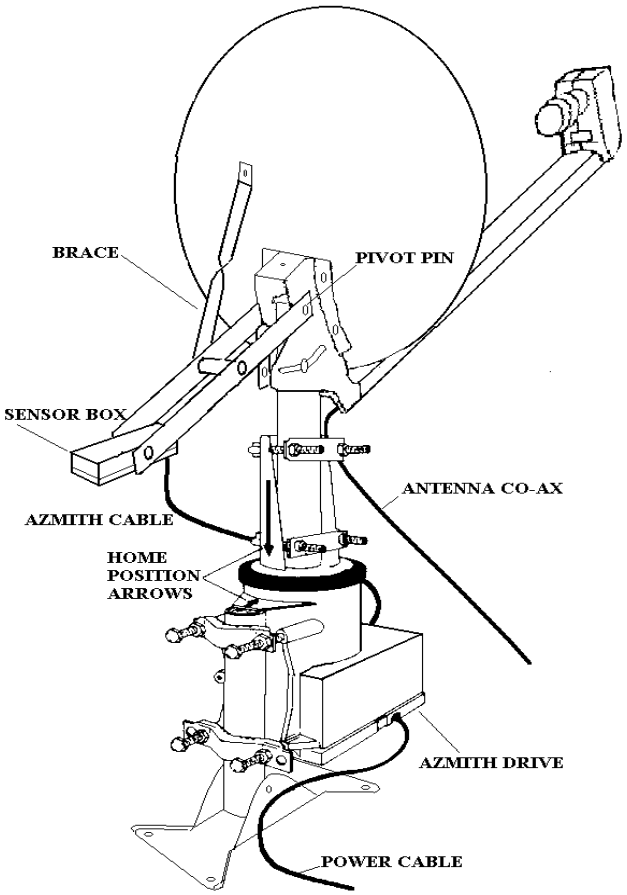
On a boat, there must be sufficient clearance from all objects for 360° of antenna rotation, typically 18" radius. The antenna mounting height does not help reception except to avoid objects in the line of sight to the satellite. Thin cables or stick antennas are not too troublesome but wood, or fiberglass panels with wood cores, will seriously degrade the signal. Wet fiberglass without a core can also degrade the signal.

The bottom cover of the azmith drive is not sealed. Do not install it in a location where it will be immersed or receive hard water. The bottom cover can be sealed with caulking if desired however access to the power cable connection will be difficult.

If you have purchased a separate dish for mounting on your boat, you can cut off the mounting tube just before the 45° bend and use the base as shown in the drawing. Otherwise you will need to provide a vertical 1½" to 2" OD pipe base to hold the rotor. The two saddles and four 2" bolts with nuts lock the rotor to the mounting pole with the vertical weight being taken by the tab at the top. One of the saddles has extra holes for terminating guy wires if the mounting pole requires additional support. Avoid over-tightening the nuts and crushing the mounting tube.

Mount the supplied pipe in the rotor using the two U bolts. The pipe length allows clearance for the vertical motor kit and vertical motion to the lowest angle which you will only need in northern latitudes. The overall height the pipe can be shortened, but wait until assembly is finished to determine clearances. Tighten the nuts on the U bolts so the straps spring slightly and hold the pipe firmly but able to rotate under overload or manual antenna adjustment (about ½ turn more on each of the 4 nuts after fully hand tightening).

Assemble your dish according to the manufacturer's instructions. Refer to the drawing for the sensor arm assembly. The ends of the two aluminum arms mount on the sensor box using ¼" hex nuts supplied. Do not remove the nuts against the box which retain the studs. The cable connectors exit downward and are located closest to the dish.

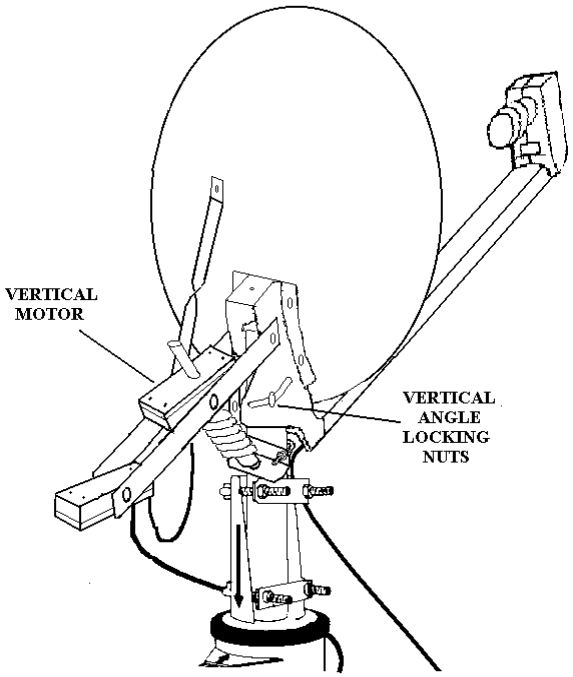


If you have the vertical motor kit assemble it as described below, otherwise retain the plastic tubular spacer and stainless hex bolt in the center holes and attach the brace under one end.

Replace the original antenna pivot bolt with the 4" hex stainless bolt supplied, placing nylon spacers between the aluminum straps and the dish mount as required. Use a locknut to hold the pivot bolt firmly but not tight. Swing up the brace and position the end so the sensor arm is approximately parallel to the arm on the dish supporting the antenna. Drill a ¼" hole in the dish and attach it with the ¼" x **d**" stainless bolt and a hex nut. A little caulking in the hole will help prevent the edges rusting.

Mount the dish assembly on the rotor pipe and tighten securely.

VERTICAL MOTOR KIT



Loosen the vertical angle locking nuts which normally secure the antenna and check for unobstructed vertical movement of the dish over the vertical angle range. Assemble the motor to the center holes of the arms. Do not remove the nuts against the PVC motor box which retain the studs. The cable should exit closest to the sensor box. The aluminum brace mounts under one of these vertical motor box nuts, outside of the aluminum arm. Use the two ¼" lock nuts to hold the motor firmly but loose enough to pivot freely.

Attach the bracket and collar to the pipe about 2 inches below the dish and secure. The threaded motor shaft should be loose enough in the grommet to change angle with vertical motion but not loose enough to rotate. The second grommet acts as a spring and prevents any vertical slack. Plug the motor cable into the "Elevation" connector on the sensor box (the one with the cover). The connector locking ring rotates approximately 120° to make a waterproof seal as you insert the plug.

For optimum operation of the vertical motor, a counterweight is required to balance the antenna arm. Mount the weight supplied according to the instructions supplied.

ELECTRICAL WIRING

The installation should anticipate up to 2½ revolutions maximum in either direction for the rotor and antenna co-ax cables. This action can be tested before applying power by manually rotating to check cable orientation. The azmith and co-ax antenna cables should be arranged so they track freely, avoiding any friction points.

The azmith drive cable plugs into the "Azmith" connector on the sensor box (the one without a cover). Do not lengthen or shorten the azmith cable. The connector locking ring rotates approximately 120° to make a waterproof seal as you insert the plug.

Connect a three conductor 20 gauge or heavier power cable to the removable plug inside the azmith drive. Do **not** use shielded cable. If no control panel is used, the Signal conductor should not be connected at this time to avoid undesired noise pickup. If you never anticipate installing the control panel, you may substitute a 2 conductor cable.

Use the cable entry grommet and additional support if necessary so accidental tension on the cable does not pull on the connector. The power supply end connects to the corresponding terminals on the control panel plug if used, or just wire to 12 volts DC. When using a control panel, parallel the 12 volt supply to the + and - terminals on the control panel plug. You should have a distribution fuse or circuit breaker where the power is supplied to protect against cable or wiring shorts. A convenient on/off switch will be required if you do not use a control panel.

Accepted guidelines require that you run a suitable lightning ground from the antenna assembly to your lightning ground. The 12 volt electrical system is isolated from the metal structure however the co-axial antenna cable is not. Although the protection provided from a direct hit is dubious the grounding may protect the Satellite Tracker and your receiver from indirect discharges.

CONTROL PANEL

The control panel mounts on a flat surface so that it is not distorted during assembly which could affect the touch switch clearance adjustments. The panel is waterproof from the front, but not behind so exposed locations should be avoided in case the seal to the mounting surface should leak.

Mount the panel using the four #4 screws supplied and use a sealing compound if the installation has to be waterproof. Some sealing compounds may soften the front panel overlay so masking and careful application should be observed. The cut-out for the panel is 2 1/8" diameter (the same size as door locks).

Static electricity is not usually a problem in the marine environment however if your installation could be subjected to electric discharge, ground the control panel with a separate ground strap connected to one of the cover nuts on the rear of the panel.