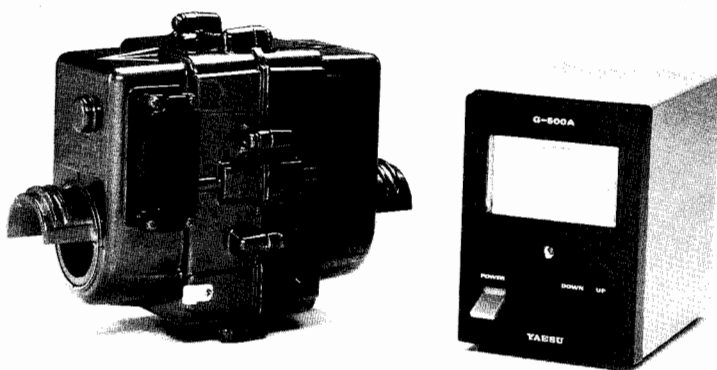


INSTRUCTION MANUAL G-500A



YAESU MUSEN CO., LTD.
C.P.O. BOX 1500
TOKYO, JAPAN

YAESU G-500A

MEDIUM-DUTY ANTENNA ELEVATION ROTATOR & CONTROLLER

The Yaesu G-500A provides 180° elevation control of unidirectional satellite antenna arrays under remote control from the station operating position. The factory-lubricated rotator unit is housed in weatherproof melamine resin coated die-cast aluminum, to provide maintenance-free operation under all climatic conditions.

The controller unit is a handsomely-styled desktop unit which indicates antenna elevation offset from zenith up to 90° in both directions.

Please read this manual carefully before installing the G-500A.

SPECIFICATIONS

Voltage requirement: 110-120 or 220-240 VAC	Pointing accuracy: ±3 percent
Power consumption: 30 VA	Control cable: 6 conductors - #20 AWG or larger
Motor voltage: 24 VAC	Mast diameter: 38-63mm (1-½ to 2-½ inches)
180° rotation time (approx.): 61 seconds @ 60 Hz	Boom diameter: 32-43mm (1-¼ to 1-5/8 inches)
Rotation torque: 1000 kg-cm (73 ft-lbs)	Weight: Rotator: 3.3 kg (7.3 lbs) Controller: 1.7 kg (3.7 lbs) Packaged: 5.5 kg (12.1 lbs)
Stationary braking torque: 2,000 kg-cm (145 ft-lbs)	

UNPACKING & INSPECTION

When unpacking the rotator confirm the presence of the following items:

Rotator Unit	1
Controller Unit	1
Plastic Bag containing:	
(1) 8mm Split washer	8
(2) 8mm Nut	8
(3) 8mm Flat washer	8
(4) 8mm dia Stud bolt	4
(5) Pipe clamp	6
(6) U-Bolt	2
(7) 6mm Flat washer	4
(8) 6mm Split washer	4
(9) 6mm Nuts	4
Spare Fuse	
(117V:1A, 220V:0.5A)	1

If any of these items are missing or appear to be damaged, save the carton and packing material and notify the shipping company (or dealer, if purchased directly at his shop).

Before proceeding with installation, confirm that the AC voltage label on the rear of the Controller matches your local line voltage: either "117V" for 110 to 120 VAC, or "220" for 220 to 240 VAC. If the labelled voltage range does not match, return the controller to the dealer from whom you purchased it (different power transformers are installed for the different voltage ranges).

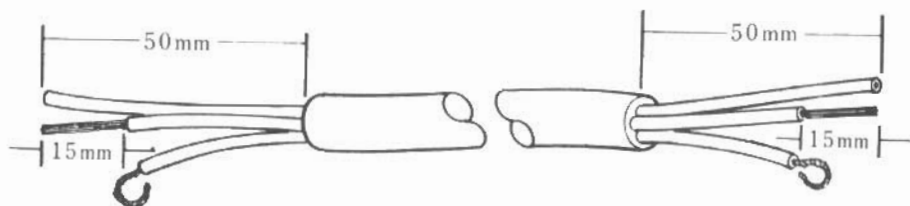
Note that cable is not included with the rotator, as the length must be determined case-by-case. Contact your Yaesu dealer to obtain the length of cable your installation requires. For runs of over 100 feet, use #18 AWG instead of #20 AWG.

CONTROL CABLE PREPARATION & CONNECTION

Before installing the antenna and rotator, make all connections and test rotator operation thoroughly on the ground.

Your control cable should have six conductors of at least #20 AWG gauge (if less than 100 feet long).

- (1) Remove the terminal box cover from the rotator, and push one end of the cable through the grommet in the cover about 30 cm.
- (2) Using special care to avoid nicking the insulation of the individual wires, strip back about 50mm of the outer jacket of the cable from each end, and then strip 15mm of insulation from each wire.
- (3) Twist the strands of each wire, and form each into a hook large enough to encircle the terminal screws on the rotator and controller. Then lightly tin each hook with solder (both ends of the cable should be prepared in the same way).



- (4) Connect each wire to a terminal, numbers 1 - 6, on the rotator (terminals 7 and 8 are not used). Note the color of the wire at each terminal.
- (5) Referring to your notes of the wire color at each terminal on the rotator, connect the wires to the terminals on the controller so that the wire from each terminal on the rotator connects to the terminal with the same number on the controller, i.e., 1 to 1, 2 to 2, etc.

- (6) On the controller, make sure that the POWER switch is in the OFF position, and connect the line cord to the AC power outlet.
- (7) Turn on the POWER switch. The meter lamp should light and the meter indicate approximately 90° (center).
- (8) Press the UP switch. The rotator should turn as the meter indication moves to the right. Release the UP switch and confirm that the rotator slowly stops.
- (9) Repeat step 8, pressing the DOWN switch instead of the UP switch. The rotator should turn in the opposite direction as the meter indication moves to the left.
- (10) If operation does not occur as described above, check for a wiring error in the cable connections. When everything checks out in the above steps, slide the terminal cover over the rotator terminal box, and screw it tightly into place. Then remove the cable clamp from the rotator, clip it over the cable, and screw it back onto the rotator, leaving a little slack between the clamp and the terminal cover.

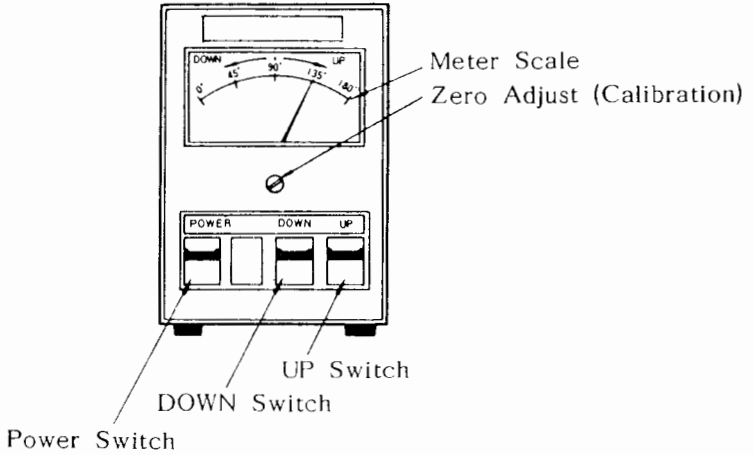
Notes on Controller Operation:

If both UP and DOWN switches are pressed at the same time the rotator turns clockwise (up).

Release the UP or DOWN switch when the meter indicates in the end zones. Holding the switch down may otherwise damage the rotator. Remember to turn the controller off when the rotator is not in use.

ELEVATION INDICATOR CALIBRATION

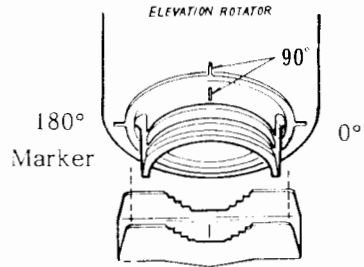
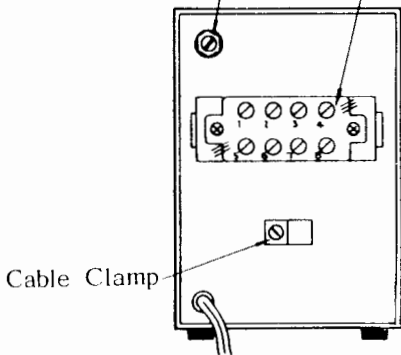
Turn the controller off and note the resting position of the meter needle, which should be precisely at the left edge of the scale. If not, adjust the zero adjust screw beneath the meter face.



Press the UP switch to align the 180° markers on the rotator. The meter should now point precisely to 180° (right edge of scale). If not, adjust the calibration potentiometer on the rear panel so that it does.

Full Scale Adjust
(Calibration)

Terminal Block



ROTATOR INSTALLATION

The G-500A is designed to accommodate small- and medium-size antenna arrays. The maximum safe load depends on the physical size of the antenna, method and quality of mechanical installation, and maximum wind velocity at the installation site.

The diagrams below show several recommended installations. Notice that the preferred mounting method requires that each antenna be attached to the boom at its center of gravity, with the boom then attached to the rotator at its center of gravity. This minimizes stress on the rotator and supporting structure, especially during strong winds.

- (1) Referring to Figure 1, screw one 8mm nut over the end of each stud bolt with the shortest thread. Slip a split washer over the thread, and screw each stud bolt into holes in the side of the rotator.
- (2) Slip an 8mm flat washer over each installed stud bolt, and then the pipe clamps, as shown in Figure 1. Place another flat washer and then a split washer over the end of each stud bolt, and start a nut on each to hold the hardware in place.
- (3) Slide the boom through the rotator.
- (4) Place one U-bolt over each arm of the rotator, and assemble one pipe clamp, flat washers, split washers and nuts on the



U-bolts as shown in Figure 1. Center the boom carefully, and alternately tighten the nuts on each U-bolt $\frac{1}{2}$ -turn beyond the point where the split washers are flattened.

Be sure to leave enough slack in both the elevation control cable and the coaxial cable feedline around the azimuth rotator so the antenna can rotate 180° without straining the cable or feedline.

For dual parallel arrays, feedlines should be taped to the boom on either side of the rotator, with enough slack left to allow 180° rotation without stressing the feedlines.

The rotator motor is rated for five-minutes intermittent duty. However, it can safely run continuously for as long as ten minutes providing that it be brought to rest for at least ten minutes afterwards.

NO	QTY	DESCRIPTION
1	8	8 ϕ SPRING WASHER
2	8	8 ϕ NUT
3	8	8 ϕ WASHER
4	4	8 ϕ STUD BOLT
5	6	BOOM/MAST CLAMP
6	2	U BOLT
7	4	6 ϕ WASHER
8	4	6 ϕ SPRING WASHER
9	4	6 ϕ NUT

Figure 1.

