

ASSEMBLY INSTRUCTIONS

MAGNETIC LOOP ANTENNAE AMA-3, AMA-5 & AMA-6

1. Before commencing assembly, check that the consignment contains all the parts listed in the packing list: do not commence assembly until all parts are to hand.
2. Reference to Top and Bottom refer to the completed aerial thus:
 - Aluminium loop top is the open end.
 - Capacitor top is the end opposite the motor.
 - Top end cap is the undrilled one.
 - Top of Bracket has the two small holes uppermost.
 - Top of Coupling Loop is the wire.
3. Lay the Aluminium Loop on a flat surface with the top towards you and put one locking gland nut, steel pressure disc and rubber sealing ring on either side of the lugs. Carefully place the ends of the Loop through the glands of the waterproof tub. Note that it is easier to turn the tub so that the bottom is towards you when inserting the first lug, then turning through 180 degrees to insert the second lug. Do not try to force the tub onto the loop as this can cause the glands to break away from the tub. When both lugs are inserted tighten the locking nuts finger tight only.
 - 3a. AMA-5 ONLY. Attach top clamp on Capacitor to one end of Aluminium pole: pole should not extend more than 5 mm above the top of the clamp. Push bottom waterproof cap onto bottom of pole.
4. Remove the nuts and washers from the top of the Capacitor and introduce it carefully through the bottom of the tub, pass the bolts through the holes in the lugs of the loop, replace washers and nuts and tighten. When tightening ensure that the assembly is lined up square and tighten the nuts as tight as possible; any looseness will prevent the efficient operation of the aerial.
5. AMA-3 & AMA-6 ONLY. Turn the assembly so that the bottom is towards you to attach the bracket. Remove two nuts and one half-tube clamp from the bracket, attach through the two holes in the bottom of the loop and replace half-tube clamp, washers and nuts finger tight only. Attach Coupling loop to bracket finger tight only.
5. AMA-5 ONLY. Turn the assembly so that the bottom is towards you to attach the bracket. Remove two nuts and one half-tube clamp and both U-Bolts from the bracket. Attach U-Bolts loosely around the Aluminium Pole and attach bracket to loop, replacing half-tube clamp, washers and nuts finger tight only. Attach Coupling loop to bracket and tighten fully.
6. Pass bare end of cable between bracket and loop and between bracket and coupling loop, and through bottom waterproof cap, and attach to tag-strip on motor observing polarity. Bend cable approximately 20 cms below tag-strip and attach small cable tie to prevent any pressure being put on the tag-strip connection when the cable is pulled taught through the bottom waterproof cap.
7. Tighten nuts holding coupling loop to bracket and holding loop to bracket, ensuring that the assembly is square.
- 7a. AMA-5 ONLY. Tighten U-Bolts to Aluminium Pole, ensuring that the loop is circular and not elliptical; do not overtighten as this will deform the bracket. Clip control cable to vertical pole with 5 large cable ties equally spaced, clip top of coupling loop to pole with one large cable tie.

8. It is recommended that the assembly be tested indoors at this stage before completion of waterproofing assembly.

9. AMA-3 & AMA-6 ONLY. Fit bottom waterproofing cap to waterproofing tub.

Turn the aerial so that the top is towards you, fit cap and repeat.

9a. AMA-5 ONLY, Fit bottom waterproofing cap to waterproofing tub.

Turn the aerial so that the top is towards you, fit the top cap and repeat.

10. Remove backing from self-amalgamating tape and apply around the bottom. Note that this tape should be stretched to more than twice its original length to ensure a fully waterproof seal.

INSTALLATION INSTRUCTIONS

When purchased, the aerial comes complete with a mounting bracket, SO239 socket to take a 50 ohm coax via a PL259 plug.

The length of the coax is not important though the shorter the length the better to reduce power losses.

CONTROLLER & MOTOR

The Control Box comes complete with a Din Plug that can be wired to a 5 to 6 volt D.C. source; an ideal unit is an adaptor de-

signed to plug into the mains with a 6 volt output such as is used to power a transistor radio or similar.

The motor normally operates at 1.5 volts and the control box reduces the voltage from 6 to 1.5 volts. It is imperative that the motor is correctly connected to the control box as excessive voltage will burn the motor out.

LOCATING THE AERIAL

The AMA-3 and AMA-6 aerials require a short pole about 5 feet long which can be mounted at ground level or on the side of a building. Additional height is unlikely to have any effect on performance, but it is important to note that the aerials should be as far away as possible from large metal objects or structures and from any other aerial that might be tuned at or near its frequency. If the SWR is high, try rotating the aerial a few degrees at a time to achieve the optimum SWR. The AMA-5 has its own mounting pole which should be slid into a three foot length of two inch diameter scaffolding pole or similar hammered well into the ground so that about 50% of its length is buried.

CONNECTION TO RADIO

Connect the aerial to an SWR meter or, if your radio has a built-in SWR meter, directly to the set, set the band you wish to use and, with the radio set to receive press one of the buttons on the control box and listen carefully for a sharp rise in noise or signal level.

When you think the signal level is at a peak, switch to tune position or AM using very low power (not more than 5 watts) and, by quickly pushing alternate buttons on the control unit, watch for lowest SWR. If you have gone past the correct tuning point, rock the main tuning dial back and forth to check that you have the correct tune point. On some transceivers it may be necessary to

If after all adjustments have been made the SWR is still too high check that the coax to the plug is wired correctly and that there are no metallic objects in the vicinity of the aerial that might be affecting its performance.

HINTS AND TIPS

As the aerial is a high-Q device the tuning point is very critical. It takes practice with the operation of the control box before the best results can be achieved.

If a longer lead is required on the control box, any 2-core cable can be used to extend it.

If the aerial is to be left outside for long periods of time, it is recommended to grease the mounting bracket bolts so that they do not rust up.

When the aerial is first used after a spell of idleness the SWR can jump erratically. This is due to moisture forming on the plates of the capacitor and will soon cease after a few bursts of CW.

PACKING LIST

	AMA-3	AMA-5	AMA-6
Aluminium Loop	1	1	1
Aluminium Pole		1	
Motor Driven Capacitor	1	1	1
Waterproofing Tub	1	1	1
End Caps	2	2	2
Coupling Loop	1	1	1
Bracket Assembly	1	1	1
Control Box	1	1	1
Operation/Assembly Manual	1	1	1
Plastic Bag containing:			
M4 Steel Nuts	2	2	2
M4 Steel Locking Washers	4	4	4
Cable Tie (small)	1	1	1
Cable Tie (Large)		6	
Self Amalgamating Tape	1	1	1
2-way Tagstrip	1	1	1