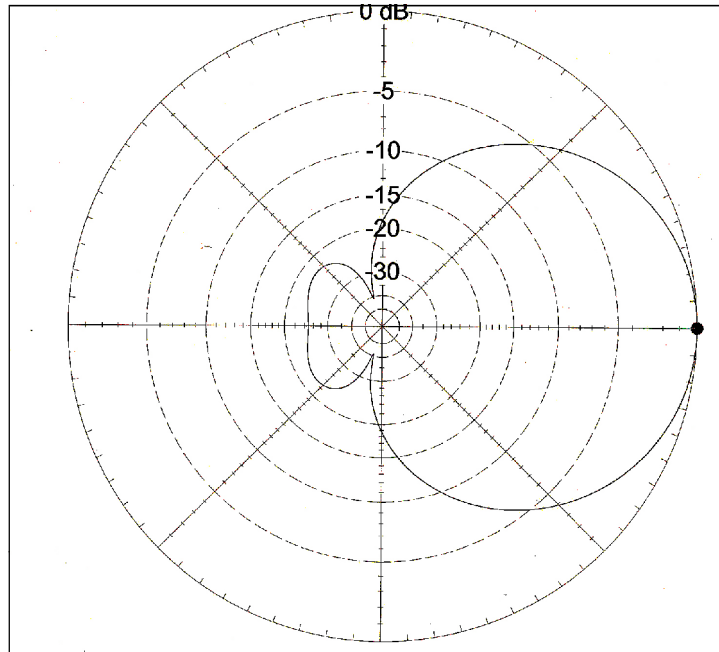


OPTIMIZED MOXON MODEL OM-144 2M DIRECTIONAL ANTENNA

PARTS LIST

PART NO.	QTY	DESCRIPTION
SUB14402	1	2 METER MATCHBOX
14414	2	1/2" SQUARE ALUMINUM RADIATOR
14420	1	1/2" SQUARE REFLECTOR
SUB14403	2	5/16 ROUND TUBES + SPACERS
14404	1	FIBERGLASS ANGLE
14407	1	ALUM. BACKUP PLATE 2 HOLES
14415	2	S.S. 10-32X1" SCREW
2814	2	#10 STAINLESS HEX NUT
14417	2	#10 SPLIT RING LOCKWASHER
14416	2	S.S. 1/4-20X2 1/4" HEX HEAD BOLT
5018	2	S.S. 1/4-20 STAINLESS HEX NUT
14411	2	S.S. 1/4" FLATWASHER
14417	1	3/8 ROUND DIELECTRIC SPACER
14421	1	OM-144 INSTRUCTION SHEET
14419	4	1/4-20X1" ALUMINUM SCREW
14418	2	S.S. 1/4 SPLIT RING LOCKWASHER
5019	4	ALUMINUM 1/4" LOCKWASHER



SPECIFICATIONS

Polarity:	Horizontal
Gain:	5.8dBi
Front to Back	21Db Minimum
Design Z:	50 Ohms
V.S.W.R. Bandwidth:	3MHz Between 1.5:1 Points
Power Handling:	350W
Weight:	1 lb
Size:	Rectangular; 29"X13"
Materials:	6061-T6 Aluminum, Fiberglass
Hardware:	Stainless Steel

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ASSEMBLY

1. LOCATE THE SQUARE DRIVEN ELEMENT AND MATCHBOX ASSEMBLY AND THE TWO SETS OF 5/16" ROUND SIDETAILED. YOU WILL NOTE THAT EACH SIDETAILED HAS A **SHORT** ALUMINUM TUBE AND A **LONG** ALUMINUM TUBE. CONNECT THE **SHORT** ENDS TO THE DRIVEN ELEMENT SQUARE TUBES WITH ALUMINUM 1/4X1 SCREWS AND LOCKWASHERS (FIG 2). THE TAILS MOUNT SO THAT THEY ARE ON THE OPPOSITE SIDE OF THE SQUARE TUBING FROM THE MATCHBOX. THAT IS, THE TAILS AND THE MATCHBOX CONNECTOR ALL FACE THE SAME DIRECTION. SEE FIG 1. HAND TIGHTEN.
2. LOCATE THE LONG SQUARE REFLECTOR TUBE. ATTACH IT TO THE LONG ENDS OF THE SIDE TAILS USING 1/4X1 ALUMINUM SCREWS AND LOCK WASHERS. YOU WILL NOW HAVE A RIGID RECTANGLE.
3. SECURELY TIGHTEN ALL 4 ALUMINUM SCREWS.
4. LOCATE THE MOUNTING BRACKET HARDWARE BAG AND ASSEMBLE THE ALUMINUM BACKUP PLATE TO THE FIBERGLASS ANGLE WITH THE TWO 1/4 X 1 3/4" STAINLESS BOLTS, FLATWASHERS, LOCKWASHERS AND NUTS IN THAT ORDER. SEE FIG. 4/5/6.
5. SECURE THE BRACKET TO THE REFLECTOR WITH TWO 10-32X1" STAINLESS SCREWS, FLATWASHERS, LOCKWASHERS AND NUTS IN THAT ORDER. THE BRACKET IS MOUNTED TO THE REFLECTOR FROM THE TOP AS SHOWN IN FIG. 1. ALSO SEE FIGURES 3,4 AND 5. NOTE THAT THE BRACKET IS ASSEMBLED SO THAT IT IS "INSIDE" THE RECTANGLE.
6. USE THE BEST QUALITY COAXIAL CABLE YOU CAN AFFORD. COAXIAL CABLE LOSS GOES UP WITH FREQUENCY AND EVEN 25' OF, SAY RG-58, WILL HAVE SIGNIFICANT LOSS AT 144MHZ.
7. YOU MUST SEAL THE PL-259 TO SO-239 (OR TYPE N IF SO ORDERED) WITH COAX-SEAL, LIQUID TAPE OR A SIMILAR WATERPROOFING PRODUCT.
8. ROUTE THE COAX DIRECTLY ACROSS TO THE REFLECTOR AND DRESS IT DOWN THE MAST. SECURE THE CABLE WITH TIE WRAPS OR TAPE IN THE VICINITY OF THE ANTENNA.
9. THE ANTENNA SHOULD BE MOUNTED HIGH AND IN THE CLEAR. TIGHTEN THE 1/4" BOLTS JUST ENOUGH TO SECURELY CLAMP THE BRACKET TO YOUR MAST. THE MAST CAN BE METAL OR NON-CONDUCTING- IT IS INVISIBLE TO THE ANTENNA.
10. BUILDING MATERIALS, TREES, LEAVES ETC ARE SERIOUS ABSORBERS AT VHF. WHEN MOUNTED IN THE CLEAR, THE ANTENNA WILL NOT REQUIRE ANY TUNING.

HOW THE ANTENNA WORKS

The Moxon may be thought of as a 2 element Yagi with the driven and reflector tails bent in towards each other. The close proximity of the tails results in a second coupling mechanism (in addition to the classic mutual coupling from the parallel elements). The combined coupling results in a front to back ratio that is superior to a 2 element DE-REF Yagi, similar gain and a much smaller footprint.

NOTE:

IF YOU EXPERIENCE DIFFICULTY TUNING THE ANTENNA, CHECK YOUR COAXIAL CABLE AND CONNECTORS FOR SHORTS, OPENS AND CONTINUITY. AN EXCELLENT TEST IS TO PLACE A KNOWN, GOOD VHF TERMINATION ON ONE END AND MEASURE THE V.S.W.R. WHILE FLEXING THE CABLE AND CONNECTORS. IT IS NOT AN EXAGGERATION, TO SAY THAT CLOSE TO 100% OF ANTENNA PROBLEMS CAN BE TRACED TO THIS SINGLE FAULT.

