

# KLM electronics, inc.

COMMUNICATIONS EQUIPMENT/ANTENNA INNOVATIONS

## ANTENNA ASSEMBLY INSTRUCTIONS 28-30 MHz

1. Check the parts carefully against the parts list. Read these instructions carefully before proceeding with assembly.

NOTE: We have provided a conductive zinc paste (Penetrox A or equivalent) which should be applied lightly between every aluminum to aluminum or aluminum to copper joint. It insures long lasting, trouble free connections and ease in disassembly.

2. Assemble the Boom sections and fasten together using 10-32 x 2 $\frac{1}{4}$  stainless screws nuts and lockwashers, tighten.

3. For the 6 element or longer antenna, slide on the 2" cast aluminum Boom support cable clamps to about 5 feet from each end.

4. Install the element insulators using 10-32 x 3" stainless screws, nuts and lockwashers.

5. Install the element halves per the dimensional drawing. Jumper straps are used on the reflector and the directors to tie the element halves together. Use Penetrox 'A' on the jumper joints and use 8-32 x 1 $\frac{1}{4}$  screws, nuts and lockwashers, tighten.

NOTE: The jumper strap can touch the insulator mounting screw.

6. Install the phasing straps on the two driven elements. Be sure the insulated spacer is installed at the crossover point.

7. Attach the KLM 3-60-4:1 Balun or equivalent using the front driven element insulator mounting screw to hold the balun clip. Be sure the Balun terminals are 3/8" or more from the metal clip.

8. Install the Boom to mast plate at the physical balance point using 2" UBolts and yolks.

9. In the 6 element model a Boom support cable is required. Temporarily install 3-4 feet mast thru the 2" mast clamp UBolts. Attach the center 2" UBolt in the cable assembly about 30 inches above the Boom. Attach each cable end to the previously installed Boom support clamps using 3/8-16 x 2" bolts, nuts and lockwashers. Loosen the turnbuckles until just one thread shows inside the turnbuckle. Position the Boom support clamp so the guy cable is taught and the Boom is straight when the antenna is supported at the Boom to mast plate point, tighten. Now remove the temporary mast section and tape the cable to the Boom near the center so it is out of the way during the initial antenna installation.

10. Connect 50 ohm coax to the Balun and route it along under the Boom back to the Boom to mast plate taping it every 3-4 feet.

11. Install the antenna on your tower using the two loose 2" UBolts and yolks in the Boom to mast plate. Tighten securely. If required, install the support on the mast approx. 30 inches above the Boom and tighten. Adjust the turnbuckles until the Boom is straight.

### INSTALLATION HINTS

If possible, maintain 8-9 feet spacing from other lower frequency antennas. For vertical polarization, remember, metal towers and masts in line with the antenna elements disturb the VSWR and tend to distort the pattern. For best results, use a nonconductive mast, i.e. wood or fibreglass at least to the tips of the elements. Another way is to use two antennas supported on a metal crossboom, spaced approx. the Boom length of one antenna.

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7' 3/4"  
7' 3 3/8"  
7' 5"  
6' 8 3/4"  
8' 5 1/2"

KLM 28-30-5

## ELEMENT HALF LENGTH

### Element Spacing

28-29 MHz

28.5-30 MHz

240

#5

90.5

87.375

88.375

141.25

98.75"

#4

92.125

89.0

90.0

70

71.25"

X X

#3

83.75

80.75

81.75

30

40"

#2

94.5

91.25

92.25

1

29"

#1

105

101.375

102.5

XX ATTACH KLM 3-60-4:1 BALUN HERE

### PARTS LIST

	QTY.		QTY.
Flatwashers	12		
Lockwasher	12	<u>HARDWARE</u>	
1-32 x 3" Screws	5	Boom Caps	2
1-32 x 1 1/4" "	10	Penetrox 'A'	
1-32 x 2 1/4" "	2	Instructions	
1-32 Nuts	7		
1-32 Lockwashers	7	Balun KLM 3-60-4:1 (Optional)	1
1-32 Nuts	12	Balun Clip (Optional)	1
Boom to Mast Plate	1		
U-Bolts, Nuts, Lockwashers	4		
Boom Sections 10'4"	2		
Element Insulators	5		
Impers	3		
Slashing Straps 40"	2		
Slashing Strap Insulator	1		
1 x (see above) Elements	10		
Element Tip Caps	10		