

### M2 Antenna Systems, Inc. Model No: 7-10-30LP8 UP-KIT



### FOR CONVERTING THE 10-30LP8 TO A 7-10-30LP8 'SKIP LOG'

**OVERVIEW OF UPGRADE:** Very little has to be done to your original 10-30LP8. In fact the only element that you even work on is the longest element. If it is possible to remove just the rear element and leave the rest of the antenna up, that would be the easiest. Please look over the ASSEMBLY DETAILS AND TUNING CHART before beginning and familiarize yourself with the new parts to be added. Note the basic element sections do not change in any way.

Refer to the two "add-on" assembly drawings for screw and bolt sizes when not called out in the text.

### NOTE: WHEN USING THE 5/64" ALLEN WRENCH PROVIDED BE SURE THAT IT IS FULLY INSERTED INTO THE 8 -32 SET SCREWS TO BE SURE FULL TORQUE CAN BE APPLIED WITHOUT STRIPPING THE SET SCREW.

1. Begin by installing the VERTICAL SUPPORT TUBE. Remove the two center bolts in the element clamp plates. Feed the 1/4-20 x 3 1/2 bolts through the clamp plate holes and add the 1/4-20 locknuts. Tighten securely.

*NOTE:* If you have our early version log periodic, the bolt pattern may not match the square tube holes. Place the square tube in position, mark the plate where the holes should be and drill 1/4" holes through your clamp plates. Then assemble as noted above.

- 2. Refer to the 7-10-30LP8 element# 1 assembly detail drawings and prepare each element half by adding the STABI-LIZER INSULATOR, DUAL WING SKIP SUPPORT ARMS AND ELEMENT OVERHEAD SUPPORT CLAMP. Then add the 3/4" AND 1/2" LINEAR LOADING ARMS. Do this by opening the element joints on each element half and sliding on the parts to their approximate positions as shown. Then reconnect the element joints. Finalize the positions of the parts as describe in the drawings. The white plastic rod insulators can be installed at this time in each support arm.
- 3. Place the element on a level surface with the support post up. FROM THE ELEMENT BUTT SIDE, feed a 3/16" x 72" LINEAR LOADING ROD through the flat support insulator and on to the un-insulated side of the DUAL SUPPORT ARM until 5/8" extends beyond arm. Install (4) and tighten the (2) 8-32 x 1/4" set screws locking this rod in place. Install two SHAFT RETAINERS, one at a time, onto this rod tip and snug up to linear loading arm.

NOTE: to start the RETAINER, hold the  $3/8 \times 3''$  PUSH TUBE in your hand with one end between your thumb and forefinger. Now center retainer on this end, "dish" into tube, and hold in place with the same thumb and forefinger. Grasp the linear loading rod near the end with your other hand and firmly push the retainer onto the rod.

4. In the same way, feed another 72" LINEAR LOADING ROD through the flat support insulator and on through the white polyethylene insulator until 5/8" extends beyond insulator. Tighten the (2) 8-32 /4" set screws locking the rod in the arm. Install two SHAFT RETAINERS, one at a time, onto this rod tip and snug up to insulator. Install two 8-32 x 1/4" set screws into a 1/4" x 1/2" x 1" SPLICE BLOCK and install block on 1/2" rod tip up against the retainers. Tighten set screw. Repeat for other element half.

## **ASSEMBLY INSTRUCTIONS**

- Insert (2) 8-32 x 1/4" set screws into each remaining SPLICE BLOCK. Slide a splice block 1/2" on the open ends of each of the rods just installed and tighten the set screw. Now insert two more 3/16" x 72" rods per side into these SPLICE BLOCKS and tighten the set screws.
- 6. Slide another 3/16" x 72" rod through the white insulators on the 3 arms beyond the dual support arm. Insert the inner rod end into splice block at the dual support arm and tighten set screw. Now slide the second 72" rod in through the white insulators and connect it at the spice block as before. SEE THE FREQUENCY CHART on the LINEAR LOADED ELEMENT ASSEMBLY DRAWING and select the desired center frequency for Element #1. Cut this outer linear loading rod to the desired dimension. Position the outermost linear loading arm about 6" from tip. Space the other arms to support the rod at equal intervals. Then tighten all clamp screws. Repeat for other element half.
- 7. Next, pre-assemble both pair of LINEAR LOADING SHORTING BARS using (5) 8-32 x 7/8" screws and locknuts. NOTE: THE BARS ARE NOT SYMMETRICAL IN THE CENTER GROOVES. Now pass about 4" of HPTG-1200 through the CENTER groove and back through the offset grooves so you have about 2-1/2 inches of cable end coming back for later clamping. Using a tape measure, mark each rod at the "A" Dim. back from where it attaches to the DUAL SUPPORT ARM. Slide a shorting bar set onto the rod ends and position the shorting bar clamps at your "A" Dim. marks. Level the bars; equalize the rod tension and begin tightening the outer screws. Once everything is straight and aligned, tighten all 5 screws. Repeat for the other side.

#### NOTE: IF YOU WILL BE USING THIS ANTENNA FOR OPERATION BELOW 6.950 MHZ, THEN DO NOT TRIM OFF THE EXCESS ROD BEYOND THE SHORTING BAR. CONSULT THE TUNING CHART FOR THE PROPER SHORTING BAR SETTING AND THEN TRIM OFF EXCESS 5" BEYOND THE SHORT-ING BARS.

IF OPERATION IS DESIRED ABOVE 6.950 MHZ, THEN CUT THE EXCESS ROD MATERIAL OFF AT 5" BEYOND THE SHORTING BARS.

### EXCESS ROD MUST BE TRIMMED AS DESCRIBED ABOVE OR RESONANCE MAY BE LOWER.

- 8. Cut the 30 ft. phillystran into to equal length and route through the element support clamps and pull tight. (see the self locking method shown in the assembly details diagram). Route the other end of the cable through the thimble and upper turnbuckles and wire clips and pull tight and tighten the clips, equally tension the cables using the turnbuckle. To check your tension, lift the element up at the center and note the element droop. Each element should droop 10" to 16" at the tip.
- 9. Now route the linear loading phillystran through the lower turn buckles and thimbles and add the wire clips. Pull the cable though and tighten the wire clips. Use the turnbuckles to tension them just to slightly help the main element supports. Use 1/4-20 nuts provided to jam the turnbuckle.
- 10. We have provided a new coil section to go across the rear element which is different from some earlier coils. If this coil is different from your original, replace the original with this new coil. **FINAL CHECK ALL HARDWARE FOR TIGHTNESS.**

#### THIS COMPLETES THE ASSEMBLY PROCESS.

**NOTE:** When mounting this log periodic on a tower or mast with other antennas there may be interaction particularly if any of the other antennas are resonant in the 7 AND 10 to 30 MHz band. In general VHF and/or UHF antennas mounted for HORIZONTAL POLARITY should be at least 40 inches above or below the log antenna. Use good quality 50 Ohm feed line to feed the log and be sure your tower and rotator system can handle to wind area and weight of this antenna. We want you to enjoy operating the SEVEN AMATEUR BANDS that this antenna covers not to mention all the other possible applications for this versatile performer!

### 7-10-30L8 DIMENSION SHEET



## 7-10-30LP8 ELEMENT#1 ASSEMBLY DETAILS

### **ELEMENT #1 OVERHEAD SUPPORT**



## 7-10-30LP8 ELEMENT#1 ASSEMBLY DETAILS



# 7-10-30-LP8 LINEAR LOADING (TUNING)



DESCRIPTION	QTY
SUPPORT POST, LL, 1" X 1" X 24" (M2AVR0050)	1
ELEMENT OVERHEAD SUPPORT CLAMP (M2APL0212)	2
ELEMENT OVERHEAD SUPPORT LINE, HPTG1200 X 30'	1
STEPPED INSULATOR (M2APL0037)	2
LINEAR LOADING INSULATOR (M2APL0038)	6
SPLICE BLOCK (M2APL0036)	8
SKIP SUPPORT ARM, DUAL WING, 3/8 X 1 1/2 X 5.750 (M2APL0020)	2
LINEAR LOADING SUPPORT ARM, 1/2" X 3/4" (M2APL0015)	4
LINEAR LOADING SUPPORT ARM, 1/2" X 1/2" (M2APL0014)	2
INSULATOR, STABILIZER BAR 1/4 X 1 X 6", ABS (M2APL0200)	2
SUPPORT ARM FOR STABILIZER BAR, (1" HOLE) (M2APL0201)	2
SHORTING BAR HALVES, 1/4 X 3/4 X 5.875" (M2ASB0250)	4
STRAIN RELIEF, BLACK DELRIN (M2APL0100)	2
HPTG-1200 X 36" PHILLYSTRAN	2
ASSEMBLY MANUAL	1
LINEAR LOADING RODS, 3/16" X 72"	12

#### HARDWARE

TURN BUCKLE, 1/4-20 X 4", HOOK AND EYE	4
BOLT, 1/4-20 X 3 3/4" STAINLESS	2
NUT, 1/4-20 LOCKING, STAINLESS	4
NUT, 1/4-20, STAINLESS	2
SCREW, 8-32 X 1-1/2" PANHEAD, STAINLESS	
SCREW, 8-32 X 1-1/4" PANHEAD, STAINLESS	4
SCREW, 8-32 X 1.0" PANHEAD, STAINLESS	
SCREW, 8-32 X 7/8" PANHEAD, STAINLESS	
NUT, 8-32 LOCKING, STAINLESS	38
SET SCREW, 8-32 X 1/4 STAINLESS	
KEEPER, 3/16 STAINLESS	8
CABLE CLIPS, 1/8"	8
CABLE EYE, 3/16"	4
PUSH TUBE 3/8 X 3" ALUM	1
ALLEN WRENCH, 5/64"	1

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