



177 DIXON RD.
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910-930 MHz Loop Yagi Kit, Model 3333LYAK

SPECIFICATIONS

| | | | |
|---------------------|-----------------|--------------------|----------------------|
| Frequency Range: | 910-930 MHz | Gain: | 18.5 dBi |
| Number of elements: | 33 | 3 dB Beamwidth: | |
| Boom Length: | 144 inches | (E Plane:) | 20 ° |
| Boom diameter: | 1 inch | F/B ratio: | > 20 dB |
| Mast diameter: | 1 1/2 inch max. | Maximum Power: | 550 W. average |
| Weight: | 5 pounds | Stacking distance: | 30 inches vertical |
| Connector: | Type N female | | 33 inches horizontal |

PARTS LIST

| <i>Quantity</i> | <i>Description</i> | <i>Quantity</i> | <i>Description</i> |
|-----------------|--------------------|-----------------|--|
| 2 pcs. | drilled boom | 1 pkg | 4-40 X 1 1/4 inch stainless steel screws |
| 1 | reflector 1 | | 4-40 stainless steel hex nuts and locks, |
| 1 | reflector 2 | | miscellaneous 8-32 hardware |
| 1 | driven element | 1 | boom to mast bracket |
| 11 | directors 1-11 | 1 | boom to mast plate |
| 7 | directors 12-18 | 1 | U-bolt with hardware |
| 12 | directors 19-30 | 1 | cable assembly with connector |

ASSEMBLY INSTRUCTIONS

1) Attach loops to the boom with 4-40 screws, nuts and lockwashers in proper sequence. Loops go on the side of the boom marked with an "x" or "top". The boom is spliced between D16 and D17 and is held together with the mounting screws for these elements. When tightening the nuts on the parasitic elements, be careful not to torque them too tightly. Snug down the nuts, align the elements, and use a screwdriver for the final tightening. A 1/4" nut driver is almost mandatory for this job! Attach the driven element with the 5/16-18 nut provided. If only one antenna is being built, it doesn't matter which way the loop is oriented. If antennas are to be stacked, see "Instructions for Stacking Loop Yagis."

2) Attach the boom-to-mast plate and bracket (square tubing piece). The mounting center is D15. Install U-bolts so that the mast comes up directly under the boom.

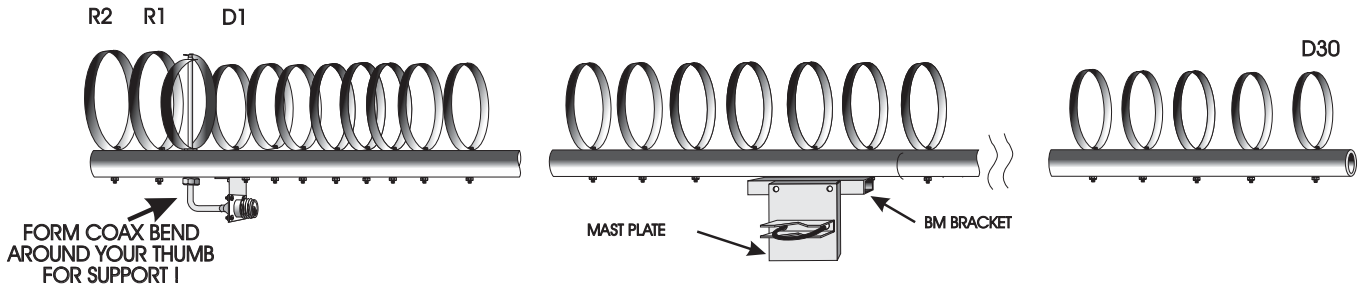
3) Install the cable assembly through the hole in the driven element mounting bolt and solder the ends to the ends of the loop. Solder the inner conductor first. Bend the connector forward and secure it to the boom with the bracket provided. (The bracket is secured by the nut for D1.) Attach the feedline and tape it to the bottom of the boom. Seal all connections with silicone RTV or equivalent.

4) The SWR should be 1.5:1 or better. Additional tweaking can be accomplished by adjusting the distance between the driven element and R1 or by adjusting the shape of the driven element.



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DIMENSIONS OF 910-930 MHz LOOP YAGI, MODEL 3333LYAK



| Element | Spacing from end of boom | Circumference | Element | Spacing from end of boom | Circumference | Element | Spacing from end of boom | Circumference |
|---------|--------------------------|---------------|---------|--------------------------|---------------|---------|--------------------------|---------------|
| R2 | 0.500 | 13.722 | D9 | 34.695 | 11.715 | D20 | 90.960 | 10.927 |
| R1 | 4.954 | 13.722 | D10 | 39.810 | 11.715 | D21 | 96.075 | 10.927 |
| DE | 6.319 | 13.280 | D11 | 44.925 | 11.715 | D22 | 101.190 | 10.927 |
| D1 | 7.928 | 11.715 | D12 | 50.040 | 11.353 | D23 | 106.305 | 10.927 |
| D2 | 9.121 | 11.715 | D13 | 55.155 | 11.353 | D24 | 111.420 | 10.927 |
| D3 | 11.678 | 11.715 | D14 | 60.270 | 11.353 | D25 | 116.535 | 10.927 |
| D4 | 14.236 | 11.715 | D15 | 65.385 | 11.353 | D26 | 121.650 | 10.927 |
| D5 | 16.032 | 11.715 | D16 | 70.500 | 11.353 | D27 | 126.765 | 10.927 |
| D6 | 19.351 | 11.715 | D17 | 75.615 | 11.353 | D28 | 131.880 | 10.927 |
| D7 | 24.466 | 11.715 | D18 | 80.730 | 11.353 | D29 | 136.995 | 10.927 |
| D8 | 29.580 | 11.715 | D19 | 85.845 | 10.927 | D30 | 142.110 | 10.927 |

Note: All dimensions are in inches

The boom diameter is 1 inch, and it is drilled for 4-40 hardware (no. 33 drill bit). The driven element hole is enlarged to 5/16 inch. All elements are 0.032 inch thick and 0.375 inch wide. Note that the element spacing from D7 on is 5.115 inches. To bend elements, wrap the strip around a suitable form (such as a piece of pipe or tubing). The driven element is formed in the same way, then soldered to the mounting bolt as shown. The feed coaxial cable (0.141 inch semi rigid) goes through the mounting bolt and is soldered to the open ends of the element. For best match, the driven element should be approximately 4 inches high; this makes it wider than it is tall. This shape can be adjusted for best match. This antenna is based on work done by G3JVL.

