



DIRECTIVE SYSTEMS

177 DIXON RD.
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902 MHz Loop Yagi Kit, Model 3333LYK

SPECIFICATIONS

Frequency Range:	880-910 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:	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	1 pkg	4-40 stainless steel hex nuts and locks
1	reflector 2	1	boom to mast bracket
1	driven element	1	boom to mast plate
11	directors 1-11	2	U-bolts with hardware & saddles
7	directors 12-18	1	cable assembly with connector
12	directors 19-30	1 pkg	miscellaneous 8-32 hardware

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.

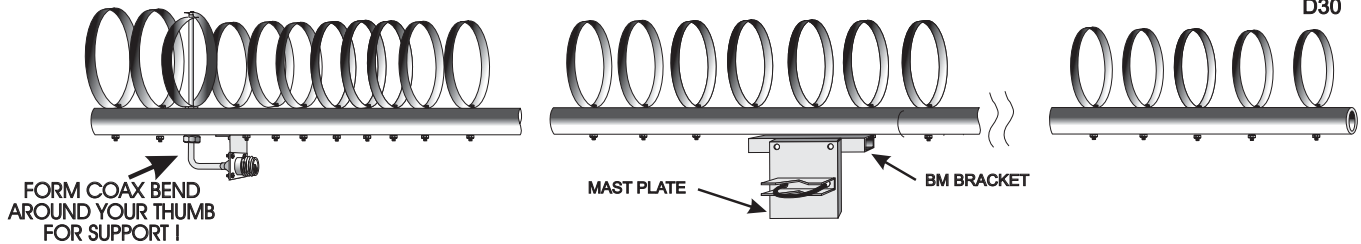


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DIMENSIONS OF 902 MHz LOOP YAGI, MODEL 3333LY(K)

R2 R1 D1



Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference
R2	0.500	13.931	D9	34.695	11.893	D20	90.960	11.093
R1	4.954	13.931	D10	39.810	11.893	D21	96.075	11.093
DE	6.319	13.486	D11	44.925	11.893	D22	101.190	11.093
D1	7.928	11.893	D12	50.040	11.526	D23	106.305	11.093
D2	9.121	11.893	D13	55.155	11.526	D24	111.420	11.093
D3	11.678	11.893	D14	60.270	11.526	D25	116.535	11.093
D4	14.236	11.893	D15	65.385	11.526	D26	121.650	11.093
D5	16.032	11.893	D16	70.500	11.526	D27	126.765	11.093
D6	19.351	11.893	D17	75.615	11.526	D28	131.880	11.093
D7	24.466	11.893	D18	80.730	11.526	D29	136.995	11.093
D8	29.580	11.893	D19	85.845	11.093	D30	142.110	11.093

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.

