



DIRECTIVE SYSTEMS

177 DIXON RD.
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3456 MHz Loop Yagi Kit, Model 945LYK

Frequency range:	3.40 to 3.48 GHz	Gain:	20 dBi
Number of elements:	45	3 dB Beamwidth	
Boom length:	60 inches	(E plane):	16°
Boom diameter:	0.5 inches	F/B ratio:	≥ 20 dB
Mast diameter:	1 1/2 in. max	Maximum Power:	100 W average
Weight:	1.5 pounds	Stacking distance:	9 inches vertical
Connector:	Type-N female		9.8 inches horizontal

PARTS LIST

<i>Quantity</i>	<i>Description</i>	<i>Quantity</i>	<i>Description</i>
2 pcs	drilled boom	1 pkg	3-48 stainless steel screws
2	reflectors 1, 2		3-48 stainless steel nuts,
1	driven element		Lock washers, 8-32
12	directors 1-11	1	hdwre
5	directors 12-18	1	small boom - mast "L"
6	directors 19-24	1	bracket
12	directors 25-36	1 pkg	large boom to mast bracket
7	directors 37-42		U-bolt with nuts & saddle
			cable assembly with

ASSEMBLY INSTRUCTIONS

1) Put the boom together. The splice is between elements D24 & D25 and is secured by the loop mounting screws of D22, 23 & 24. Attach loops to the boom with 3-48 x 3/4" screws, lock washers and nuts in proper sequence. Loops go on the side of the boom marked "TOP" or "X". 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 3/16" nut driver is almost mandatory for this job! Attach the driven element with the 1/4-20 stainless steel nut. If only a single antenna is being built, it does not 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 bracket with the angle bracket and 8-32 X 1" hardware. Use the two large holes on the rear boom piece. Install the 3" X 4" flat plate with 8-32 hardware provided. Install U-bolt on the flat plate so that the mast is directly under the boom.

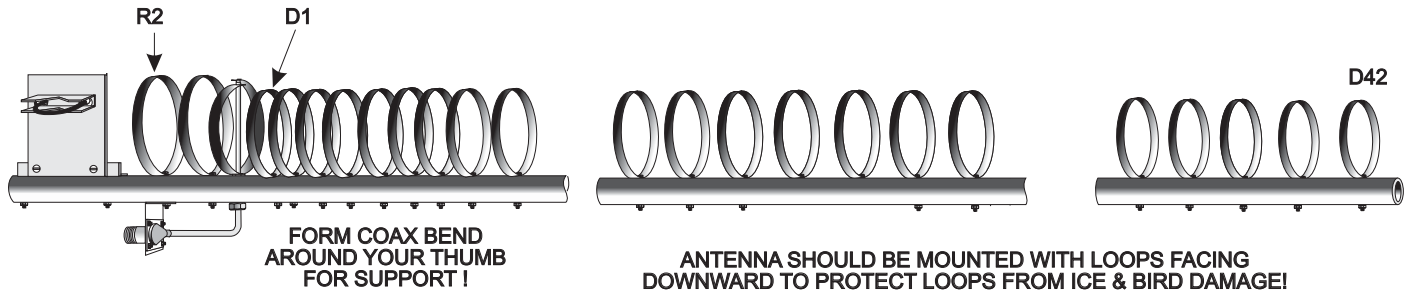
3) Install the connector-cable assembly through the hole in the driven element mounting bolt and and solder the coax ends to the ends of the loop. Solder the inner conductor first. Bend the connector bracket forward and secure it to the boom. (The bracket is secured by the nut for R-2) Attach the feedline and tape it to the mast. 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 3456 MHz LOOP YAGI, MODEL 945LY(K)



Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference
R2	6.000	3.741	D13	20.265	3.095	D28	40.290	2.966
R1	7.050	3.741	D14	21.599	3.095	D29	41.625	2.966
DE	7.518	3.570	D15	22.935	3.095	D30	42.960	2.966
D1	7.938	3.192	D16	24.269	3.095	D31	44.295	2.966
D2	8.250	3.192	D17	25.605	3.095	D32	45.630	2.966
D3	8.917	3.192	D18	26.940	3.095	D33	46.965	2.966
D4	9.584	3.192	D19	28.275	3.000	D34	48.300	2.966
D5	10.053	3.192	D20	29.610	3.000	D35	49.635	2.966
D6	10.920	3.192	D21	30.945	3.000	D36	50.970	2.966
D7	12.255	3.192	D22	32.280	3.000	D37	52.305	2.940
D8	13.590	3.192	D23	33.615	3.000	D38	53.640	2.940
D9	14.925	3.192	D24	34.950	3.000	D39	54.975	2.940
D10	16.260	3.192	D25	36.285	2.966	D40	56.310	2.940
D11	17.595	3.192	D26	37.620	2.966	D41	57.645	2.940
D12	18.930	3.095	D27	38.955	2.966	D42	58.980	2.940

Note: All dimensions are in inches

The boom diameter is 0.50 inch, and it is drilled for 3-48 hardware (no. 34 drill bit). The driven element hole is 1/4 inch dia. All elements are 0.020 inch thick and 0.200 inch wide. Note that the element spacing from D7 on is 1.335 inches. The driven element is installed in the 1/4" hole in the boom. The feed coaxial cable (0.141 inch semi rigid) goes through the mounting bolt and is formed in a 90 degree bend so that the connector bracket can be bolted to the boom at reflector #2 using the R2 hardware. The end opposite the connector is soldered to the open ends of the brass element. Allow a 3/16" max gap at the feedpoint. For best match, the driven element should be approximately 7/8 inches high; this makes it wider than it is tall. This shape can be adjusted for best match. After final tuneup, it is a good idea to solder the UT-141 to the brass bolt at the bolt head. Use a large 150 watt +soldering iron. This antenna is based on work done by G3JVL.

