



DIRECTIVE SYSTEMS

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915 MHz Loop Yagi Kit, Model 3347LYAK

SPECIFICATIONS

Frequency Range:	910-928 MHz	Gain:	20.5 dBi
Number of elements:	47	3 dB Beamwidth:	
Boom Length:	216 inches	(E Plane:)	14.4°
Boom diameter:	1 inch	F/B ratio:	>20 dB
Mast diameter:	2 inch max.	Maximum Power:	500 W. average
Weight:	8 pounds	Stacking distance:	38 inches vertical
Connector:	Type N female		41 inches horizontal

PARTS LIST

Quantity	Description	Quantity	Description
3 pcs.	drilled boom	1 pkg	Hardware bag (listed on last page)
2	reflector 1,2	1	Sub boom assembly 3/4" square tube.
1	driven element	1	boom to mast bracket (BM bracket)
1	directors 1-11	2	boom to sub boom plates, 3.5 X 4"
11	directors 12-18	2	2" U-bolts with hardware & saddles
7	directors 19-24	1	cable assembly with connector & bracket
12	directors 25-36	2	Sub boom splice piece
8	directors 37-44	1	Boom to Mast plate, 3.5 X 4"

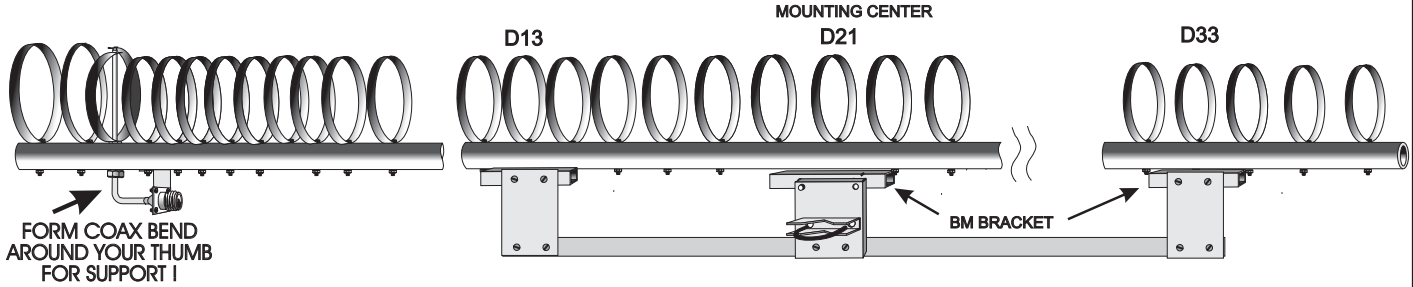
ASSEMBLY INSTRUCTIONS

- 1) Attach loops to the boom with 1 1/4" x 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 D16-17 & D30-31 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! Install "L" boom brace brackets at D15 & 32 as shown in the illustrations. 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 multiple antennas are to be stacked, see "Instructions for Stacking Loop Yagis." a separate instruction sheet packed with multiple antennas.
- 2) Attach the three BM brackets (square tubing piece) on the main boom. The mounting centers are D15, 21, and is D21. 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.)
- 4) Support the 3347LY on it's support mast and locate the second boom to mast plate below the antenna. Connect the two boom braces from the "L" brackets to the lower mast plate. Observe the illustration on the last page. Use 8-32 x 1" screws to fasten braces. Note that the forward brace is comprised of two telescoping tubes. The rear brace is a single 36 inch long tube. Slide the front brace tubes until the boom sag is minimized. Tighten the worm clamp to clamp the brace tubes in place. Attach the feedline and tape it to the bottom of the boom. Seal all connections with silicone RTV or equivalent.
- 5) 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 915 MHz LOOP YAGI, MODEL 3347LYAK



Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference
R2	0.50	13.722	D14	60.270	11.353	D30	142.110	10.915
R1	4.945	13.722	D15	65.385	11.353	D31	147.225	10.915
DE	6.319	13.280	D16	70.500	11.353	D32	152.340	10.915
D1	7.928	11.715	D17	75.615	11.353	D33	157.455	10.915
D2	9.121	11.715	D18	80.730	11.353	D34	162.570	10.915
D3	11.678	11.715	D19	85.845	11.050	D35	167.685	10.915
D4	14.236	11.715	D20	90.960	11.050	D36	172.800	10.915
D5	16.032	11.715	D21	96.075	11.050	D37	177.915	10.749
D6	19.351	11.715	D22	101.190	11.050	D38	183.030	10.749
D7	24.466	11.715	D23	106.305	11.050	D39	188.145	10.749
D8	29.580	11.715	D24	111.420	11.050	D40	193.260	10.749
D9	34.695	11.715	D25	116.535	10.915	D41	198.375	10.749
D10	39.810	11.715	D26	121.650	10.915	D42	203.490	10.749
D11	44.925	11.715	D27	126.765	10.915	D43	208.605	10.749
D12	50.040	11.353	D28	131.880	10.915	D44	213.720	10.749
D13	55.155	11.353	D29	136.995	10.915			

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 5/16 inch dia. All elements are 0.032 inch thick and 0.375 inch wide. Note that the element spacing from D7 on is 5.115 inches. The driven element is installed in the 5/16" 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 Director #1 using the D1 hardware. Bend coax around your thumb for support. (It may "kink" otherwise.) The connector end is soldered to the open ends of the brass element. Allow a 1/4" gap at the feedpoint. 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.

