



DIRECTIVE SYSTEMS

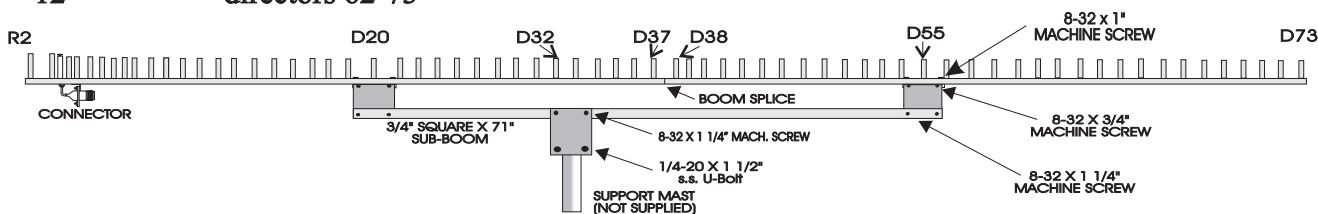
177 DIXON RD.
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2304 MHz Loop Yagi Kit, Model 1376LYK

Frequency range:	2.28 to 2.35 GHz	Gain:	≈ 23.4 dBI
Number of elements:	76	3 dB Beamwidth (E plane):	≈ 10.7°
Boom length:	144 inches	F/B ratio:	≥ 25 dB
Boom diameter:	Dual 0.5" & 0.75"	Maximum Power:	400 W average
Mast diameter:	1 1/2 in. max	Stacking distance:	24.5 inches vertical 25.25 inches horiz.
Weight:	5.2 pounds		
Connector:	Type-N female		

PARTS LIST

Quantity	Description	Quantity	Description
2 pcs	0.5" drilled boom	1 pkg	4-40 stainless steel screws nuts, lockwashers, 8-32 misc. hardware
1	.75" square sub-boom		
2	reflectors 1&2		
1	driven element (Brass)	2	3 x 4" sub boom bracket
12	directors 1-12	1	3 1/2 x 4" boom to mast plate
5	directors 13-17	2	1/2" x 3" angle bracket
6	directors 18-23	1	U-bolt with nuts & saddle cable assembly with connector
12	directors 24-35	1	
7	directors 36-42		
7	directors 43-49		
12	directors 50-61		
12	directors 62-73		



ASSEMBLY INSTRUCTIONS

- 1) Put the 2 boom pieces together. Use the alignment marks on the booms. The splice is between elements D37 & D38 and is secured by the loop mounting screws of D36&37. Attach loops to the boom with 4-40 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 1/4" 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) Install the connector-cable assembly through the hole in the driven element mounting bolt and solder the coax ends to the ends of the loop. Allow .25" spacing between brass loop ends. Solder the inner conductor first. Bend the connector bracket forward and secure it to the boom. (The bracket is secured by the nut for D-2)
- 3) Attach the angle brackets and sub boom plates (2) with 8-32 hardware. Use 1" screws to attach the angle bracket to the 1/2" boom, and 3/4" screws for the sub-boom plates to the angle brackets. The mounting centers are D-20 & 55. Attach the 3/4" square sub-boom to the two 3 X 4" brackets using 8-32 x 1 1/4" hardware. Align the center mounting holes on the sub boom toward the rear of the antenna so that the holes are at the antenna balance point. Install the 3 1/2 x 4" bracket and U bolt at the balance point of the antenna. Use 8-32 x 1 1/4" hardware.
- 4) Attach the feedline and tape it to the sub-boom. Seal all connections with silicone RTV or equivalent.
- 5) The SWR should be under 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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"THE BLOWTORCH"

DIMENSIONS OF 2304 MHz LOOP YAGI, MODEL 1376LY(K)

Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference
R2	0.500	5.650	D23	41.923	4.335	D48	91.985	4.174
R1	2.244	5.650	D24	43.925	4.278	D49	93.987	4.174
DE	2.728	4.918	D25	45.928	4.278	D50	95.990	4.160
D1	3.408	4.615	D26	47.930	4.278	D51	97.993	4.160
D2	3.875	4.615	D27	49.933	4.278	D52	99.995	4.160
D3	4.876	4.615	D28	51.935	4.278	D53	101.998	4.160
D4	5.878	4.615	D29	53.938	4.278	D54	104.000	4.160
D5	6.581	4.615	D30	55.940	4.278	D55	106.003	4.160
D6	7.880	4.615	D31	57.943	4.278	D56	108.005	4.160
D7	9.883	4.615	D32	59.945	4.278	D57	110.008	4.160
D8	11.885	4.615	D33	61.948	4.278	D58	112.010	4.160
D9	13.888	4.615	D34	63.950	4.278	D59	114.013	4.160
D10	15.890	4.615	D35	65.953	4.278	D60	116.015	4.160
D11	17.893	4.615	D36	67.955	4.223	D61	118.018	4.160
D12	19.895	4.615	D37	69.958	4.223	D62	120.020	4.120
D13	21.898	4.475	D38	71.960	4.223	D63	122.023	4.120
D14	23.900	4.475	D39	73.963	4.223	D64	124.025	4.120
D15	25.903	4.475	D40	75.965	4.223	D65	126.028	4.120
D16	27.905	4.475	D41	77.968	4.223	D66	128.030	4.120
D17	29.908	4.475	D42	79.970	4.223	D67	130.033	4.120
D18	31.910	4.335	D43	81.972	4.174	D68	132.035	4.120
D19	33.913	4.335	D44	83.975	4.174	D69	134.038	4.120
D20	35.915	4.335	D45	85.977	4.174	D70	136.040	4.120
D21	37.918	4.335	D46	87.980	4.174	D71	138.043	4.120
D22	39.920	4.335	D47	89.982	4.174	D72	140.045	4.120
					4.174	D73	142.048	4.120

The boom diameter is 0.5 inch, and it is drilled for 4-40 hardware (no. 33 drill bit). The driven element hole is enlarged to 1/4 inch. All elements are 0.032 inch thick and 0.250 inch wide. Note that the element spacing from D7 on is 2.0025 inches. The driven element is 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 1.375 inches high; this makes it wider than it is tall. This shape can be adjusted for best match. Maintain a .250" gap between dipole ends where they solder to the copper coax. This improves performance in wet weather. This antenna is based on work done by G3JVL.

