



DIRECTIVE SYSTEMS

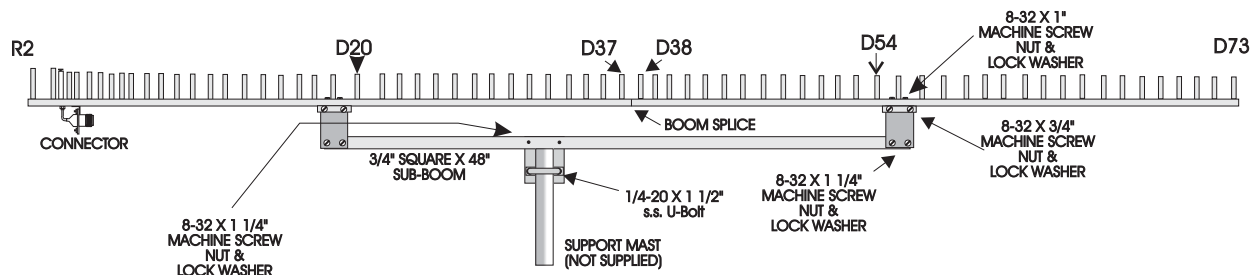
177 DIXON RD.
LEBANON, ME. 04027
TEL: 207-658-7758 FAX: 207-658-4337
www.directive-systems.com

3456 MHz Loop Yagi Kit, Model 976LYK

Frequency range:	3.4 to 3.5 GHz	Gain:	≈ 23.0 dBI
Number of elements:	76	3 dB Beamwidth (E plane):	≈ 10.7°
Boom length:	96 inches	F/B ratio:	≥ 25 dB
Boom diameter:	Dual 0.5" & 0.75"	Maximum Power:	200 W average
Mast diameter:	1 1/2 in. max	Stacking distance:	16.313 inches vertical 17.00 inches horiz.
Weight:	3.5 lbs. SAssembled		
Connector:	Type-N female		

PARTS LIST

Quantity	Description	Quantity	Description
2 pcs	0.5" X 48" drilled boom	1 pkg	3-48 stainless steel screws
1	.75" X 48" square sub-boom		nuts, lockwashers
2	reflectors 1&2	2	3" x 4" sub boom plates
1	driven element (Brass)	1	3" x 4" boom to mast plate
11	directors 1-11	1	U-bolt with nuts & saddle
7	directors 12-18	1	cable assembly with connector
6	directors 19-24	4	8-32 x 3/4" machine screw
12	directors 25-36	4	8-32 x 1" machine screw
6	directors 37-42	6	8-32 x 1 1/4" machine screw
7	Directors 43-49	14	8-32 hex nut
12	directors 50-61	14	#8 split lock washer
12	directors 62-73		



ASSEMBLY INSTRUCTIONS

- 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 D38 thru 40. 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."
- 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-3)
- Attach the two small angle brackets to the 1/2" boom with 8-32 hardware near Directors 20 and 54. Use 1" screws to attach to the 1/2" boom. and 3/4" screws for attaching the two 3 X 4" flat plates to the sub-boom. Attach the 3/4" square sub-boom to the two plates 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 remaining 3" x 4" bracket with u bolt holes and U bolt at the balance point of the antenna. Use 8-32 x 1 1/4" hardware to secure it to the sub boom.
- Attach the feedline and tape it to the sub-boom. You can route the coax along the sub boom. Seal all connections with silicone RTV or equivalent.
- 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 & D1, or by adjusting the shape of the driven element. It is a good idea to solder the UT-141 to the brass bolt when tuning is completed. Use a 75 watt or larger iron. The VSWR will be more stable if you solder the bolt after tuning.



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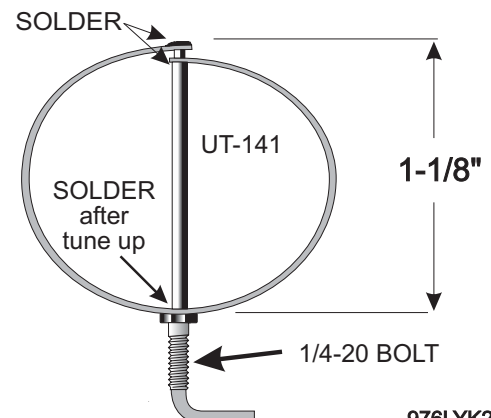
"THE BLOWTORCH"

DIMENSIONS OF 3456 MHz LOOP YAGI, MODEL 976LY(K)

Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference	Element	Spacing from end of boom	Circumference
R2	1.000	3.747	D23	28.615	2.945	D48	61.990	2.825
R1	2.050	3.747	D24	29.950	2.945	D49	63.325	2.825
DE	2.518	3.575	D25	31.285	2.907	D50	64.660	2.792
D1	2.938	3.133	D26	32.620	2.907	D51	65.995	2.792
D2	3.250	3.133	D27	33.955	2.907	D52	67.330	2.792
D3	3.917	3.133	D28	35.290	2.907	D53	68.665	2.792
D4	4.584	3.133	D29	36.625	2.907	D54	70.000	2.792
D5	5.053	3.133	D30	37.960	2.907	D55	71.335	2.792
D6	5.920	3.133	D31	39.295	2.907	D56	72.670	2.792
D7	7.255	3.133	D32	40.630	2.907	D57	74.005	2.792
D8	8.590	3.133	D33	41.965	2.907	D58	75.340	2.792
D9	9.925	3.133	D34	43.300	2.907	D59	76.675	2.792
D10	11.260	3.133	D35	44.635	2.907	D60	78.010	2.792
D11	12.595	3.133	D36	45.970	2.907	D61	79.345	2.792
D12	13.930	3.038	D37	47.305	2.865	D62	80.680	2.760
D13	15.265	3.038	D38	48.640	2.865	D63	82.015	2.760
D14	16.600	3.038	D39	49.975	2.865	D64	83.350	2.760
D15	17.935	3.038	D40	51.310	2.865	D65	84.685	2.760
D16	19.270	3.038	D41	52.645	2.865	D66	86.020	2.760
D17	20.605	3.038	D42	53.980	2.865	D67	87.355	2.760
D18	21.940	3.038	D43	55.315	2.825	D68	88.690	2.760
D19	23.275	2.945	D44	56.650	2.825	D69	90.025	2.760
D20	24.610	2.945	D45	57.985	2.825	D70	91.360	2.760
D21	25.945	2.945	D46	59.320	2.825	D71	92.695	2.760
D22	27.280	2.945	D47	60.655	2.825	D72	94.030	2.760
						D73	95.365	2.760

Note: All dimensions are in inches

The boom diameter is 0.5 inch, and it is drilled for 3-48 hardware (no. 39 drill bit). The driven element hole is enlarged to 1/4 inch. 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 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 1/8 inch high. 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. When tuneup is complete, solder .141" coax to brass bolt. (75 w+ iron) This antenna has been designed by Directive Systems to provide superb performance that rivals 24" parabolic dishes without the windload.



976LYK2