DIRECTIVE SYSTEMS

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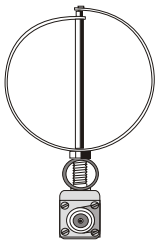
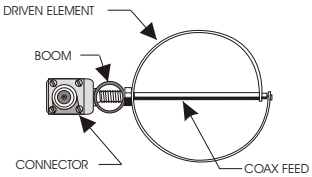
903 MHz Loop Yagi Kit, Model 3318LYKRM



HORIZONTAL POLARIZATION



VERTICAL POLARIZATION

SPECIFICATIONS

Frequency range:	890-910 MHz	Gain:	16.5 dBi.
No. of elements:	18	-3 dB Beamwidth	
Boom length:	72 inches	(E Plane):	30°
Boom diameter:	1 inch	F/B ratio	>20 dB
Mast diameter:	2" maximum	Maximum Power:	550 watts
Weight:	3 pounds assembled	Stacking distance:	
		Vertical:	21 1/2 inches
Connector:	Type N female	Horizontal:	24 inches

PARTS LIST

Quantity	*Description*	*Quantity*	*Description*
1	drilled boom	1 pkg	4-40 X 1 1/4" stainless steel screws 4-40 stainless steel nuts & washers, misc. 8-32 hardware
2	reflectors 1,2		
1	driven element		
10	directors 1-10	1	boom-to-mast bracket
5	directors 11-15	1	U-bolt with nuts & saddle
		1 pkg	cable assembly with connector

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". 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 inch nut driver is almost mandatory for this job! Attach the driven element with the 5/16 nut provided. If only a single 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 bracket (angle piece) behind the second reflector. Bracket can be installed for either horizontal or vertical polarization. Install U-bolt.

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 toward the rear so that the mtg hole in the connector bracket is lined up with R1, and secure it to the boom with the bracket provided. (The bracket is secured by the nut for R1.) Attach the feedline and tape it to the bottom of the boom. Seal all connections with a good grade of vinyl electrical tape, butyl rubber, or silicone RTV or equivalent to prevent water vapor entry into the connector body. Do not seal the soldered connection on the brass loop. It is weather proofed as is.

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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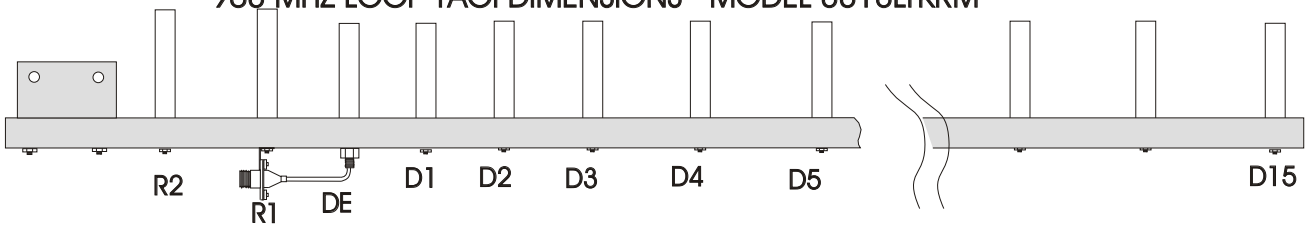
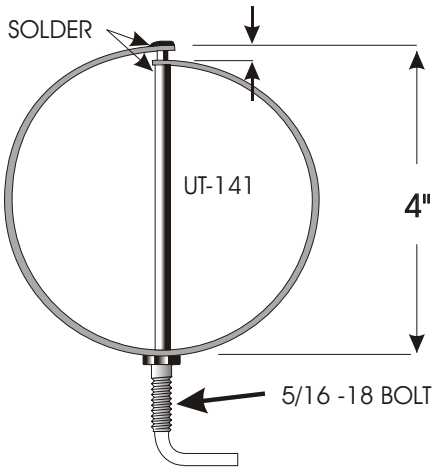
903 MHZ LOOP YAGI DIMENSIONS MODEL 3318LYKRM



element	*Spacing from end of boom*	*Circumference*	*Element*	*Spacing from end of boom*	*Circumference*
R2	0.500	13.931	D7	24.466	11.893
R1	4.454	13.931	D8	29.580	11.893
DE	6.319	13.486	D9	34.695	11.893
D1	7.928	11.893	D10	39.810	11.893
D2	9.121	11.893	D11	44.925	11.526
D3	11.678	11.893	D12	50.040	11.526
D4	14.236	11.893	D13	55.155	11.526
D5	16.032	11.893	D14	60.270	11.526
D6	19.351	11.893	D15	65.385	11.526

3/8"

spacing



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. The loops and driven element are pre formed to their proper shape. The connector / coax assembly is soldered to the driven element as shown at right. Form the coax cable using your thumb as a guide to bend the coax and bracket so that the bracket mounting hole is aligned at the R1 drilled hole in the boom. (See drawing above.) Be careful with the .141" coax. It can be crimped if not supported by your thumb! Attach the coax bracket with the hardware from R1. For the 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. The space between the loop ends should be 3/8" (9.5mm) This spacing will prevent water from "beading up" there during wet weather. The design of this antenna is based on work done by G3JVL.