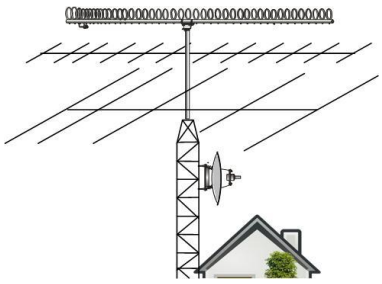

Directive Systems & Engineering

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12cm Loop Yagi Kit, Model DSE1276LYK (w/sub-boom)

SPECIFICATIONS

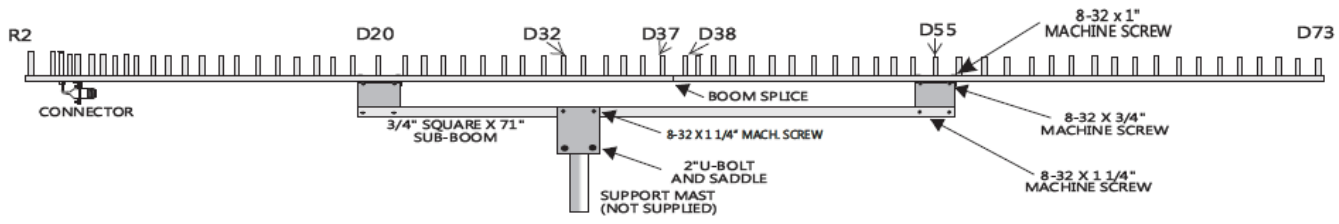
Frequency range:	2.35 to 2.48 GHz	Gain:	≅23.4 dBi
Number of elements:	76	3 dB Beamwidth	
Boom length:	144 inches	(E plane):	≅10.7º
Boom diameter:	Dual 0.5" & 0.75"	F/B ratio:	≥25 dB
Mast diameter:	2 inches max	Maximum Power:	400 W average
Weight: (assembled)	5.2 pounds	Stacking distance:	24.5 in. vertical
Connector:	Type-N female		25.25 in. horizontal

PARTS LIST

Note: All hardware is Stainless Steel unless otherwise noted.

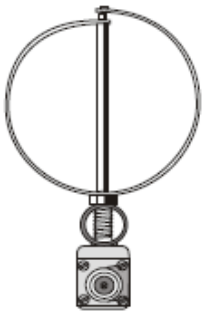
Quantity	Description	Quantity	Description
2	0.5" Drilled boom	75	4-40 x 3/4" Machine screw
1	.75" x 71" Square sub-boom	75	4-40 Lock nut
2	1/2" x 3" angle brackets	4	8-32 x 1/2" Machine screw
2	Sub-boom plates	4	8-32 x 1" Machine screw
2	Reflector	6	8-32 x 1 1/4" Machine screw
1	Driven element	14	8-32 Hex Nut
12	Directors 1-12	14	8-32 Split lock washer
5	Directors 13-17		
6	Directors 18-23	1	Boom-to-mast plate
12	Directors 24-35	1	U-bolt w/washers, nuts & saddle
7	Directors 36-42	1	Cable assy w/connector
7	Directors 43-49	1	Anti-Seize Compound
12	Directors 50-61	2	1/2" Black End Cap
12	Directors 62-73	1	Assembly Manual

Anti-Seize Compound - Apply a small amount of the supplied Anti-Seize Compound to the aluminum joints and to the threads of the U-Bolts to prevent galling.



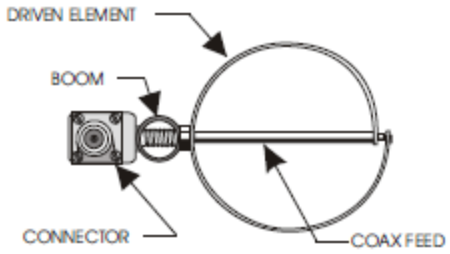
BEFORE INSTALLING YOUR NEW ANTENNA, PLEASE BE SURE TO READ THE ENCLOSED WARNING PAMPHLET.

CAUTION: ***While we strive to remove all burrs from all machined parts, there is always the possibility of sharp edges. We strongly suggest checking the edges and use a fine file, or 400 grit sandpaper, to remove any burrs that may have been left.***



HORIZONTAL POLARIZATION

(Can be up or down)



VERTICAL POLARIZATION

(Can be left or right)

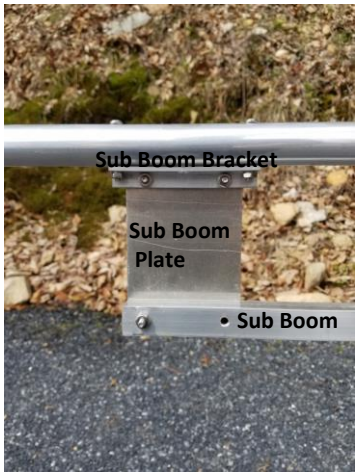
ASSEMBLY INSTRUCTIONS

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 with an "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) Mount the boom to mast bracket (square tubing piece) to the center boom section, using 8-32 X 2" screws, lock washers and nuts. Mount the boom to mast plate to this bracket using 8-32 x 1 ¼" screws, lock washers and nuts. Note: There may be extra holes in the plate that may be used for different applications.

3) There are two sub-boom brackets consisting of ½" aluminum angle and sub-boom plates. Mount the angle brackets on the front and rear boom sections using 8-32 x 1 3/8" screws, lock washers and nuts. Mount the sub-boom plates to these brackets using 8-32 x ½" screws, lock washers and nuts.

4) Mount the sub-boom (3/4" thick wall aluminum square tubing) to the sub-boom brackets and boom to mast plate using 8-32 x 1 ¼" screws, lock washers and nuts. NOTE: Do not tighten any of this hardware until sub-boom assembly is complete.



5) Install the cable assembly through the hole in the driven element mounting bolt. Make sure the connector bracket is correctly oriented, the bend should be forward for center mount antennas and rear facing for rear mount antennas. Solder the outer shield to the driven loop first making sure there is no shield sticking above the large hole in the driven loop. After the shield is soldered, pass the center conductor through the small hole in the driven loop and bend the center conductor over and solder (See Assembly Tips below).

We have created a You Tube video, the link of which can be found on our website, documenting the following steps:

https://youtu.be/ojXbsDv5cvU

At this point the connector assembly is facing down, connect a piece of coax and your SWR bridge or VNA. Pull down on the connector (which will flatten the loop) until you reach the lowest SWR. If it's less than 1.5:1 you can stop and make sure the loop doesn't try to pop back up, sometimes you have to squeeze the loop with your fingers to make sure it stays in the shape that gave the best SWR. If you want to further lower the SWR, from the rear of the antenna, place both your thumbs on the driven loop on either side and gently push it forward towards D1, you only need to tilt it maybe 3/16" to ¼" and that should drop the SWR to 1.1:1 or less.

Now, GENTLY bend the UT-141 coax after it exits the boom towards the front or rear, depending on the mounting. You do not want to bend it so tightly that it crushes where it extends through the bolt. The connector bracket should line up with either D1 or D2 (or the hole with the circle around it on rear mount antennas), remove that nut and place the connector bracket on the screw and re-attach the nut. If the bracket doesn't line up, sometimes you have to flip the bracket. Loosen the ¾" nut by holding the connector body with a 9/16" open end wrench. Remove the connector bracket and flip it.


Connector doesn't fit


Front Mount Connector


Rear Mount Connector

6) Attach the feedline and tape it to the sub-boom. Seal all connections with silicone RTV or equivalent.

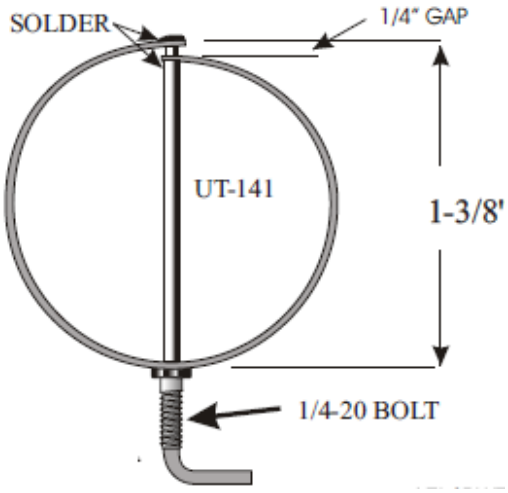
7) Attach the two black end caps, and this will complete the assembly of your DSE1376LYK.

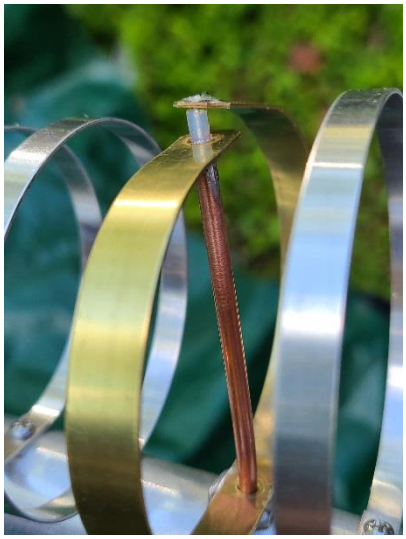
8) The SWR should be under 1.5:1 or better. Additional tweaking can be accomplished by adjusting the distance between the driven element and R1 or by adjusting the shape of the driven element.

DO NOT, UNDER ANY CIRCUMSTANCES, APPLY ANY TYPE OF SEALANT OR COATING TO THE DRIVEN ELEMENT, T-ARMS OR CONNECTOR ASSEMBLY, OTHER THAN KRYLON®
CLEAR COAT. ANY OTHER COATING WILL ADVERSELY AFFECT THE SWR AND VOID YOUR WARRANTY.

ASSEMBLY TIPS:

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 affects the VSWR, and improves performance in wet weather.This antenna is based on work done by G3JVL.





Soldered Driven Element

Directive Systems Warranty Policy

All Directive Systems antennas are built with the finest materials available. We take great pride in building a quality product that will give years of good service and performance. If there is a defect in materials or workmanship within 90 days of purchase, Directive Systems will repair or replace the defective part, free of charge, to the original purchaser. **DO NOT RETURN ANYTHING WITHOUT PRIOR AUTHORIZATION FROM DIRECTIVE SYSTEMS**. Please contact us either by phone or email describing the problem and we will work to resolve it.

If, after examining a new antenna you received, you are not satisfied, contact us immediately for return authorization and refund. **ANY ANTENNA THAT HAS BEEN MODIFIED WILL BE SUBJECT TO A RESTOCKING CHARGE. IF AN ANTENNA IS SO MODIFIED AS TO MAKE IT UNUSABLE, DIRECTIVE SYSTEMS RESERVES THE RIGHT TO REFUSE TO ACCEPT THE ANTENNA FOR RETURN.**

DIMENSIONS OF 2401 MHz LOOP YAGI, MODEL 1276LY(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