

LM Series

Mobile Antennas

The Larsen mount, the industry standard 5/16"-24 THDS stud mount uses a permanent 3/4" hole.

Pre-Installation Tips

- Resonance may be obtained with the use of a single ground element as small as 19" long and 1/2" wide. To improve performance, make the ground plane larger.
- For the best performance, mount antenna on vehicle roof top. The mobile antenna may also be mounted on the rear fender or trunk lid.
- See cutting chart to cut whip the correct length for operating frequency.

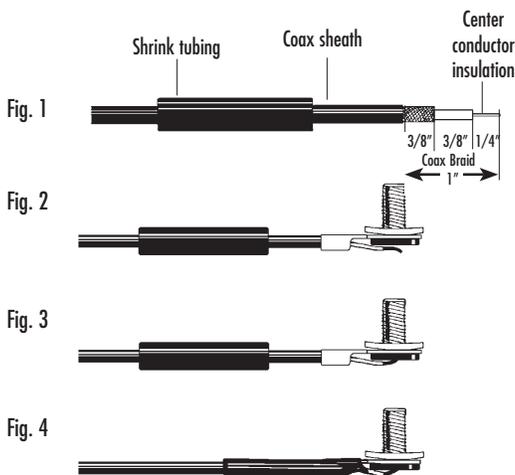
To Attach Mount to Vehicle:

Soldered Connection

1. Trim coax braid. Twist center conductor. Apply solder flux on braid and center conductor. Tin center conductor.
2. Place coax (braid) in lug channel, press down and solder, making sure there is enough solder flow for connection.
3. Remove soldering iron and allow assembly to cool.
4. Bend center conductor 90° into the center hole, apply flux and solder connections.
5. Wipe clean and test for continuity and shorts.

Shrink Tubing Connection

1. Slip heat shrinkable tubing over coax cable. (Fig. 1)
2. Insert cable into soldering hole using a twisting motion for maximum penetration. (Fig. 2)
3. Attach center conductor to center stud and solder. (Fig. 3)
4. Push heat shrinkable tubing over hole end and as far forward as possible. Rotate assembly for even heat distribution while heating. If tubing does not shrink evenly into place, continue process. Final assembly should look like Figure 4.

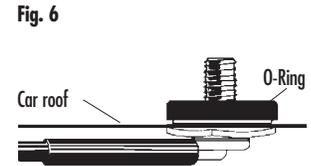
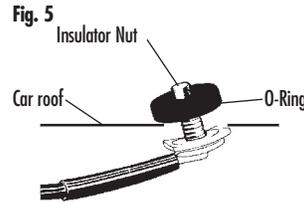


Mounting Instructions

1. Use hole saw to drill 3/4" (19mm) hole in vehicle.
2. Metal to metal contact between the vehicle and mount is essential for best performance. Remove any burrs on the under side of the hole.
3. Route coax lead to equipment and slip mount through hole as shown. (Fig. 5)
4. Insert small end of allen wrench into hole on side of insulator nut and use to tighten into place. On final turn, make sure "O" ring gasket is in place and

that the insulator nut is centered in mounting hole. Reverse wrench with long end in hole for final tightening. (Fig. 6)

5. To attach antenna to mount, place supplied rubber washer over antenna mount. Screw loading coil base firmly against rubber washer.



Pulse warrants to every user of a Larsen product that it will perform to its specified ratings and will be free of defects in materials and workmanship.

Pulse will repair or replace without charge any Larsen product which fails to meet this warranty within one year of the purchase

date. Excluded is failure due to misuse such as striking objects, improper installation, and use beyond specifications.

Pulse will not be responsible for any incidental or consequential damages due to failure of a Larsen product under this warranty or any implied warranty.

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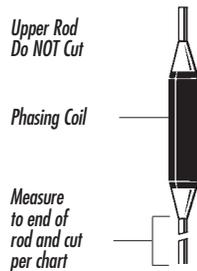
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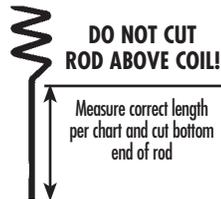
Measuring the Rod Length - UHF Antennas

The dimensions shown on the cutting chart are for sections of rod below the phasing coil. The rod above this coil comes preset from the factory. Do not cut this upper rod. The rod length indicated on the chart refers to the length of the rod from the bottom of the phasing coil to the end of the rod. Be sure to be precise for best results.



Cutting the Rod

The whip is constructed of the highest grade 17-7PH stainless steel, to provide all-weather protection and maximum radiation efficiency. Use sharp corner of file or edge of grinding wheel to cut the rod. Use file to score the rod and snap off with a pair of pliers.



Cleaning the Rod

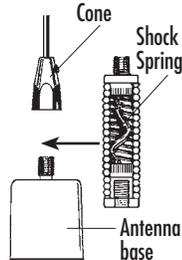
To clean the open coil antenna rod, use a damp sponge and soap.

800 MHz Band

Larsen[®] LM 800 antennas are cut to be resonant at 806-866 MHz, 825 at 825-896 MHz and 900 at 890-960 MHz. No further cutting is necessary

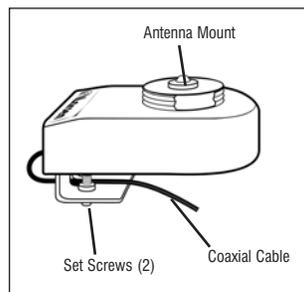
Shock Spring Option

Some cutting charts apply to LM antennas designed for a shock spring. Those antennas come with a metal cone that screws either directly on the base or on the shock spring (see adjacent drawing). The cutting lengths are based on inserting the rod as far as possible into the spring of base loading coil. This gives the user approximately 3/4" of adjustment in case the rod was inadvertently cut too short.



TLP SERIES

1. Install the two #10 set screws with the allen wrench. Set screws and allen wrench are supplied.
2. If antenna coax cable and mount must be installed, be sure to route the cable as shown.
3. On newer cars the TLP will need to be mounted along the side of the trunk lid or hood. On older models the TLP may be mounted on the lip of the trunk lid nearest the rear window of the auto. **Tighten the set screws sufficiently to break through the paint and establish a good ground connection.**
4. Route coax cable from the trunk area to the radio. Install the connector. Connect antenna cable to radio.
5. Install antenna on TLP mount.



Rod Cutting Charts

LM QUARTER WAVE		
OPER. FREQ.	ROD LENGTH	
	(INCHES)	(CM.)
Q		
136 MHz	20-3/4	52.7
138 MHz	20-1/2	52.1
140 MHz	20-1/4	51.4
142 MHz	20	50.8
144 MHz	19-3/4	50.2
146 MHz	19-7/16	49.4
148 MHz	19-3/16	48.7
150 MHz	19	48.3
152 MHz	18-11/16	47.5
154 MHz	18-1/2	47.0
156 MHz	18-1/4	46.4
158 MHz	18	45.7
160 MHz	17-13/16	45.2
162 MHz	17-9/16	44.6
164 MHz	17-5/16	44.0
166 MHz	17-1/8	43.5
168 MHz	16-7/8	42.9
172 MHz	16-7/16	41.8
220 MHz	12-1/2	31.8
225 MHz	12-3/8	31.4
225 MHz	12-3/16	31.0
400 MHz	6-15/16	17.6
410 MHz	6-13/16	17.3
420 MHz	6-5/8	16.8
430 MHz	6-7/16	16.4
440 MHz	6-5/16	16.0
450 MHz	6-3/16	15.7
460 MHz	6	15.2
470 MHz	5-7/8	14.9
480 MHz	5-3/4	14.6
490 MHz	5-5/8	14.3
500 MHz	5-9/16	16.5
510 MHz	5-7/16	13.8

LM VHF BAND				
OPER. FREQ.	W/O SPRING		W/SPRING	
	(INCHES)	(CM.)	(INCHES)	(CM.)
LM150C / LM150B				
144 MHz	49	124.5	46-7/8	119.1
146 MHz	48-1/4	122.6	45-3/4	116.2
148 MHz	47-3/4	121.3	45	114.3
150 MHz	46-7/8	119.1	44	111.8
152 MHz	46-1/4	117.5	43-1/4	109.9
154 MHz	45-3/8	115.3	42-3/8	107.6
156 MHz	44-5/8	113.4	41-5/8	105.7
158 MHz	43-7/8	111.4	40-3/4	103.5
160 MHz	43-1/8	109.5	40	101.6
162 MHz	42-1/4	107.3	39-1/4	97.7
164 MHz	41-5/8	105.7	38-5/8	98.1
166 MHz	41-1/8	104.5	37-7/8	96.2
168 MHz	40-3/8	102.6	37-1/8	94.3
170 MHz	39-3/4	101.0	36-3/4	93.4
172 MHz	39-1/4	99.7	36-1/8	91.8
174 MHz	38-5/8	98.1	35-5/8	90.5

LLM UHF BAND				
OPER. FREQ.	W/O SPRING		W/SPRING	
	(INCHES)	(CM.)	(INCHES)	(CM.)
LM406C				
405 MHz	11-7/8	30.2	10-1/2	26.7
410 MHz	11-5/16	28.7	9-7/8	25.1
415 MHz	10-1/2	26.7	9-1/16	23.0
420 MHz	10-1/4	26.0	8-3/4	22.2
LM420C				
420 MHz	12-1/6	30.6	10-1/2	26.7
425 MHz	11-5/8	29.5	10-1/8	25.7
430 MHz	11	27.9	9-3/4	24.8
435 MHz	10-9/16	26.8	9-1/4	23.5
440 MHz	10-1/8	25.7	8-3/4	22.2
LM440C				
440 MHz	11-1/4	28.6	9-3/4	24.8
445 MHz	10-3/4	27.3	9-7/16	24.0
450 MHz	10-3/8	26.4	9	22.9
455 MHz	9-3/4	24.8	8-1/4	21.0
460 MHz	9-5/8	24.5	8	20.3

LM450C				
450 MHz	11	27.9	9-7/16	24.0
455 MHz	10-3/8	26.4	8-3/4	22.2
460 MHz	10-1/8	25.7	8-5/8	21.9
465 MHz	9-13/16	24.9	8-1/2	21.6
470 MHz	9-3/8	23.8	8-1/16	20.5

LM470C				
470 MHz	10-1/16	25.6	8-5/8	21.9
475 MHz	9-5/8	24.5	7-7/8	18.0
480 MHz	9-1/4	23.5	7-3/4	19.7
485 MHz	9	22.9	7-5/8	19.4
490 MHz	8-5/8	21.9	7-1/2	19.1

LM490C				
490 MHz	9-5/8	24.5	8-1/8	20.6
495 MHz	9-1/8	23.2	7-1/2	19.1
500 MHz	8-7/8	22.5	7-1/4	18.4
505 MHz	8-9/16	21.8	7	17.8
512 MHz	8-1/8	20.6	6-5/8	16.8