



INSTALLATION INSTRUCTIONS
EM-M10007 (420-470 MHz)
5 dB UHF ROOF MOUNT ANTENNA

*Congratulations on your selection of another quality antenna product from E/M Wave.
 E/M Wave is committed to continually provide the greatest antenna VALUE for your wireless applications.*

1. Parts (Figure 1):

Verify all parts are included with the Antenna as shown in Figure 1.

- A. 5 dB Antenna Whip
- B. Spring Assembly
- C. NMO Base Coil
- D. O-Ring

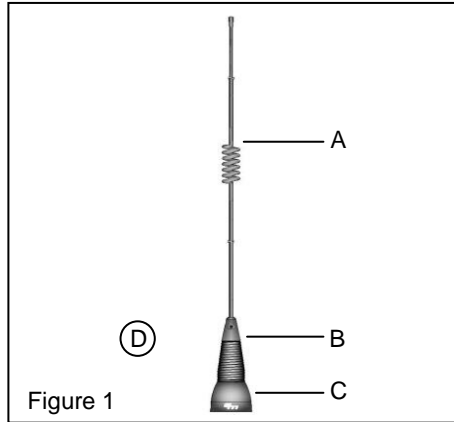


Figure 1

2. Tools:

- a. Tool for cutting stainless steel whip
- b. Hex Wrench (3/32")
- c. **Note:** Special tools are not required to install the antenna. The antenna is intended to be installed using a firm hand torque until the sealing O-ring is completely compressed against the installation surface.

3. Pre-Installation (Figure 2):

- a. The EM-M10007 is designed for installation to a standard NMO mount.
- b. Ensure O-ring is properly seated within O-ring groove as shown in Figure 2.
- c. **Important:** Verify proper operational frequency is stamped on the base of the coil as shown in Figure 2.
- d. Read and follow all Whip Cutting Instructions supplied for this model.

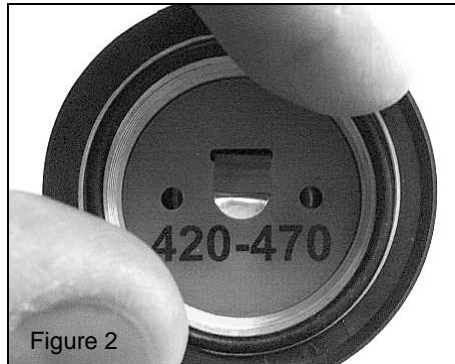


Figure 2

4. Tuning and Installation (Figure 3):

- a. Verify contact spring is completely extended. If necessary, adjust by pulling the contact outward. (Figure 3).
- b. Thread NMO Base Mount Adapter onto the vehicle NMO mount. Tighten by hand until O-Ring is completely seated.
- c. Thread Spring onto NMO Base Adapter. Firmly torque by hand.
- d. Refer to EM-M10007 whip cutting instructions. Cut whip to length according to desired frequency of operation.
- e. Verify VSWR. Apply firm torque to whip adapter set screws (2 ea.).

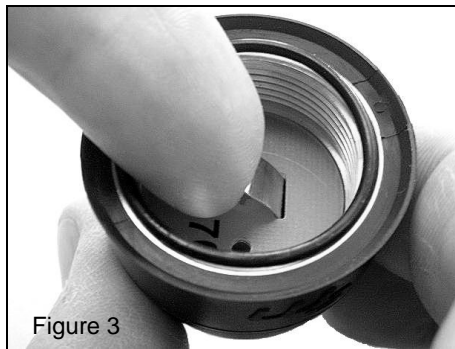


Figure 3

WHIP CUTTING INSTRUCTIONS
FOR TUNING EM-M10007
(420-470 MHz)

PLEASE CAREFULLY READ ALL INSTRUCTIONS BEFORE CUTTING THE ANTENNA WHIP.

1. IMPORTANT: Before Cutting.

It is recommended to cut whip longer than the required dimension to verify actual performance. Then trim the whip in 1/16" (1.5mm) increments to fine tune the desired VSWR response.

CUTTING NOTE: The whip can be cut using a grinding wheel or shearing tool designed for this purpose.

- 2. **NOTE:** Ensure the whip is located and completely seated inside the antenna whip adapter. The Tuned Length "W" is determined by measuring the distance between the top of the antenna adapter-spring and the bottom of the antenna phasing coil as shown in **Figure 4**. With the whip removed from the adapter, the cut length dimension will be approximately 1" (25mm) longer than the Tuned Length "W".
- 3. Identify the desired frequency of operation in the left column of Table 1.
- 4. **TUNING NOTE:** For frequencies not listed in Table 1, interpolation of Tuned Length "W" is permitted. When interpolating intermediate frequencies, the antenna frequency response increases by approximately 1 MHz for every 0.04" (1 mm) of cut length.
- 5. Cut the antenna whip as required to establish the specified Tuned Length "W" as shown in Figure 4. Imperial and Metric Length units are given for convenience.
- 6. Verify VSWR. Secure set screws (2 ea.).

FREQUENCY (MHz)	TUNED WHIP LENGTH "W"	
	(inches)	(mm)
420.0	15-3/32	383
425.0	14-1/2	368
430.0	13-32/32	353
435.0	13-5/16	338
440.0	12-27/32	325
445.0	12-9/32	312
450.0	11-13/16	300
455.0	11-15/32	291
460.0	10-15/16	278
465.0	10-5/8	270
470.0	10-1/4	260

Table 1

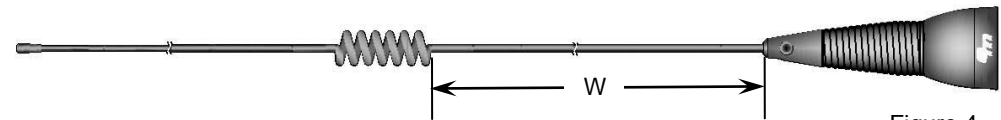


Figure 4

[Note: Add 1" (25mm) to Tuned Length "W" when cutting whip.]