MFJ-17754 ADDENDUM

PLEASE NOTE:

This antenna uses metal cable clamps to allow for the easy, quick adjustment of the inner 20 meter length and of the outer 40 meter length without the need to cut any wires. Just simply loosen the clamp and pull the wire through the insulator (ceramic insulator or plastic coil insulator) and retighten the cable clamp. The distance between the center coax connector and each insulator determines each center frequency.

Original 20 meter center frequency before tuning is approximately 13.7 MHz.

Original 40 meter center frequency before tuning is approximately 6.8 MHz.

20 meter frequency change per foot is approximately 0.492 MHz. /

40 meter frequency change per foot is approximately 0.516 MHz.

Example: If the distance between the black plastic center coax insulator and each of the loading coils is shortened by six inches, this will give an overall length change of 1 foot and will raise the 20 meter frequency to fc = 13.7 MHz + 0.492 MHz = 14.192 MHz.

Please note that the above measurements refers to a flat dipole that was approximately 25 feet above ground.

THE 20 METER INNER SECTION MUST BE TUNED BEFORE THE OUTER 40 METER SECTION BECAUSE THE 40 METER SECTION USES THE COIL AS A LOADING COIL WHILE THE 20 METER SECTION SEES IT AS A HIGH IMPEDANCE.

Example # 2:

Suppose you decide that you want the center frequency on the 40 meter band to be 7.3 MHz, and the antenna is fully extended with a center frequency of 6.8 MHz. The calculation is as follows:

Fgoal - Foriginal = 7.3MHz - 6.8MHz = 0.5 MHz = FREQUENCY CHANGE

FREQUENCY CHANGE X (FEET/MHz conversion factor) = length change ON 40 METERS FOR 40 METERS

 $0.5 \text{ MHZ} \times (1 \text{ FOOT}/0.516 \text{ MHz}) = 0.97 \text{ FEET} = 11.64 \text{ INCHES}$

This length change of 11.64 inches on 40 meters is an overall length change. This means that each of the outer element wires must be shortened by 5.82 inches.

Frequency and antenna length are inversely proportional which means that the antenna must be shortened to raise the frequency and the antenna must be lengthened to lower the frequency.

Please note that these examples do not show what happens to the other band when one band is changed. The effect on the opposite band is a frequency change of about 1/10 of the change on the current band. Therefore, a little trial and error may be necessary in the final tuning.