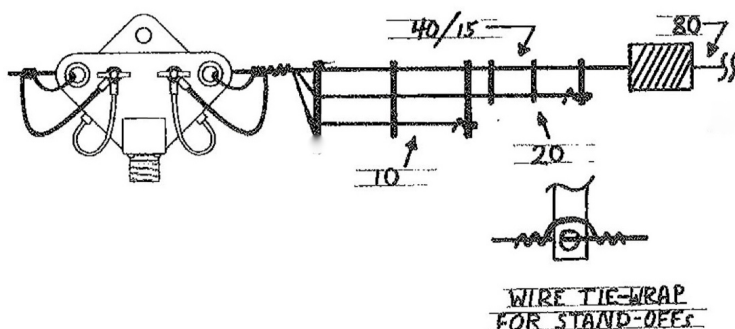


Instructions for Model DX-ULTRA Shortwave Receiving antenna

Note: The Model DX-ULTRA is a slightly retuned version of the Model DX-CC HF ham radio antenna, favoring the adjacent HF shortwave bands and providing broadband HF coverage. Therefore, these assembly instructions are taken from the Model DX-CC. SWR, ham band references and other transmit data does not apply. See our WEB site at <www.alphadeltacom.com> for complete Model DX-CC data.

Alpha Delta HF wire dipoles are precision made products, manufactured in the U.S.A in our ISO-9001 certified facility for the highest quality possible. Due to the design of the ISO-RES inductor coils (not traditional lossy traps), the efficiency of the antennas is outstanding and they are used worldwide with great DX results around the globe! Stainless steel hardware and insulated high tensile strength solid copper 12 ga. wire is used to withstand the most severe environments. When you put it up, it STAYS up!



1. Unroll the wire elements, removing any kinks that may have been induced in packaging.
2. At each side of the center insulator you will find 3 wires: (A.) The 80/40/15 meter wire with an ISO-RES coil and 3 long and 3 short stand-offs installed. It is approx 41 ft. long. (B.) The 20 meter wire, approx 16 ft. long. (C.) The 10 meter wire, approx 8 ft. Long.
3. With the antenna wires laid out on the ground, fully extended, run the 20 and 10 meter wires through the stand-offs as shown in the graphic with the 20 meter wires running through the center holes of the 3 long stand-offs, and the bottom holes of the 3 short stand-offs. The end of the 20 meter wire should be twisted back on itself (about 2 inches) through, and around the last short stand-off for proper support. The 10 meter wires run through the bottom holes of the 3 long stand-offs, as shown. The end of the 10 meter wire should be twisted back on itself (about 2 inches) through, and around the last long stand-off.

All of the stand-offs should be spaced as equally as possible for best support. When all the wires and stand-offs have been positioned properly, tightly wrap wire-ties around the top and bottom of each stand-off and antenna wire to prevent movement. For the wire-ties, cut approx 6 inch lengths from the 12 ft. coil of wire provided. See the graphic for example.

CAUTION! CAUTION! CAUTION! Never install antennas near power lines or drop lines as contact with these lines is DANGEROUS and could cause bodily injury or death! Think SAFETY!

The Model DX-ULTRA is rated for 1 kW SSB/CW transmit power and can be used with a wide range (10:1 tuning range) antenna tuner for transmitting applications on selected ranges.

ALPHA DELTA Model DELTA-C Antenna Hardware Kit

This kit contains 1 DELTA-C Center Insulator, antenna connecting hardware, 1 Model SEP Arc-Plug™ static Electricity Protector (installed on the back of the Delta-C) and 2 Model DELTA-CIN End Insulators.

DELTA-C components are molded of high impact UV and RF resistant material called DELTALLOY™. It is tough and practically indestructible. Only stainless steel is used for exposed hardware.

For proper installation, feed the antenna wire through the strain relief holes on each side of the DELTA-C Center Insulator, wrap it back on itself approximately 3-5 turns, then route the end of the antenna wire to the solder lug on each set of connection hardware.

A small loop may be formed from the wrap to lug to relieve tension. See Fig. 1 for suggested connection method (be sure to reinstall the hardware in the same sequence as provided – washers, nuts, etc. and do not over tighten the wing nuts).

Approximate antenna lengths can be determined for ½ wavelength antennas (necessary when feeding in the center with coax cable) by using the formula:

$$\text{Length (feet)} = \frac{468}{\text{Frequency (in MHz)}}$$

Some typical antenna lengths (overall total for both sides of dipole) are listed in table 1. (See fig. 2).

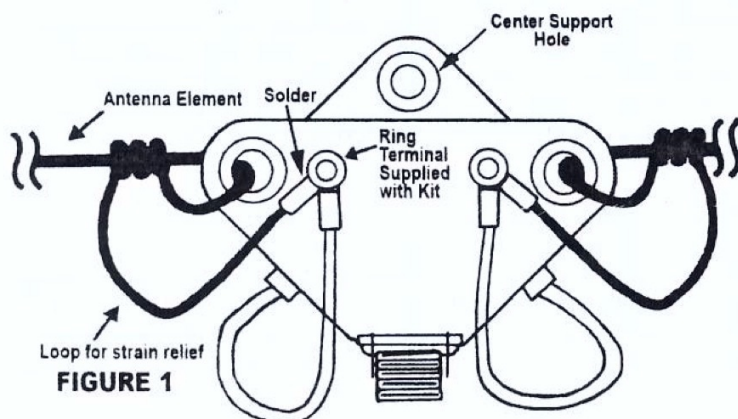


FIGURE 1

TABLE 1	
½ Wave overall lengths (approximations)	
Amateur Bands	Shortwave Broadcast Bands
160 Meters- 260 ft.	120 Meters- 195 ft.
80 Meters- 126 ft.	90 Meters- 142 ft.
40 Meters- 66 ft.	75 Meters- 120 ft.
30 Meters- 46 ft.	60 Meters- 98 ft.
20 Meters- 33 ft.	49 Meters- 79 ft.
17 Meters- 26 ft.	41 Meters- 63 ft.
15 Meters- 22 ft.	31 Meters- 51 ft.
12 Meters- 19 ft.	25 Meters- 40 ft.
10 Meters- 16.5 ft.	22 Meters- 34 ft.
	19 Meters- 30 ft.
	16 Meters- 27 ft.
	15 Meters- 25 ft.
	13 Meters- 22 ft.

Model SEP Arc-Plug® Static Electricity Protector is a special gas tube component designed to "bleed off" slow rising static electricity build-up of the kind generated by thunderstorms, high wind driven snow or sand or by a harmless looking cloudy day. These static charges have been measured to several thousand volts and can damage or destroy sensitive components in receiver or transceiver front end circuitry.

For proper operation of the Protector, it will be necessary to ground the coax shield at the entrance to the building. Your station may already meet these requirements if your coax shield circuitry is grounded to a ground bus, bulkhead, strap, braid or ground rod through the connector on your coax. If the Model SEP protector takes a strong surge "hit" beyond its rating, it is designed to fail "shorted" to indicate the need for replacement. This will be indicated by a large increase in VSWR, or a "dead" receiver since the antenna will be shorted to ground at the Center Insulator. Your equipment will still be protected until removal or replacement.

To remove the Model SEP Protector, simply remove the antenna connection hardware and remove the SEP which is installed in the cavity on the back of the Model DELTA-C Center Insulator. Reinstall the hardware in the same sequence as provided.

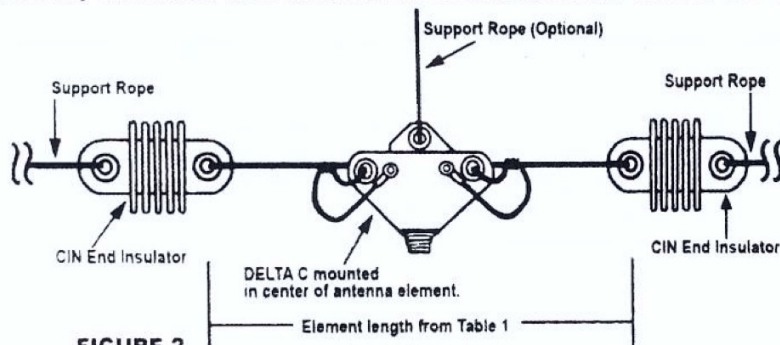


FIGURE 2

When using the DELTA-C for high power transmitting it may be necessary to remove the SEP Cartridge when VSWR exceeds 2:1.

Also, to assure the maximum protection of your sensitive equipment from lightning/EMP induced surges, we recommend the use of our Alpha Delta Transi-Trap Surge Protector at the point where the feedline enters the building.

