

ALPHA DELTA

Monoband Dipole For Amateur, Commercial, Government or SWL Applications All Models Rated 2000 Watts

DX-80-- 3.5-30 MHz (Length 134')
DX-40-- 7.0-30 MHz (Length 67')
DX-20-- 14.0-30 MHz (Length 34')

This package contains an Alpha Delta Monoband dipole antenna system of the model indicated above. The system consists of an assembled dipole antenna which is pre-tuned for the lowest indicated frequency and 40 ft. of mounting rope. The antenna is constructed using Alpha Delta's exclusive Model Delta-C center insulator and Model CIN end insulators which are molded of Deltalloy™, an extremely tough and durable plastic specifically blended to withstand sunlight and extreme weather conditions. The use of stainless steel hardware and heavy 12 gauge PVC coated solid copper wire assures that the DX-Dipoles will tolerate the harshest environments. Also, the Delta-C center insulator contains the Model SEP static electricity protector which continuously discharges potentially hazardous static charges which can be produced by wind, rain, snow, sand and other natural phenomenon. The Model SEP cartridge is field replaceable, but should last for many years under typical conditions.

As previously mentioned, the antennas are pre-tuned to the lowest indicated frequency for that model. The antennas may be tuned to any higher frequency by shortening the elements (see chart and formula on reverse side). Also, it may be necessary to shorten the antenna slightly to assure the lowest SWR when operating at higher frequencies within the band for which the antenna is pre-tuned. Example: When operating the DX-80 at the upper end of the band (75 meters) it may be necessary to shorten the antenna to obtain an acceptable SWR. By cutting in small increments and carefully checking the SWR, it should be possible to obtain an almost perfect match with the DX-Dipoles on any frequency from the pre-tuned frequency through 30 MHz.

Note: If the antenna is operated with an SWR of more than 2:1, it may be necessary to remove the Model SEP static cartridge due to the fact that voltage present at the antenna feed point may exceed the break-down voltage of the cartridge. The cartridge can be removed from the back of the Delta-C center insulator by carefully removing the #10 stainless steel hardware which is used to attach the ends of the antenna wires. Please note the assembly order of the washers, lockwashers, wires and nuts and carefully re-assemble in the same order after removing the SEP Cartridge (*DO NOT OVER-TIGHTEN*).

The DX-Dipoles can be used as very effective multi-band antennas for all frequencies higher than the pre-tuned frequency when used in conjunction with an antenna matching unit (antenna tuner) with balanced output and fed with open-wire feeders or low loss feedline (not coax). The open wire feeders or ladder line is connected directly to the #10 stainless steel bolts on the Delta-C center insulator using the wingnuts and washers provided. Important: When operating the dipoles in a multi-band configuration, it will be necessary to remove the SEP Cartridge due to the high voltage present at the antenna feed point (see previous paragraph).

Note: When using the DX-dipoles for receiving only, it is not necessary to remove the Model SEP Cartridge regardless of the frequency of operation.

SEP Failure: The Model SEP cartridge should last many years under normal circumstances, but the cumulative effect of thousands of discharges or a very strong surge can destroy the device. The SEP is designed to "fail-safe" in a shorted condition and this will be apparent due to an increase in SWR during transmit and/or a severe reduction in received signal strength. Replacement SEP Cartridges are available from Alpha Delta dealers or directly from Alpha Delta Communications. (Refer to directions above for removing SEP cartridge).



P.O. Box 620 • Manchester, Kentucky 40962 • (606) 598-2029 • FAX (606) 598-4413

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).

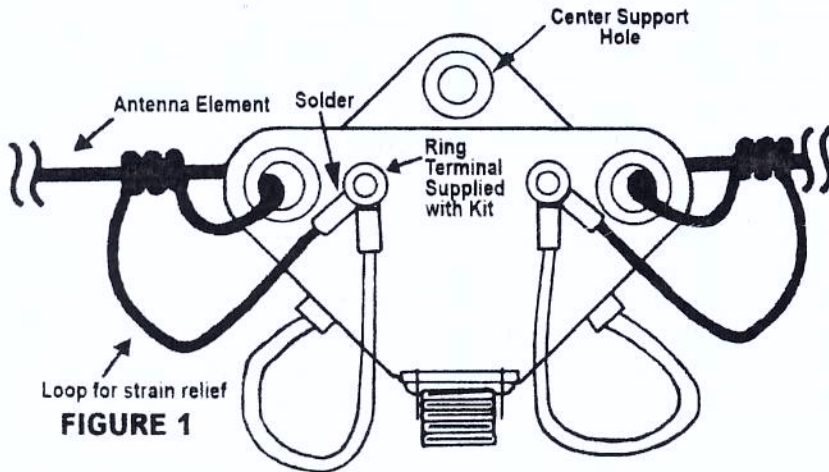


TABLE 1

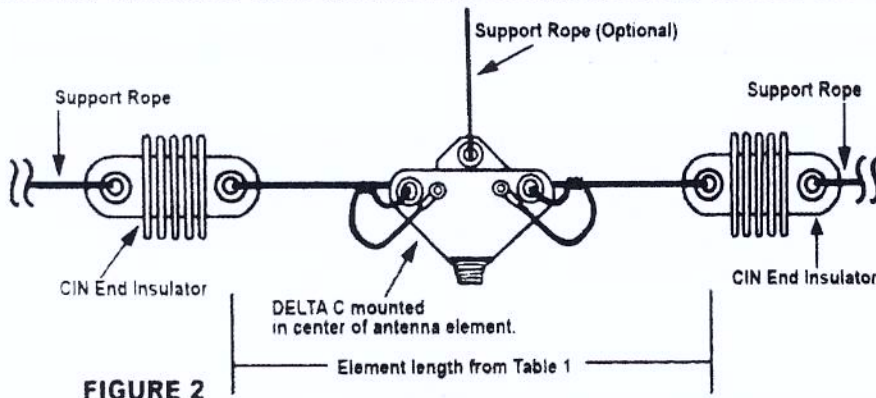
½ Wave overall lengths (approximations)

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.



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.

