

A. M. 77S9-02-52

**ENGLISH
INSTRUCTION MANUAL**

CL6DX



RADIO ANTENNAS

DIPOLE
TRANSPORTABLE
ROTATABLE
DIRECTIONAL
OMNIDIRECTIONAL

Creative Design Co., Ltd.

4-8 ASANO-CHO, KAWASAKI-KU, KAWASAKI CITY 210 JAPAN.

WARRANTY

CD warrants each new product manufactured to be free from defects in material and workmanship and agrees to remedy any such defect, or to furnish a new part, in exchange for any part of any unit which under normal installation, use, and service discloses such defect within ninety days from the date of purchase by original owner.

This warranty does not extend to any of our products which have been subjected to mis-use, neglect, accident incorrect wiring not our own, improper installation or to use in violation of instructions furnished by us. Nor does it extend to units which have been repaired or altered outside of our factory nor to accessories used therewith not of our own manufacture.

CD reserves the right to make any changes deemed necessary or desirable without advance notice or incurring any obligation to make like changes in units previously manufactured or sold.

This warranty does not cover transportation or installation costs that may be incurred. CD's sole liability is the remedy of any defect for ninety days. CD is not responsible for personal injury or property damage resulting from improper or careless installation or usage not intended by the manufacturer.

No person is authorized to assume for us any other liability in connection with the sale of our products.

All warranties are void and terminated one year after the last unit of its type and design has been manufactured by use.

You must furnish model number, date, place and proof of purchase. Such as a copy of the sales receipt to establish warranty. Your letter should include all pertinent details along with part or item numbers involved. Do not return anything until requested to do so. No warranty card is furnished. You must supply the above information.

Creative Design Co., LTD.
4-8 Asano-cho Kawasaki-ku Kawasaki JAPAN. 210

0411

LONG JOHN BEAM ANTENNA



CL6DX for 50 MHz

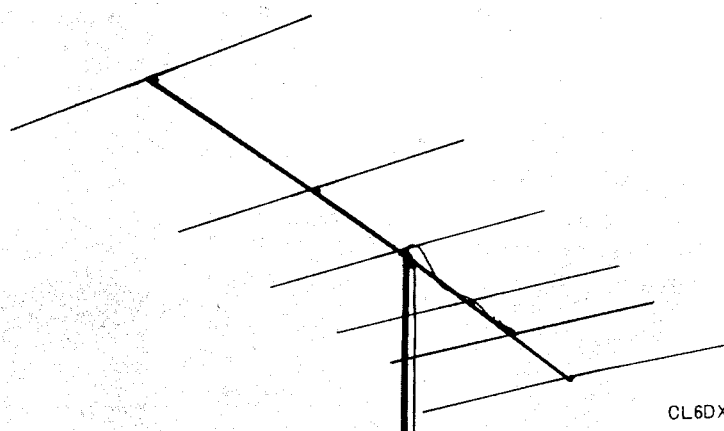


FIGURE 1-1 Model CL6DX

The 50 MHz 6-element LONG JOHN Beam Antennas put CD's long years of research and experimental experience to work in concentrated development and design. The result is an exclusive element spacing and coaxial balun (hairpin match style). The use of high-quality aluminum materials also assures high gain and excellent pattern as well as high durability. All in all, Models CL6A and CL6DX are must antennas for DXer involved in long-range QSO in the 50 MHz band.

Performance Chart	Model CL6DX 6 ELE 6 Meter
Electric characteristics	
F gain	13 dB
F/B ratio	22 dB
F/S ratio	40 dB
SWR (max.)	1.1
Impedance	52 Ω
Mechanical characteristics	
Boom length	5.8 m
Element	3 m

1st edition 2-1972

change 5 4-1980

Creative Design Co., Ltd.

4-8 ASANOCHO KAWASAKIKU, KAWASAKI CITY, JAPAN

SECTION 1

1. GENERAL

1.1 INSTRUCTION

This instruction manual describes for assembly, installation and operation of the CD model CL6DX antenna.

1.2 GENERAL DESCRIPTION

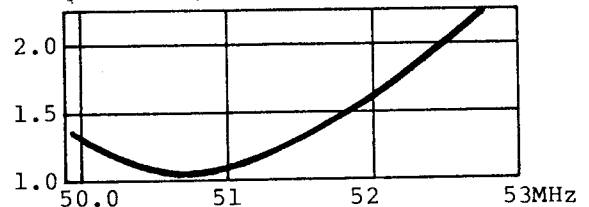
Model CL6DX is 6 element, Yagi type monoband beam antenna designed to provide the best performance for the limited boom length, using specially selected element space and element length. This antenna has a high gain-to-spacing ratio and well adjusted radiation angle, F/B ratio and VSWR with respect to the average height of the antenna. The impedance of the feed section is matched with 50 ohms to 200 ohms and CD's exclusive coaxial 1:4 balun is used in order to derive transferring RF energy without any power loss. This balun can withstand approximately 1kW/PEP of the RF power. High strength materials are used for the boom and element tubings and in order to have enough wind capability, swage-processed element tubings for minimizing the wind resistance.

1.3 SPECIFICATIONS Model CL6DX

Electrical:

Forward Gain	13 dB
F/B Ratio	22 dB
F/S Ratio	40 dB
V.S.W.R.(Maximum)	Less Than 1.1:1
Impedance	50 Ohms
Power Capability (Maximum)	1 kW PEP

V.S.W.R. 12m/h



V.S.W.R. CHART

Figure 1.

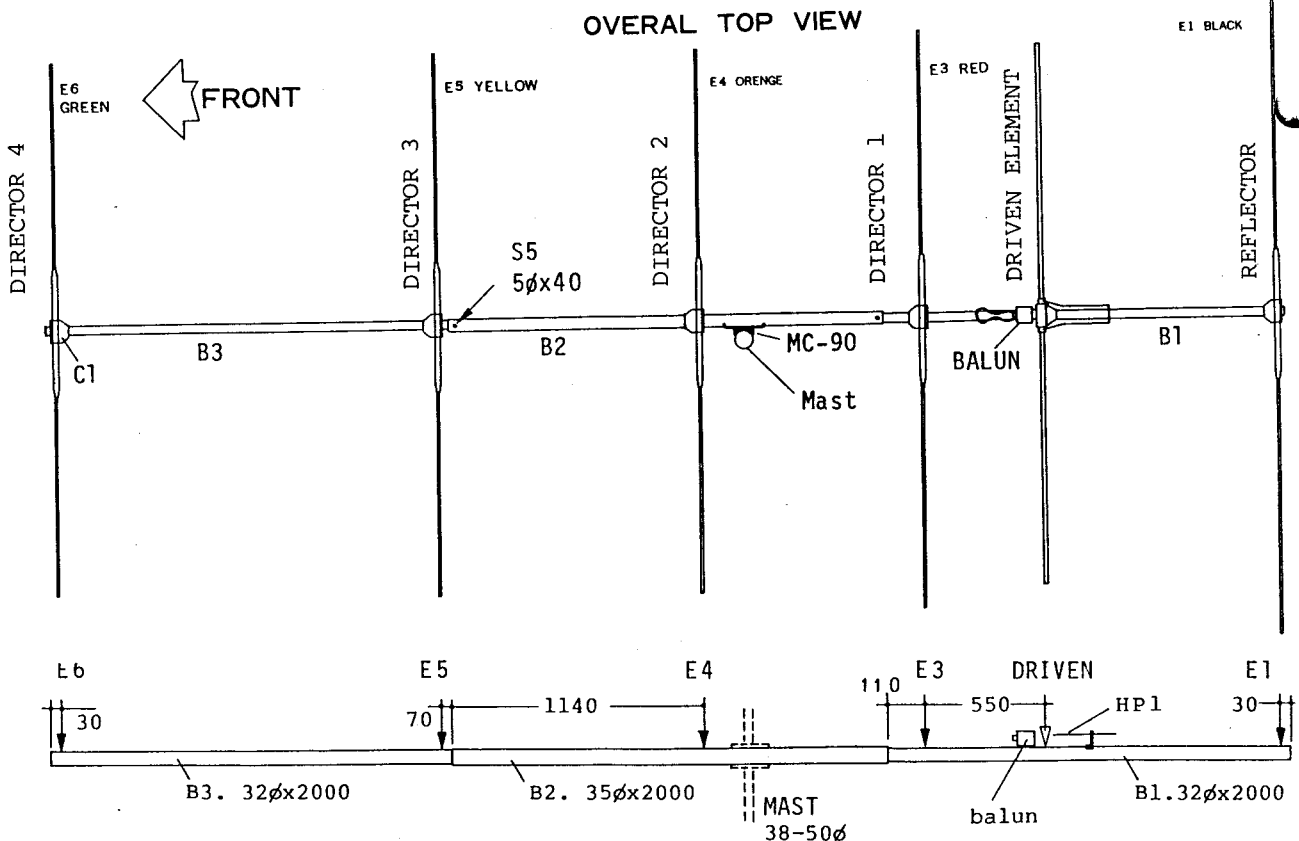
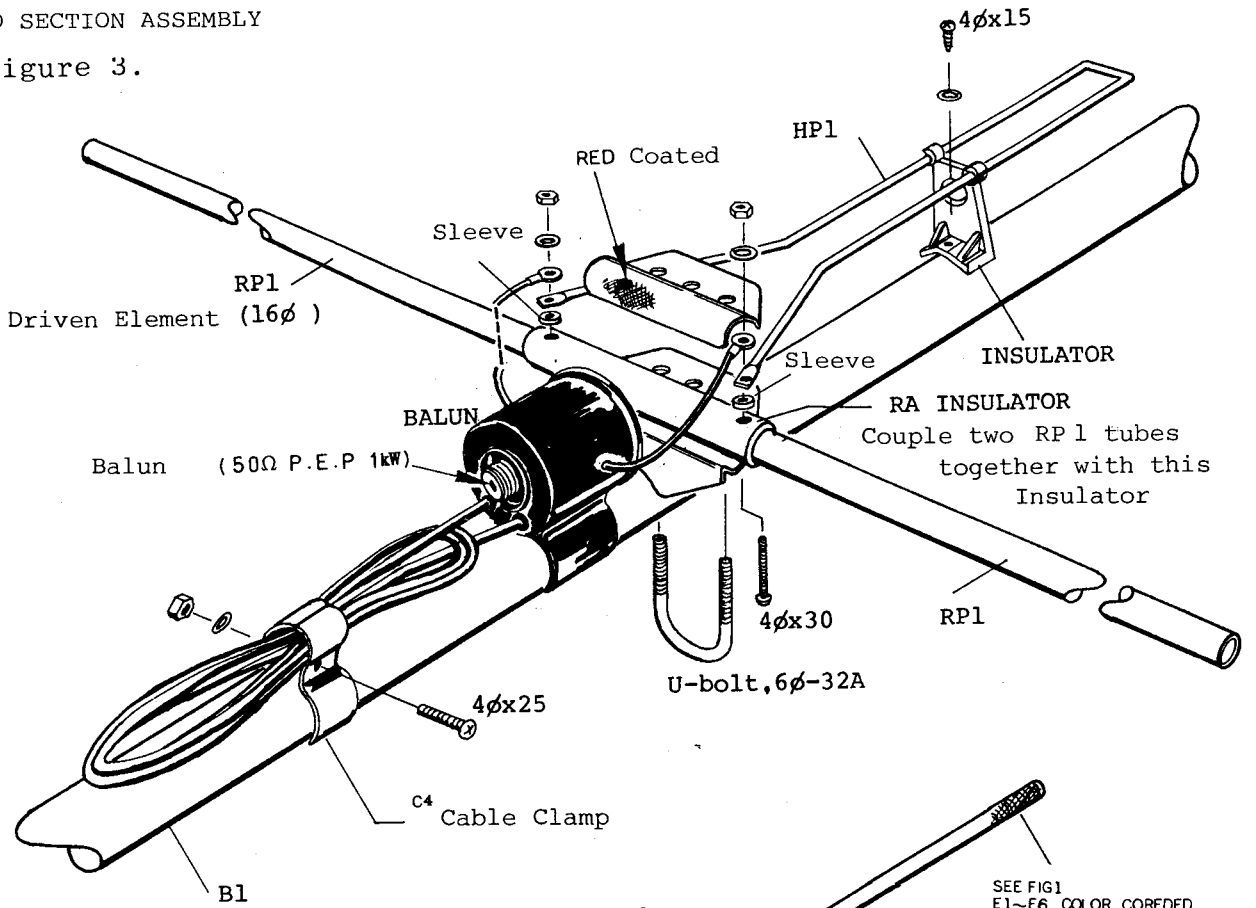


Figure 2. Element Space. model CL6DX

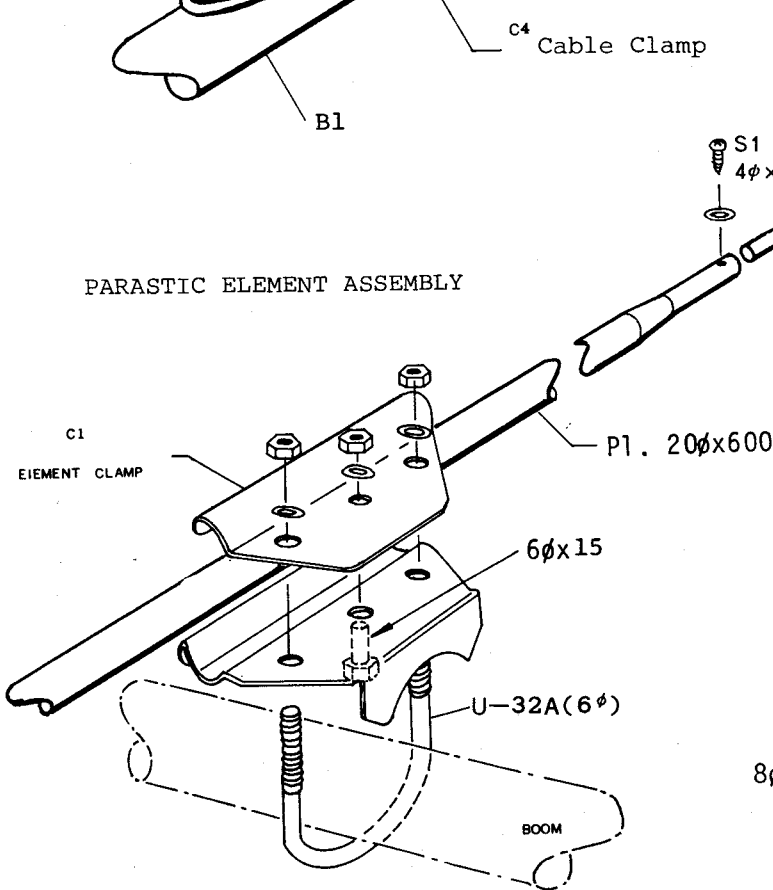
SCALE=mm

FEED SECTION ASSEMBLY

Figure 3.




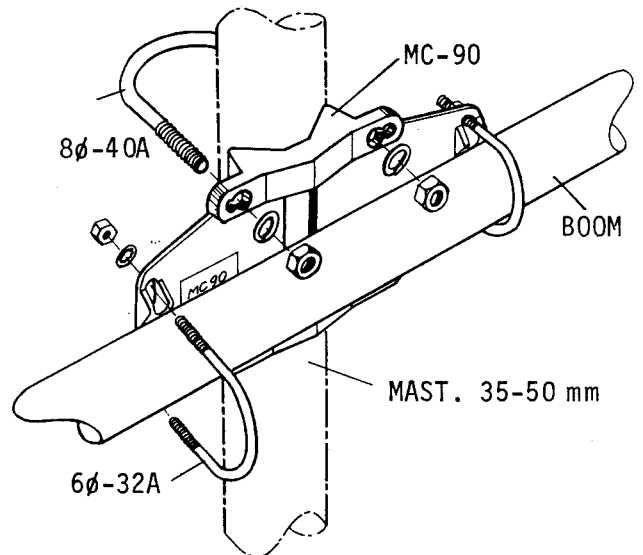
PARASTIC ELEMENT ASSEMBLY



SEE FIG1
E1~E6 COLOR CODED
See Figure 2

CAUTION

 After fixing S1 screws, tape them.



MAST ASSEMBLY

2. ASSEMBLY

The overall view of this model CL6DX is shown in the Figure 2. Assembling this antenna in accordance with the following steps is recommendable.

1. Boom Assembly and Balun Mounting (B1, B2, B3, C2, S2, S5, S4, C4 and Balun)
2. Driven Element Assembling (RPl, S3, Stub)
3. Parastic Element Assembling (Pl, E1 through E6, C1, S1 and S6)

3. TECHNICAL NOTES ON 6 METER BANDS AND ANTENNAS

3.1 SOME NOTES FOR YOUR ANTENNAS

Since the antennas are always being surrounded outdoor, which means antenna is exposed to corrosion by weathering, salty mist or sulphar dioxide gas and the like. Unless certain protection is provided at the time of assembly and installation, the function of a new antenna cannot be maintained. Electrolytic corrosion of joints must be taken into account as an important consideration. Bolts and clamps as mechanical components need to be given a rust preventive coating. The important joint sections against the electrolytic corrosion are located between the stub and elements and the balun output lead terminal. It is advisable also to closely wrap protective tape around the connectors and the element joint screws. Any overlap of tubing as shown in Figure 6, tends to absorb water with a capillary action. This is also found in the connector portions. Since the water absorption is made in the gaps, grease shall be applied to the gaps and entirely taped. Care must be taken particularly on the tapping screws because it may come off due to vibration.

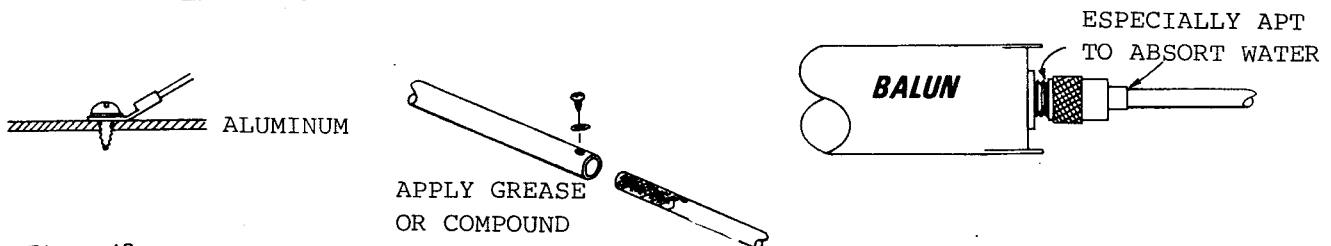


Figure 10

3.2 ANTENNA HEIGHT AND ITS PERFORMANCE

In order to obtain best performance, it is best to have the height of an antennas as high as possible above the ground and to use it as a single unit. Since the DX communications by means of the ionosphere on the 50MHz bands is not usual, but mostly by means of ground wave instead. Therefore radiation angle must be low angled. Figure 7 shows the relationship between the antenna height and the radiation angle. The antenna equal to or greater than about 1 wave length is good enough to make it possible (See Figure 8). By an increasing of ionosphere F2 or Es (Sporadic E), greater DX communications will be possible. It is said that Es is to appear on 70 to 100km above the ground but not very often, and if 1000 to 1500 km of communication range is needed, 4 to 6 degree of radiation angle is required in the antenna setting. And 2000 km range of communication is possible in use of F2 diffracton. In this case low angle of antenna setting is required. For satisfying a variety of communicating conditions.

EACH HEIGHT IS OVER THE
CONDITION OF A STANDARD
OR AVERAGE SOIL AND NOT
INCLUDING THE ANTENNA IS
STACKD UP ON A ROOF TOP
OR A BUILDING.

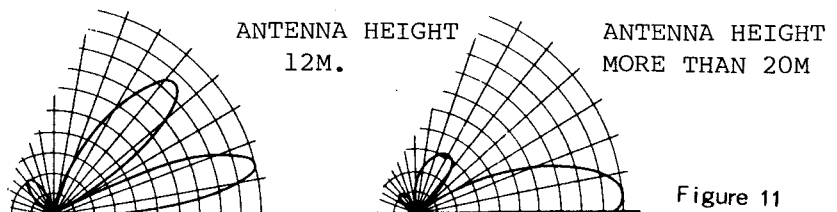
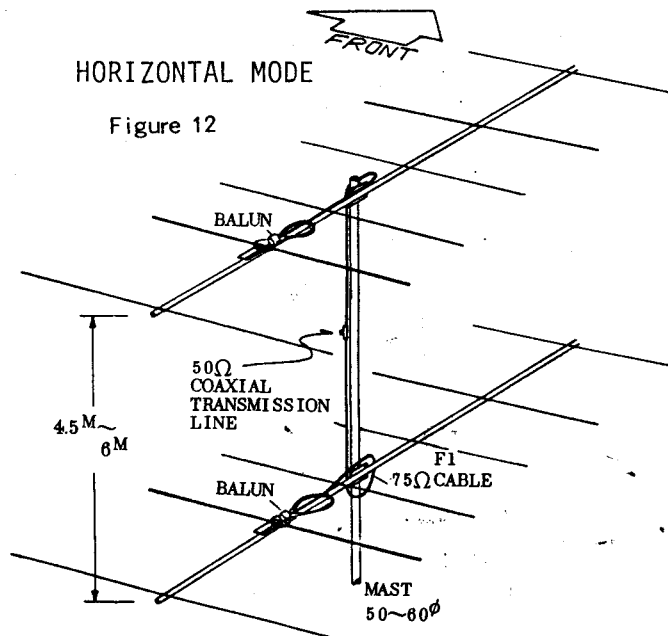


Figure 11

3.3 ANTENNA STACKING

If you want to stack the antenna, follow the procedural steps as shown in the following illustration. Use T-connector and two same type of coaxial cables (75 Ohms, 4.9m each).



PARTS LIST

Item	Descriptions	Q'ty
B1	Tube, 32φ x 2000	1
B2	Tube, 35φ x 2000	1
B3	Tube, 32φ x 2000	1
P1	Tube, 20φ x 600 (Swaged)	5
RP1	Tube, 16φ x 1295	2
E1	Tube, 10φ (Black)	2
E3	Tube, 10φ (Red)	2
E4	Tube, 10φ (Orange)	2
E5	Tube, 10φ (Yellow)	2
E6	Tube, 10φ (Green)	2
C1	Clamp, (For Parastic Element)	5
C2	Clamp, (For Driven Element)	1
C3	Clamp, (For Mast)	1
C4	Cable Clamp,	2
S1	Screw, 4φ x 10	10
S2	Screw, 4φ x 15	1
S3	Screw, 4φ x 30	2
S4	Screw, 5φ x 40	2
S6	Screw, 6φ x 15	6
	U-Bolt, 6 - 32A	8
	U-Bolt, 8 - 40A	2
	Balun and H-Pin Stub	1

A N T E N N A A L E R T

Installation Of This Product Near Power Lines Is Dangerous. For Your Safety, Follow The Installation Directions.

[1] INFORMATION CONCERNING THE RISK OF ELECTROCUTION

Power lines that connect electric service to your house carry more than enough voltage required to kill a person by electrocution. Most often these electric lines run overhead along property lines with one or more lines coming off at a supporting pole and running across lines with one or more lines coming off at a supporting pole and running across your property to a point on, or near the roof of your house. In some cases power lines may also be buried in the ground. Every year many careless people are killed, or seriously injured, even though they are aware of the hazard of touching or allowing something they are holding to touch electric wires. Many of these accidents involve people who are installing (or removing) some type of antenna which is often mounted on a long metal supporting pipe that has several guy wires and cables attached to it. These assemblies are cumbersome and, therefore, difficult and unsafe for inexperienced people to handle even under the best conditions. The slightest wind, rain, too bright sunlight, too little light, a sloping roof, or other unsure footing, and other characteristics of the installation site, along with many other factors can serve to greatly increase the hazard of possible contact with power lines.

For your safety get professional help with your antenna and tower installation and read and observe the safety precautions outlined below.

[2] TYPES OF SUPPORT STRUCTURES

Create base station antennas and towers are designed to attach to a mast or pipe not supplied with the antenna. The types and sized are given in the assembly instructions for each model.

[3] SITE SELECTION

(A)
It is recommended that the following guidelines be used for safety in selecting a site for the installation.

(1)
Figure the height of the total antenna and assembly including supporting structures.

(2)
Select a site for the base of the structure that is a distance at least twice the total height away from the nearest power line.

A site which meets these safety criteria may not be practical either because of available space or because performance of the antenna may be impaired. If this situation occurs, do not attempt to install the antenna yourself. Get a professional installer to do it for you.

(B)

Height limitations are placed on antenna installations by the FCC, normally at 20 meters above ground or 10 meters above a building for Amateurs. There may be additional restrictions or rules that are different which apply to your specific site, especially if you are near an airport. Check the FCC rules and regulations. Also, there may be local ordinances with which you must comply.

(C)

There are several different mounting methods used in antenna installations. Recommendations for best performance appear in some of the instructions covering specific models of Create antenna and towers. Common locations include:

1. Roof
2. Chimney
3. Side of Building
4. Free Standing

The characteristics of your particular site and the type of antenna involved must be considered to determine which is most suitable. Since a determination based on performance may not be compatible with the safety criteria of A above, it is recommended that a professional select the site and make the antenna and tower installation.

[4]

SAFETY PRECAUTIONS

(A)

If you are not experienced in installing antennas or towers you are advised to seek professional assistance.

(B)

Select the location to install your antenna with safety in mind. Again, you are urged to obtain professional help for a safe installation, as well as for best performance. More information concerning site selection is contained in a previous section.

(C)

Call your electric power company. Advise them of your installation plans. For your safety, ask them to provide assistance and shut-off power temporarily during the installation or removal process.

(D)

Plan your procedure carefully so that anyone helping knows what he is supposed to do and when. You cannot afford confusion with a cumbersome assembly half way up or down. A few tips that may be helpful are:

(1)

Install your antenna only in good weather and in daylight. Remember, a small amount of wind or rain or poor visibility greatly increases the possibility of an accident.

(2) Assemble your antenna following individual assembly instructions and attach it to the mast, if used, on the ground near the location planned for the mounting base. Attach the necessary length of coaxial feed cable.

(3) If the antenna is to be mounted on a mast of one or more sections of metal tubing or pipe, the assembly should be guyed using three guy wires per level at about 10-foot intervals starting just below the attachment point of the antenna. Estimate lengths needed and attach one end of each guy wire to the mast and lay along the mast on the ground. When all are attached, temporarily tie them in a bundle along with coaxial cable near the base of the mast to keep them from flopping about during erection.

(4) A non-conductive rope can be attached near the top of the mast to be held by a person standing away from those erecting the assembly and used to guide it away from power lines in the event the assembly starts to fall.

(5) Before you raise the antenna or tower, install the mounting bracket and, if the antenna is to be guyed, any anchor bolts at calculated guying points.

(6) There is an extra warning label included with each antenna and tower. Attach it in a clearly visible spot on the base of any supporting structure used.

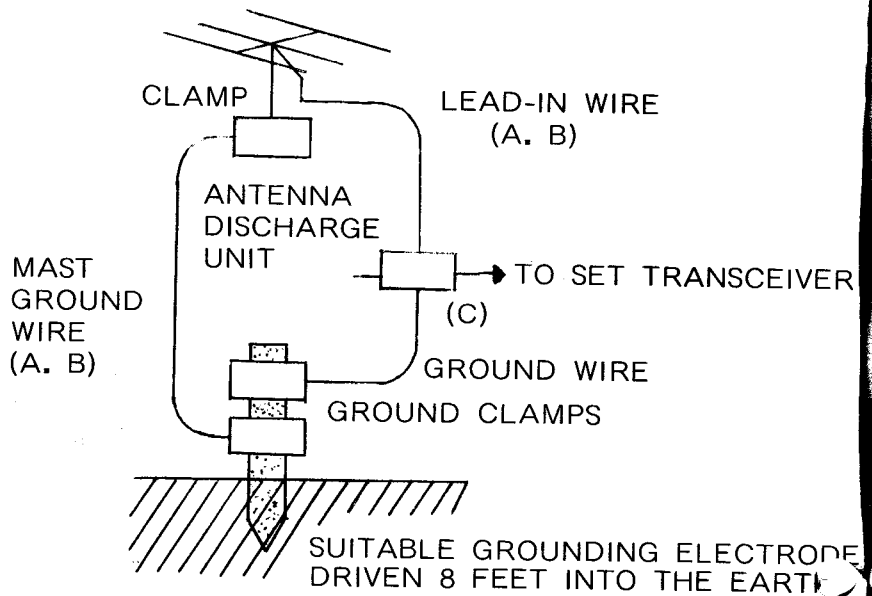
(E) If the antenna start to fall and you can't control it, let go fast. Don't hang on trying to recover, let it fall. Remember, should the antenna, tower, mast, cable (even though insulated for low voltage) or guy wires contact a power line the whole assembly will become charged with voltage and anyone touching it can provide an electrical path to ground and be instantly electrocuted.

(F) Should the assembly accidentally come in contact with power lines, don't touch it. Call the power company.

(G) If someone comes in contact with the electric power, don't touch him or you will also be electrocuted. First, remove the victim from contact with the electricity. Use a dry board, stick or rope. Call for medical help and apply artificial respiration if the victim is not breathing.

(A)
Use No. 8 aluminum or 10 AWG copper or No. 8 AWG copper-clad steel or bronze wire, or larger as ground wires for both mast lead-in. Securely clamp the wire to the bottom of the mast.

(B)
Secure lead-in wire from antenna discharge unit and mast ground wire to house with stand-off insulators spaced from 4 feet (1.0 meters) apart.



(C)
Mount antenna discharge unit as close as possible to where the lead-in wire enters the house.

(1)
Drill a hole in wall near set just large enough to permit entry of lead-in.

(2)
Push lead-in through hole and form a rain drip loop close to where it enters house. (Carefull, there are wires in that wall.)

(3)
Put a small amount of caulking around lead-in where it enters house to keep out draft.

(4)
Install static electricity discharge unit.

(5)
Connect antenna lead-in to set.

[5] ANTENNA REMOVAL

Removal of the antenna should be exactly the reverse of the installtion instructions. Please, for your own safety, follow the Instructions for installing the antenna starting with the last step first. That's the only safe way to remove an antenna.