

A. M. 77S9-02-52

ENGLISH
INSTRUCTION MANUAL

CLP 5130-1



RADIO ANTENNAS

DIPOLE
TRANSPORTABLE
ROTATABLE
DIRECTIONAL
OMNIDIRECTIONAL

Creative Design Corp.

4-8 ASANO-CHO, KAWASAKI-KU, KAWASAKI CITY, 210-0854 JAPAN.

AM 872-510-24



ASSEMBLY MANUAL

組立説明書

V・UHF LOG PERIODIC ANTENNA

ログペリオディックアンテナ

CLP5130-1

50 ~ 1300 MHz

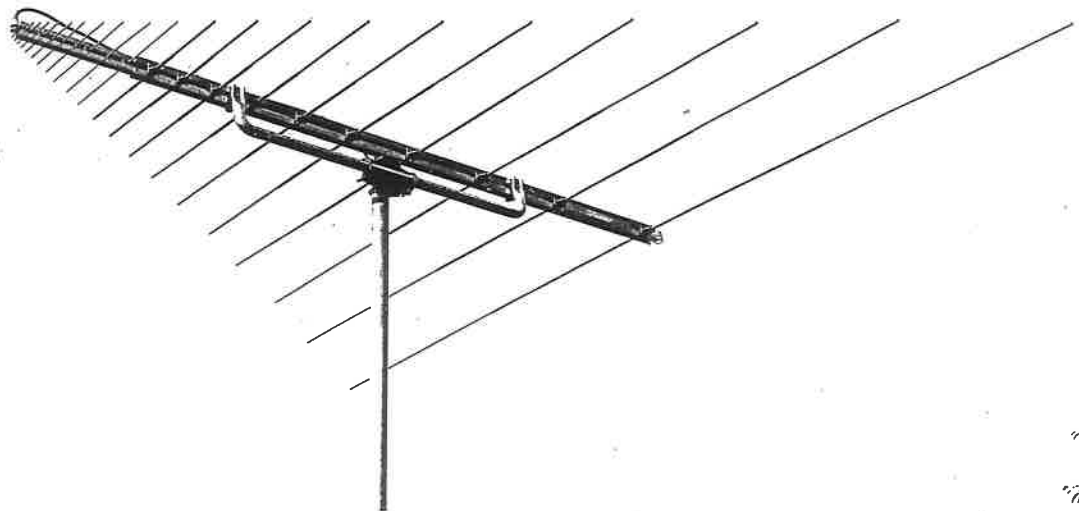


Figure 1. CLP5130-1 Installation

Revision 5-1994
1st Edition 2-1987

クリエート・デザイン株式会社
Creative Design Corp.

注 意

このアンテナの組立と据付工事をする前に必ずこの取説を全部読んでから始めて下さい。
アンテナの組立と据付は専門的な経験を必要とします。この取説はアンテナ工事の経験者を対象として説明されています。全く経験のない者がこのアンテナ工事をしてはいけません。CDでは未熟者によって危険な施工がなされ、不具合が生じてもその責任は負い兼ねます。もしアンテナ工事の建設についての相談や手助が必要な場合は当社代理店又は直接当社宛に問い合わせてください。

WARNING

Installing and rigging masts and antennas require highly specialized skills and experience. This drawing and the instructions within assume that personnel involved have these skills and have installed similar products before. No one should attempt to install this antenna without these skills and experience. CD can assume no liability if faulty or dangerous installation practices are used. CD has factory trained personnel to assist in installation. Please contact your CD representative if consultation or assistance is required.

警 告

このマニュアルの一部又は全てを、当社の許可なく転載及び複製することを禁じます。
クリエート・デザイン株式会社

NOTICE

All rights in this publication are reserved. No part of the publication may be reproduced without the expressed written permission of CREATIVE DESIGN Corp.

SECTION 1

GENERAL AND ASSEMBLY

1. INTRODUCTION

This manual describes assembly procedures and operation of the CD Model CLP5130-1.

2. UNPACKING AND INSPECTION

After unpacking, check all parts, against the parts list in Section 3, to make sure no parts are missing. Also check that there are no damaged parts. If any parts are missing or damaged please follow the instructions contained in the warranty which is on the back side of the front cover of this instruction manual. Separate large parts (preassembled one) and small parts (bolts and nuts) and place them in a small box so that they will not be lost. Read the manual instructions carefully in order to fully understand how to assemble this antenna.

3. CONSTRUCTION

Create Model CLP5130-1 is a long periodic type antenna that is capable of operating continuously on the bands from 50~1300 MHz. Figure 1 is an illustration of the CLP5130 and Figure 2 is a construction illustration. In this manual, the illustrations are for horizontal construction. Booms for supporting the elements consist of two L channels named B1 (front side) and B2 (back side). Each element in the B1 channel is preassembled in our factory. Insulators on B2 for mounting elements are also preassembled. The elements mounted on B2 are symmetrically pretuned and cut.

4. ASSEMBLY

Assembly of the CLP5130-1 is illustrated in Fig. 2 and 3 (DETAIL-). The following is the step by step instructions for assembling the antenna.

1) FRONT ELEMENT ASSEMBLY (See DETAIL-A and B)

Element in B1 are pre-assembled (riveted). Rotate the elements so they are 90° from the boom. Using S1(M3x8) screws, secure the elements in place. Attach the two boom halves (B1) together as shown in DETAIL-B using B8 and B9.

2) REAR ELEMENT ASSEMBLY (See DETAIL-E)

On Boom B2, element insulators are pre-assembled except those in the middle section and at the ends. Insulators that are not pre-assembled should be assembled using S4(M4x35) screws. Assemble elements E11~20 as shown in DETAIL-E using S3(D4x14) screws.

3) BOOM ASSEMBLY (See DETAIL-D)

Join Boom B1 to B2 as shown in DETAIL-D using S2(M4x10) screws. Please note that it does not matter which side of the boom is facing up or down.

4) FEEDING (See DETAIL-C)

On the front side of B1, attach the F1 Feeder plate to the F2 element rod using S1(M3x8) screws. F2 has a coupler to allow for S1 screws. The top and bottom should be symmetrically mounted with the feeder secured to the boom by the B10 saddle.

5) ASSEMBLY OF BOOM CLAMP (See Fig. 3)

Mount U-shaped tube B3 to places of the boom B2 using block spacers B5 and B6 with S5(M5x55) screws (It should be mounted at the front side of E14 element and rear side of E18 element). Then fix the mast bracket B4 at the position slightly front side of center of this tube (At this stage, decide polarization of the antenna).

6) ASSEMBLY OF ARRESTOR COIL (See Fig.3)

At the back of boom B2, attach the coil B7 using S2(M4x10) screws. Please note that by adding this coil, both the top and bottom is shorted electrically. Please take care in not bending the arrestor coil as it is fragile.

7) ELEMENT CAP (See Fig.3)

Element caps ① should only be used to the upper side tip element when the antenna is mounted vertically.

SECTION 2
GENERAL AND SPECIFICATIONS

2.1 GENERAL

CD Model CLP5130-1 is a high gain, wide band VHF and UHF log periodic type beam antenna. As a standard, the antenna is designed for horizontally polarized base station used but by means of an adaptor, vertical polarization is also possible. The antenna is usable in the amateur band from 50~1300 MHz and is also suitable for FM broadcasting, scanning, V·UHF television air bands communication, government applications, and business band use.

Forward gain of the CLP5130-1 from 50~1300 MHz is 10~12 dBi (This is 10~16 times the gain compared to a nondirectional discone type antenna). The VSWR of the antenna is less than 2.0 : 1 across the band. Mechanically, the log periodic uses a specially shaped high quality aluminum boom that allows for working as a phasing line. In addition, distortions in the vertical and horizontal planes have been minimized, and adjustment of the element alignment is not necessary. The assembly of the antenna is easy. The boom to mast brackets made of a lightweight and rugged magnesium alloy.

2.2 SPECIFICATIONS

Frequency	50~1300 MHz
Number of Elements	21 ele.
Polarization	Horizontal (Vertical possible)
Forward Gain	10 ~ 12 dBi/Average Ground 6~7 dBi/Free Space
Front to Back Ratio	15 dB
Half Power Point	70~60°
Impedance	50 Ohms
Type of Connector	- N -
VSWR	2.0 : 1 or less
Power Rating	500W PEP
Boom Length	2.0 m (6' 8")
Element Length	Max. 3 m (9' 10")
Mast Size	48~61 mm (1' 1/2")
Weight	5 kgs (11 Lbs)
Wind Survival Rating	40 m/sec. (90 mph)

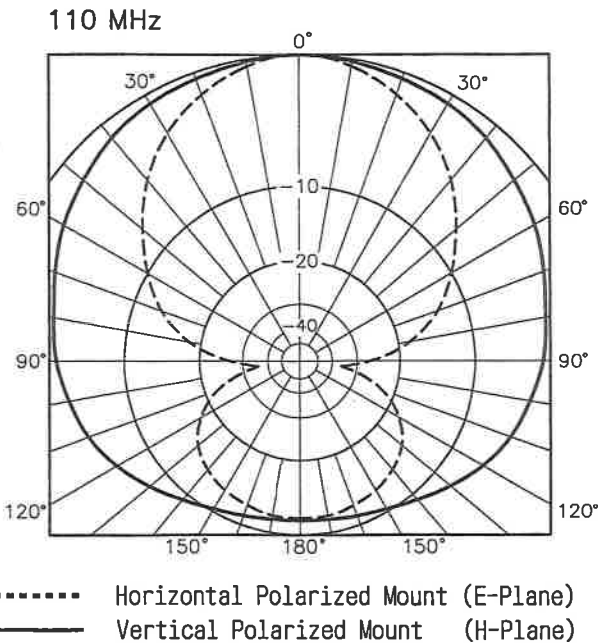


Figure 1A. Radiation Pattern. Average

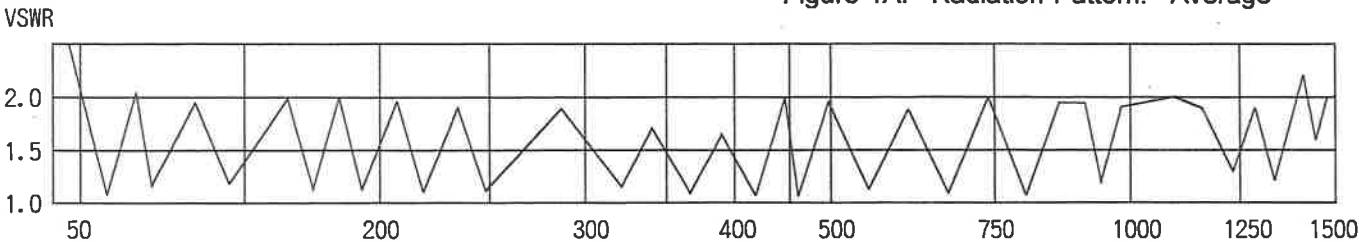
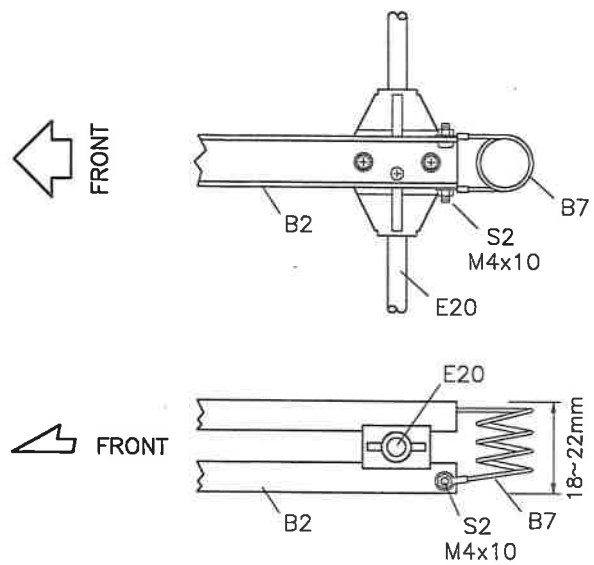
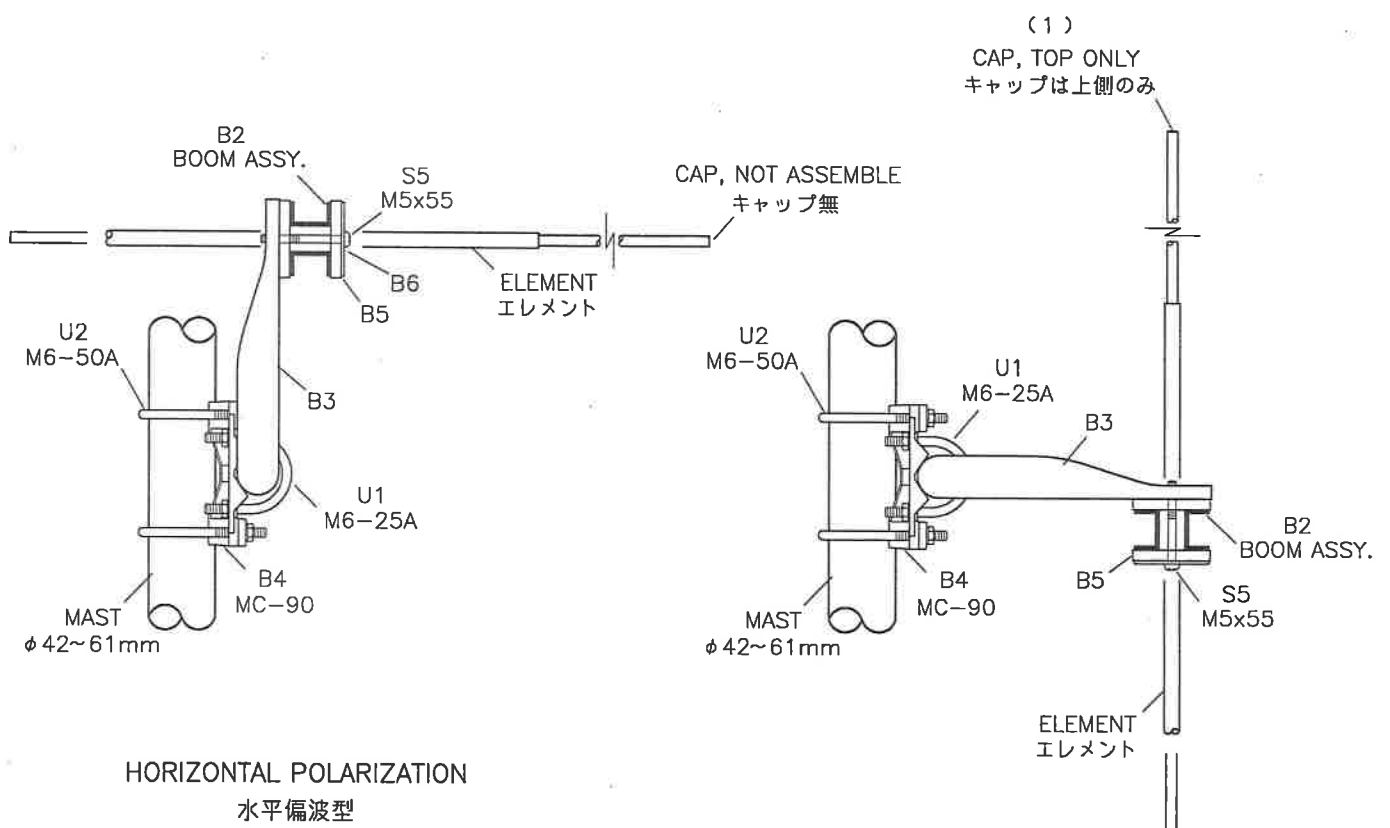


Figure 1B. VSWR Curve, Typical CLP5130-1



ARRESTER ASSEMBLY
アレスタの組立



HORIZONTAL POLARIZATION
水平偏波型

NOTE

THESE CAPS ARE USED ON TOP SIDE OF EACH ELEMENT ONLY FOR THE OPERATION OF VERTICAL POLARIZATION.

垂直偏波型はエレメントキャップ上のみ

VERTICAL POLARIZATION
垂直偏波型

ブームとマストの組立
Figure 3. Boom-Mast Assembly.

CMN-0010 DWGA.035H

PARTS LIST
LP-Antenna Model CLP5130-1

CMN-0802

ITEM	DESCRIPTION			Q'TY
B 1	FRONT ELEMENT ASSY.	CH12×22×325 (CH0.47"×0.87"×12.8") w/Rods	Alum.	2
B 2	REAR BOOM ASSY.	2-CH16×27×1710 (2-CH0.63"×1.06"×67.33") w/Insulator	Alum.	1
B 3	BOOM SUPPORT	U-30×1000 (U-1.18"× 39.37")	Alum.	1
B 4	MAST CLAMP	MC-90	Alum.	1
B 5	BLOCK	7×18×52 (0.28"×0.71"×2.05")	AAS.	4
B 6	STRAP	20×45 (0.79"×1.77")	Alum.	2
B 7	COIL	ϕ 27- 4t (1.06 D-0.16t)	Nic.	1
B 8	BUSH	ϕ 12×11 (0.47" D-0.43"t)	AAS.	22
B 9	SLEEVE	ϕ 13×13 (0.51" D-0.51")	P.C.	1
B10	SADDLE	KT-4	PVC.	3
E11	TUBE	ϕ 7-10× 290 (0.28" D-0.39"×11.54")	Alum.	2
E12	TUBE	ϕ 7-10× 350 (0.28" D-0.39"×13.82")	Alum.	2
E13	TUBE	ϕ 7-10× 420 (0.28" D-0.39"×16.57")	Alum.	2
E14	TUBE	ϕ 7-10× 505 (0.28" D-0.39"×19.88")	Alum.	2
E15	TUBE	ϕ 7-10× 605 (0.28" D-0.39"×23.82")	Alum.	2
E16	TUBE	ϕ 7-10× 725 (0.28" D-0.39"×28.58")	Alum.	2
E17	TUBE	ϕ 7-10× 870 (0.28" D-0.39"×34.25")	Alum.	2
E18	TUBE	ϕ 7-10×1045 (0.28" D-0.39"×41.06")	Alum.	2
E19	TUBE	ϕ 7-10×1250 (0.28" D-0.39"×49.25")	Alum.	2
E20	TUBE	ϕ 7-10×1500 (0.28" D-0.39"×59.06")	Alum.	2
F 1	INPUT CONNECTOR	Type NR With Flange		1
F 2	ELEMENT ROD	ϕ 4×45 (0.16" D×1.77")	Nic.	2
S 1	SCREW	M3×8 W, N. (0.12" D×0.31")	Sus.	24
S 2	SCREW	M4×10 W, N. (0.16" D×0.39")	Sus.	4
S 3	SCREW	ϕ 4×14 W, N. (0.16" D×0.55")	Sus.	20
S 4	SCREW	M4×35 W, N. (0.16" D×1.38")	Sus.	11
S 5	SCREW	M5×55 W, N. (0.2" D×2.17")	Sus.	2
S6	SCREW	M4×16 W, N. (0.16" D×1.57")	Sus.	3
U 1	U-BOLT	M6-25A W, N. (0.24" D-25A)	Sus.	2
U 2	U-BOLT	M6-50A W, N. (0.31" D-40A)	Sus.	2
(I)	CAP	ϕ 7×8 (0.28" D×0.31") (For Vertical Inst.)	PP.	10

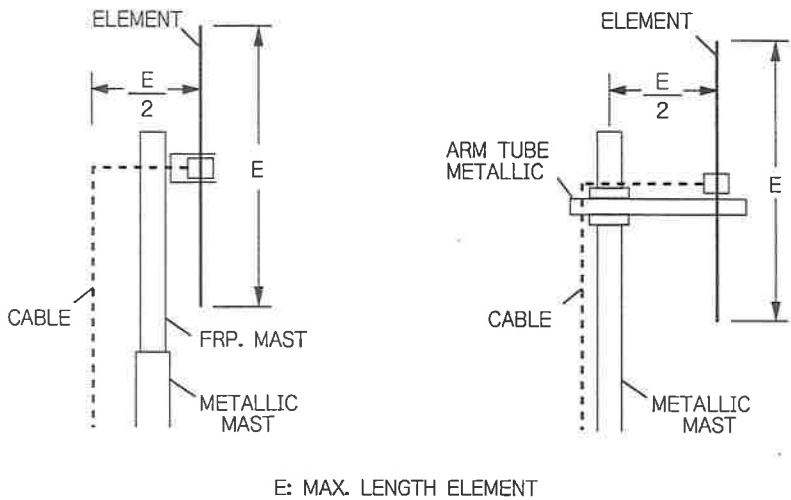


Figure 4. Vertical Polarization Mount

ANTENNA ALERT

INSTALLATION OF THIS PRODUCT NEAR POWER LINES IS DANGEROUS. FOR YOUR SAFETY, FOLLOW THE INSTALLATION DIRECTIONS.

(1) Information Concerning The Risk Of Electrocuion

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 outlines 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

{3-A} It is recommended that the following guidelines be used for safety in selecting a site for the installation.

[3-A-1] Figure the height of the total antenna and assembly including supporting structures.

[3-A-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 lines. 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 in-

{3-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.

{3-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

{4-A} If you are not experienced in installing antennas or towers you are advised to seek professional assistance.

{4-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.

{4-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.

{4-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:

[4-D-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.

[D-4-2] 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.

[4-D-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 (3) 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-D-4] A nonconductive 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.

[4-D-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.

[4-D-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.

{4-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.

{4-F} Should the assembly accidentally come in contact with power lines, don't touch it. Call the power company.

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

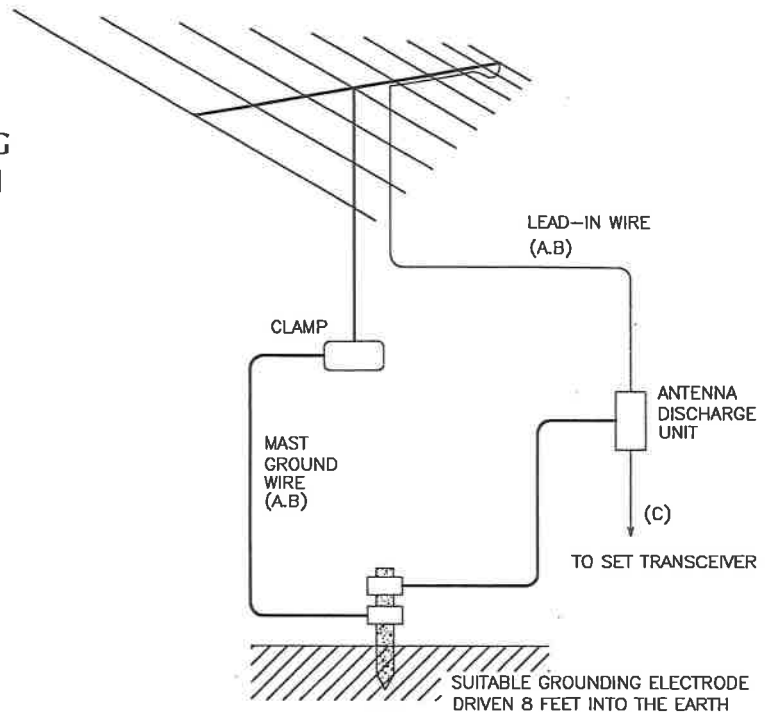
(5) Antenna Removal

Removal of the antenna should be exactly the reverse of the installation 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.

- Appendix -

(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.

[C-1] Drill a hole in wall near set just large enough to permit entry of lead-in.

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

[C-3] Put a small amount of caulking around dead-in where it enters house to keep out draft.

[C-4] Install static electricity discharge unit.

[C-5] Connect antenna lead-in to set.



Figure 2. CLP5130-1, Antenna Assembly.