A. M. 77S9-02-52

ENGLISH

INSTRUCTION MANUAL

CLP 5130-2

CREATE

RADIO ANTENNAS

DIPOLE

TRANSPORTABLE

ROTATABLE

DIRECTIONAL

OMNIDIRECTIONAL

Creative Design Corp.

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A. XFOG. HAL 784

AM 871-930-21

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

CLP5130-2

105 ~ 1300 MHz

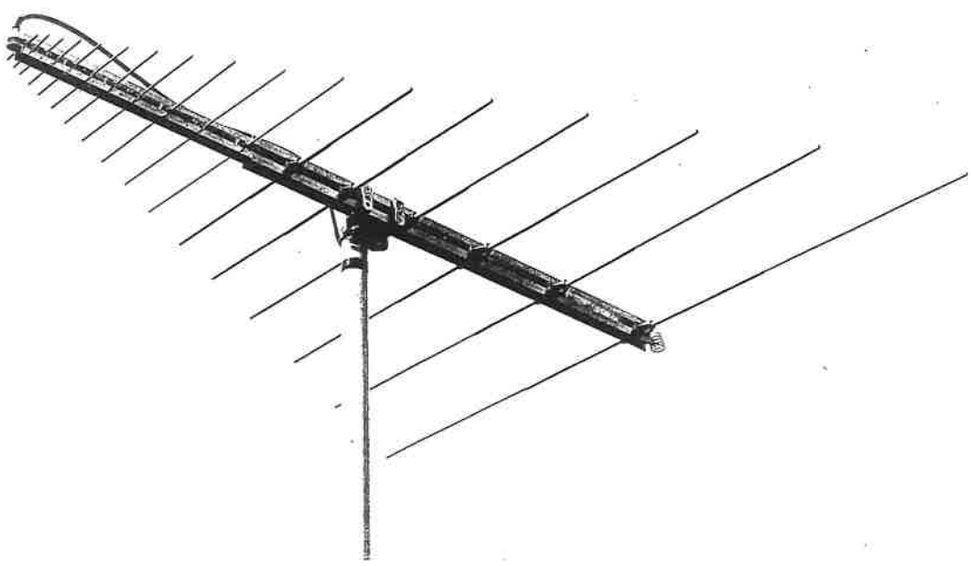

Figure 1. CLP5130-2 Installation

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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。
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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.

SECTION 1

GENERAL AND SPECIFICATIONS

1.1 GENERAL

CD Model CLP5130-2 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 105~1300 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 CLP5130-2 from 105~1300 MHz is 11~13 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.

The specification details of this antenna is shown in Section 1.2 below.

1.2 SPECIFICATIONS

	CLP5130-2
Frequency	105~1300 MHz
Number of Elements	17 ele.
Polarization	Horizontal (Vertical Possible)
Forward Gain	11~13 dBi/Average Ground
	7~8 dBi/Free Space
Front to Back Ratio	15 dB
Half Power Point	E-Plane: 70~60°
	H-Plane: 130~110°
Impedance	50 Ohms
Input Connector	- N -
VSWR	2.0 : 1 or less
Power Rating	500W PEP
Boom Length	1.4 m
Element Length	Max. 1.45 m
Mast Size	38~50 mm
Weight	3 kgs
Wind Survival Rating	40 m/sec. (90 mph)

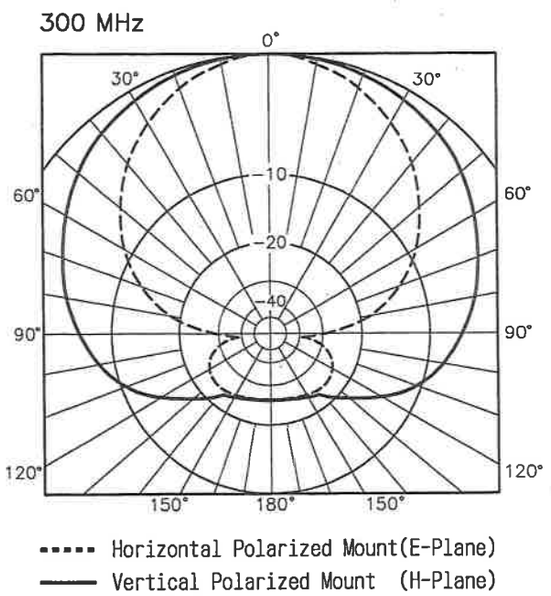


Figure 1A. Radiation Pattern. In Average.

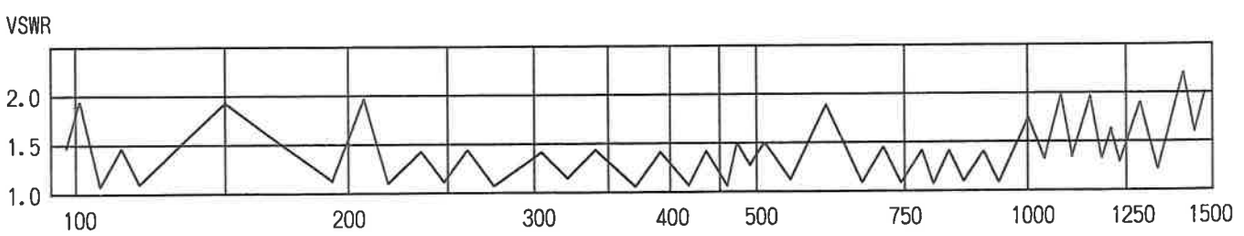


Figure 1B. VSWR Characteristic. Ex: CLP5130-2

SECTION 2
GENERAL AND ASSEMBLY

2.1 UNPACKING AND INSPECTION

This manual describes assembly procedures and operation of the CD Model CLP5130-2. After unpacking, check all parts against the parts list in Section 3 to make sure if there is no parts are missing or damaged. If any parts are missing or damaged please follow the instructions stipulated in the warranty which is on the back side of the front cover of this instruction manual. Distinguish large parts (pre-assembled one) from small parts (bolts and nuts) and separate them into a small box so that they will not be lost and easily be identify for the assembly work. Read the manual instructions carefully and fully digest it on how the parts are being used for assembling this antenna.

2.2 ANTENNA STRUCTURE

Create Model CLP5130-2 is a broadband antenna as illustrated in Fig. 1 meanwhile Fig. 2 shows a construction illustration. This manual explains under the condition that the antenna is supposed to installed in the horizontal construction (Elements are set horizontally against the ground). Booms for supporting each element consist of 2 L channels B1 for front side and B2 for back side. Each element in the B1 channel is factory pre-assembled, in the meanwhile the insulators on B2 for mounting element tubings are also factory pre-assembled. The elements tubing symmetrically pre-tuned and cut to be mounted onto B2 are provided 2 piece each as a pair.

2.3 INSTALLATION OF VERTICAL POLARIZATION

For the installation of this antenna in vertical polarization, there are 2 methods of installation in order to avoid the interference of the mast tubing. The one installation illustrated in left in the Fig. 3 shows an example that is using non-metallic mast tubing like an FRP made tubing. In case that using FRP made tubing is practically difficult, install the antenna in the way like the other illustration shown in the Fig. 3 so that the alignment of antenna element and metallic mast tubing come off at the certain distance with each other by using an arm tubing sticking sideward. The proper distance must be set is at least approximate 50% of the longest element of this antenna. These parts are not included in this kit (customer's furnished).

2.4 ASSEMBLY

For assemble of the CLP5130-2, refer to Fig. 2 and Fig. 3 and the detailed illustration in them(DETAIL-). Assemble the antenna in the following step by step procedures.

1) FRONT ELEMENT ASSEMBLY (See DETAIL-A and B) : Each element tubing is pre-assembled (revetted) in B1. Spread the elements at right angle to the boom and fix them with S1(M3x8) screws. Attach the 2 assembled B1 booms together with B7 and B8 as shown in DETAIL-B.

2) BOOM ASSEMBLY (See DETAIL-D) : Join the booms B1 to B2 together using S2(M4x10) screw as shown in DETAIL-D. There is no directivity either up or down.

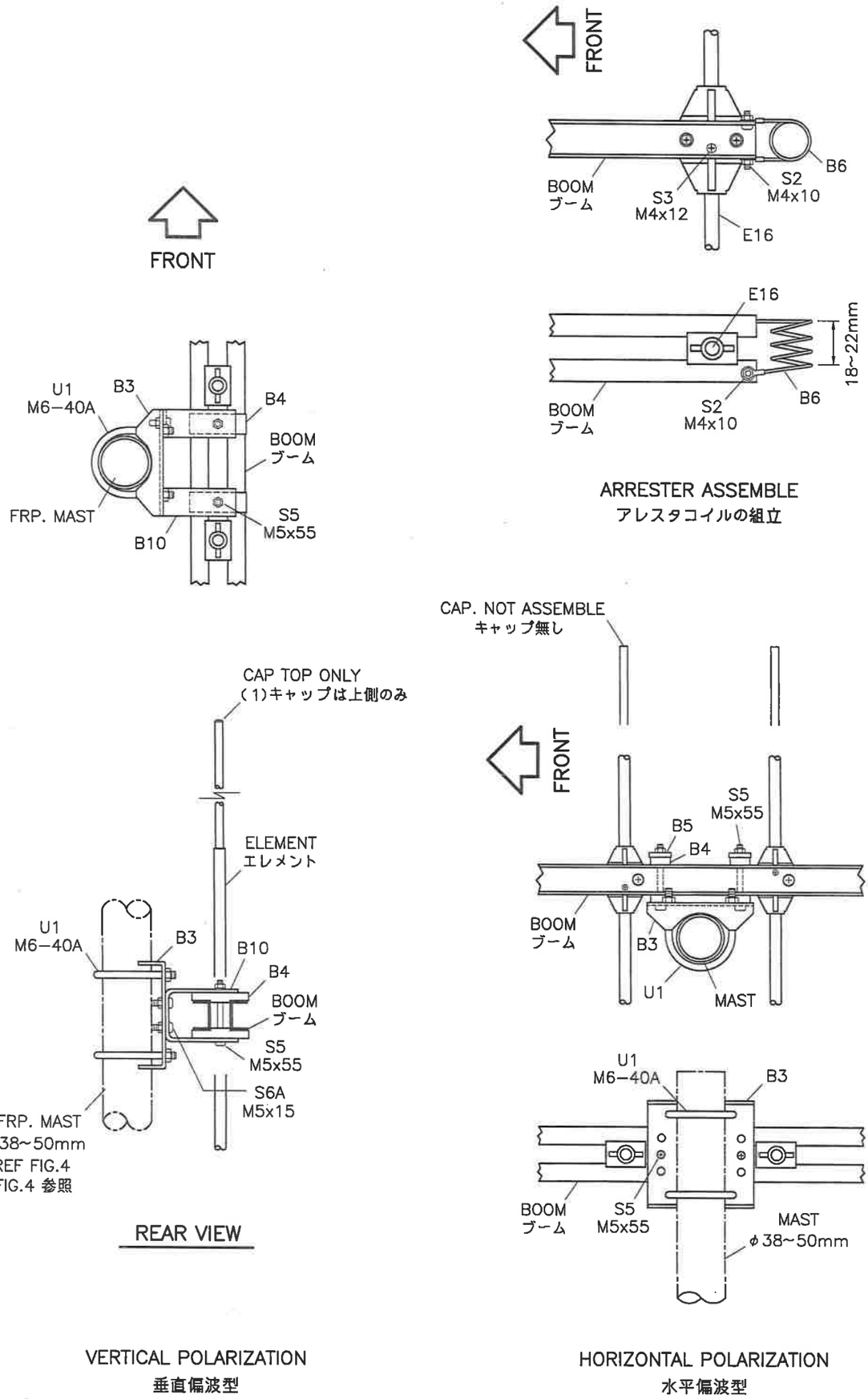
3) FEEDER INSTALLATION (See DETAIL-C) : At the front end of B1, attach the F1 feeder plate to the front of B1 together with the F2 element rod and fasten them with S1(M3x8) screw. The screw hole of the F2 rod has a screw threaded to allow S1 screw fitted. Be sure to set F2 element in reversely against the position of the next element (2nd from front). Fix the feeder to the boom using with B9 saddle.

4) REAR ELEMENT ASSEMBLY (See DETAIL-E) : As the only 2 holders located at the both ends of the rear boom B2 is pre-assembled with a screw. Assemble the rest of the holders to the appropriate locations around middle of the boom and fix them with S4(M4x35). The assembly of holder is completed, insert element tubings E11~16 into holders and fix them S3(D4x14) screw as shown in DETAIL-E.

5) ASSEMBLY OF BOOM CLAMP (See Fig. 3) : The illustration on the left side in Fig.3 shows horizontal mount meanwhile illustration on the left side shows vertical mount. For the vertical polarization mount, install U-plate B10 and insulator B4 to the boom and fasten with S5(M5x55) screw, then mount and fix the mast clamp B3 on it. For vertical polarization mount, after mounting plate B5 and insulator B4, fix the mast clamp B3 to the boom and fix it.

6) ARRESTOR COIL ASSEMBLY (See Fig. 3) : At back side of rear boom B2, attach the coil B6 using S2(M4x10) screws as both the boom line is shorted electrically. Please take care not to bend or deformed the arrestor coil.

7) ELEMENT CAP (See Fig. 3) : Element caps ① should only be used and applied to the upper side tip element when the antenna is used in vertical polarization.



ブームとマストの組立

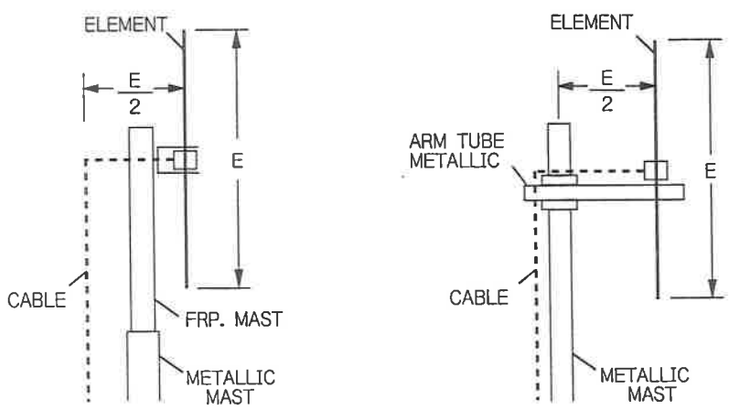
Figure 3. Boom-Mast Assembly.

CMN-8704 DWGA.035C

SECTION 3
PARTS LIST

3.1 CLP5130-2, Log-Periodic Antenna CMN-0802

Item	Description			Q'ty
B 1	FRONT BOOM ASSY.	CH-22×439 Elements Included	alum.	2
B 2	REAR BOOM ASSY.	2-CH-27×957 Elements Holder Included	alum.	1
B 3	MAST CLAMP	96×96	alum.	1
B 4	BLOCK	7×18×52	AAS.	4
B 5	STRAP	20×55	alum.	2
B 6	COIL	ϕ27-4 Tune	Nic.	1
B 7	BUSH	ϕ12×11	AAS.	8
B 8	SLEEVE	ϕ13×13	P.C.	1
B 9	SADDLE	KT-4	PVC.	2
B10	U-BRACKET	For Vertical Polarization Mount, 25×47×66	alum.	2
E11	TUBE	ϕ7/10×290	alum.	2
E12	TUBE	ϕ7/10×350	alum.	2
E13	TUBE	ϕ7/10×420	alum.	2
E14	TUBE	ϕ7/10×505	alum.	2
E15	TUBE	ϕ7/10×605	alum.	2
E16	TUBE	ϕ7/10×725	alum.	2
F 1	INPUT CONNECTOR	Type NR With Flange	alum.	1
F 2	ROD	ϕ4×45	Nic.	2
S 1	SCREW	M3×8 W, N.	Sus.	24
S 2	SCREW	M4×10 W, N.	Sus.	4
S 3	SCREW	ϕ4×14 W, N.	Sus.	12
S 4	SCREW	M4×35 W, N.	Sus.	4
S 5	SCREW	M5×55 W, N.	Sus.	2
S 6	SCREW	M4×16 W, N.	Sus.	2
S6A	SCREW	For Vertical Polarization Mount, M5×15 W, N.	Nic.	4
U 1	U-BOLT	M6-40A W, N.	Sus.	2
(1)	CAP	For Vertical Polarization Mount, ϕ7×8	P.P.	6



E: MAX. LENGTH ELEMENT

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.

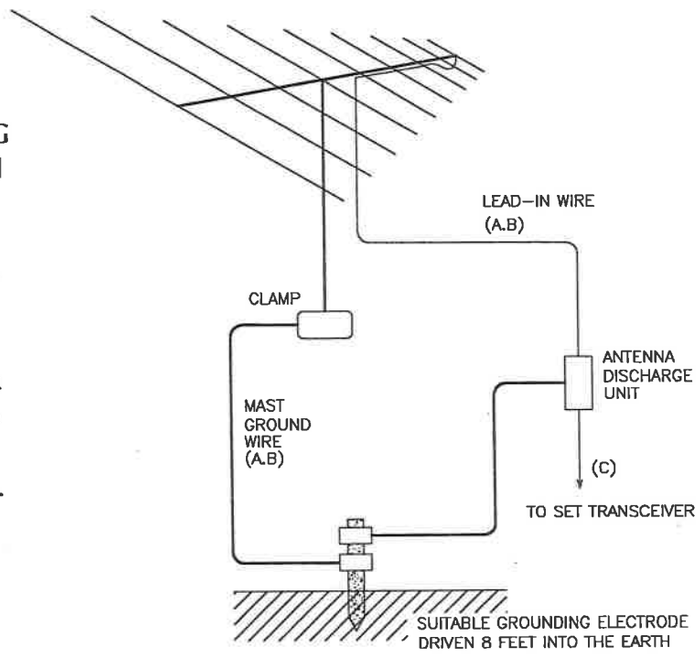
(5) Antenna Removal

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.

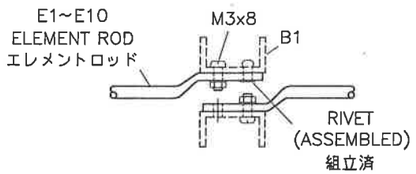
[C-1] Drill a hole in wall near set just large enough to permit entry of lead-in.

[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.)

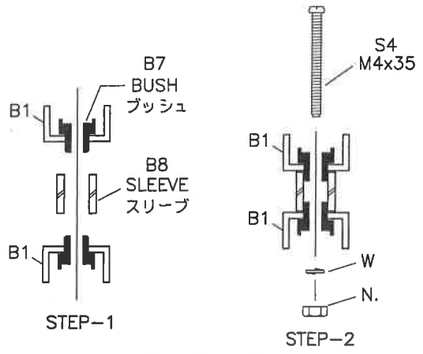
[C-3] Put a small amount of caulking around dead-in where it enters house to keep out draft.

[C-4] Install static electricity discharge unit.

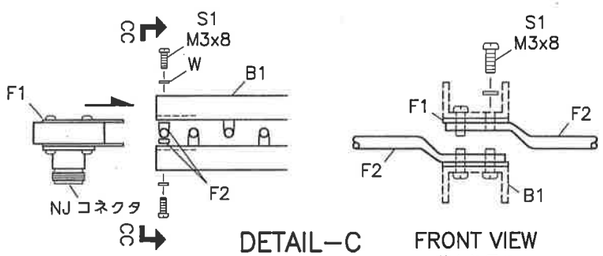
[C-5] Connect antenna lead-in to set.



DETAIL–A
10–PLACES

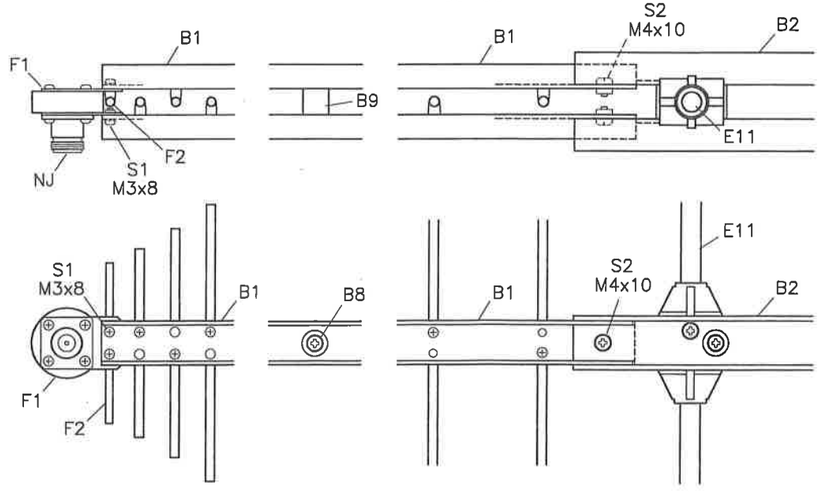


DETAIL–B

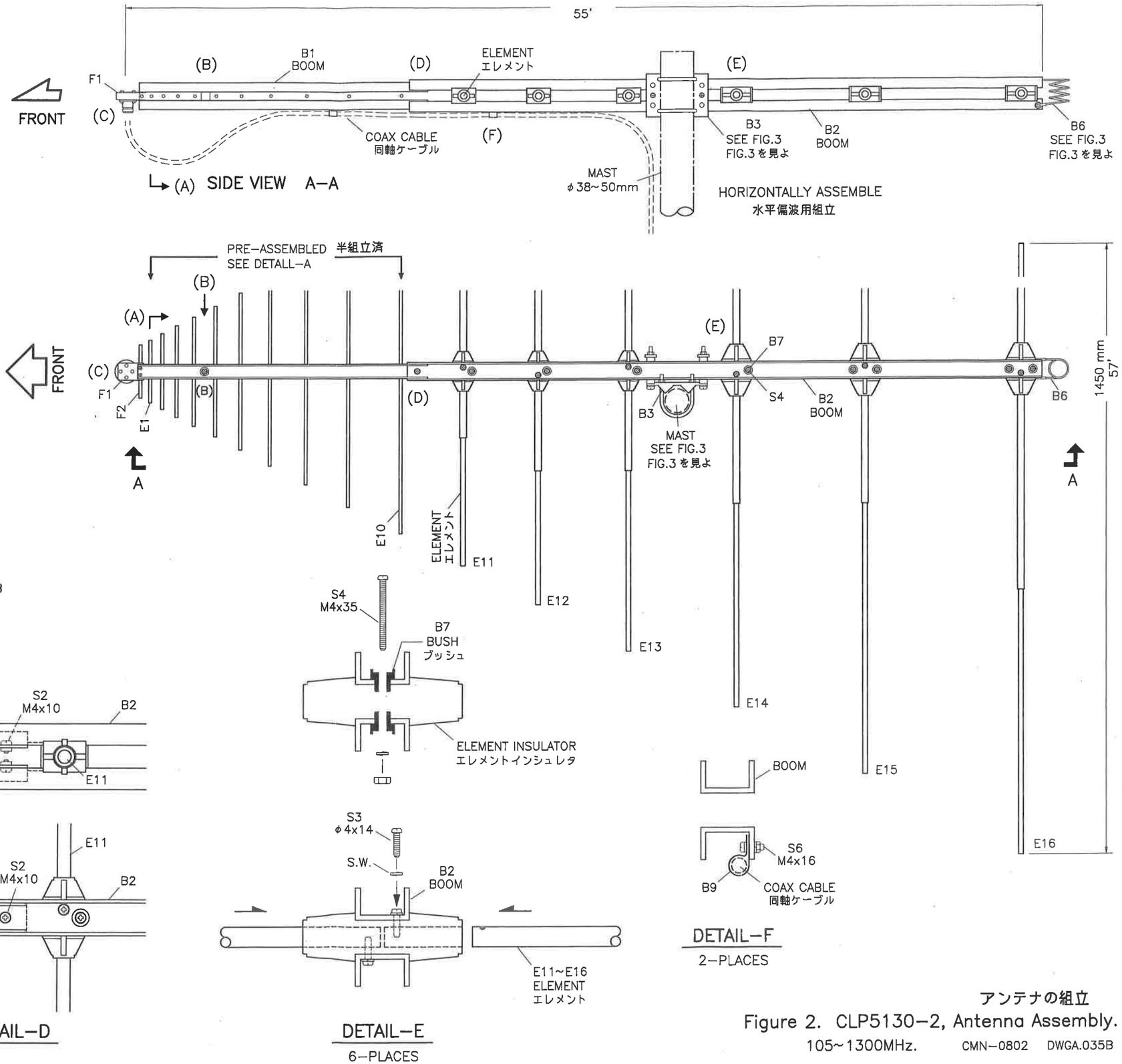


DETAIL–C

FRONT VIEW
前より見る
CC–CC



DETAIL–D



DETAIL–E
6–PLACES

DETAIL–F
2–PLACES

アンテナの組立

Figure 2. CLP5130–2, Antenna Assembly.
105~1300MHz. CMN–0802 DWGA.035B