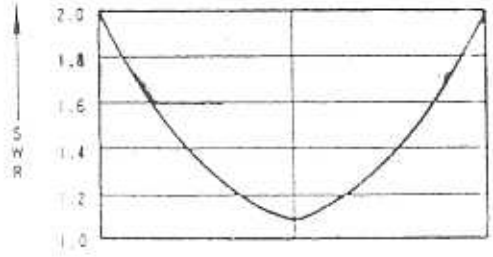
Operation Manual
Model CHA-5
5-Bands Trap Type GP Antenna

** Features :

* Non-magnetic troidal core is used at the power feeding section.
* DC ground system protects your transceiver from lightening.
* Easy frequency adjustment, by each radials indipendently.
* Screws, nuts, washers are all stainless steel for long durability.

** Frequency Characters :



3.5MHz	– 10KHz	to	+ 10KHz
7MHz	– 20KHz	to	+ 20KHz
14MHz	– 100KHz	to	+ 100KHz
21MHz	– 150KHz	to	+ 150KHz
28MHz	– 700KHz	to	+ 700KHz

Specifications :

Frequencies	:	3.5, 7, 14, 21, 28MHz
Impedance	:	50 ohm
V. SWR	:	Less than 1: 1.5
Max Power	:	200W SSB
Connector	:	M-J type.
Wind Velocity	:	30m/sec. (50m w/stay)
Length	:	5.29 m
Radial length	:	1.8m approx.
Weight	:	6.3 kg.

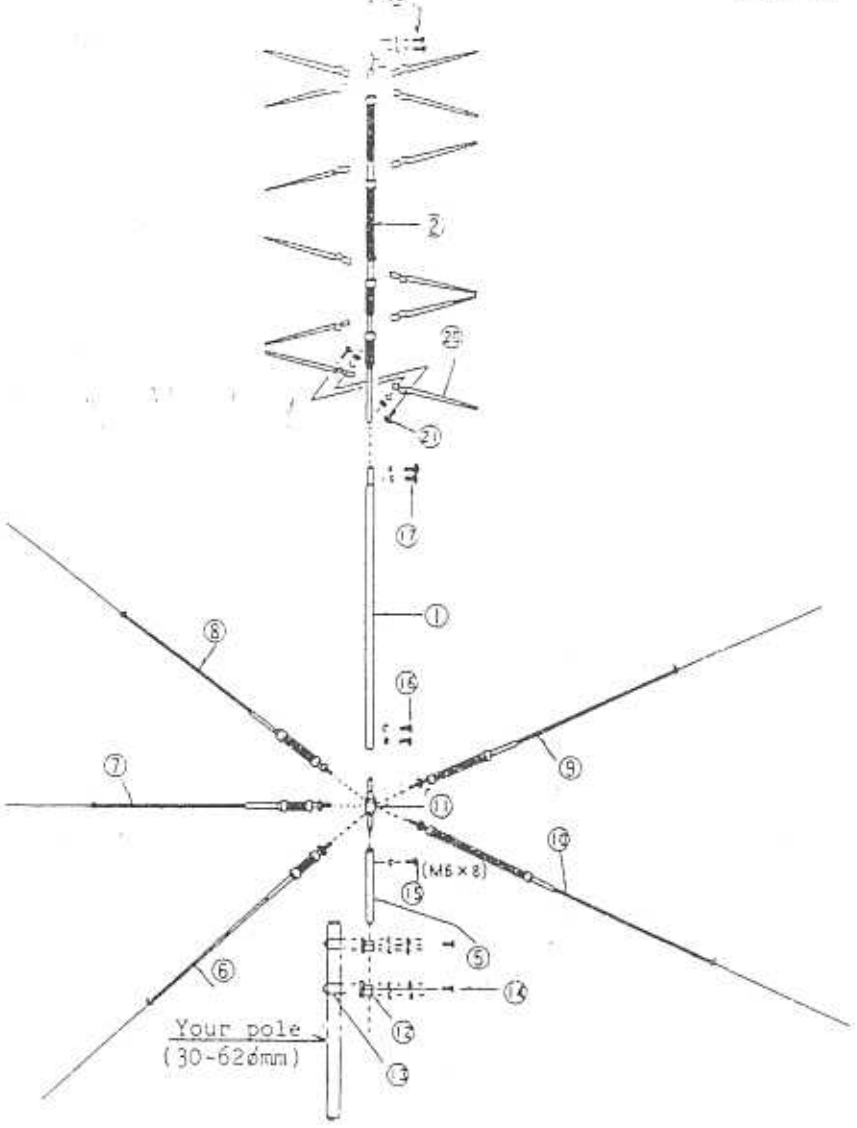
★ Over All Figure

(Fig. 1)

★ Parts List

No.	Parts Name	Qty
1	Element 1 32ø-1300mm	1
2	Trap	1
3	Element 2 10ø-850mm	1
4	Element 3 7ø-1200mm	1
5	Mount Support Pipe	1
6	Radial for 28MHz	1
7	Radial for 21MHz	1
8	Radial for 14MHz	1
9	Radial for 7MHz	1
10	Radial for 3.5MHz	1
11	Power Feeding Section	1
12	Mount Bracket	2
13	U-Bolt(M8) with spring washer, nut	2ea
14	Hex Bolt (M6x8)	2
15	Hex Bolt (M6x8) with spring washer, nut	1ea
16	Hex Bolt (M6x18) with star washer	2ea
17	Tapping Screw (5x12) with star washer	2ea
18	Tapping Screw (4x8) with star washer	2ea
19	Tapping Screw (3x6) with star washer	2ea
20	Top Load Plate	12
21	Bolt (M4x10), with sp.washer(M4), nut(M4)	12ea

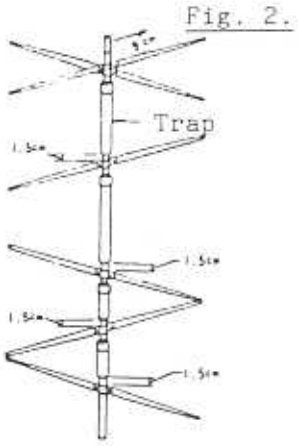
(List 1)



Assembly :

1. As shown on Fig. 3, mount the Support pipe 5 to your pole, using 12 Brackets, 13 U-Bolts, 14 Hex Bolt etc. Top of the Support Pipe should be higher than the pole by 2cm.
2. Pass your coax through the Support pipe and screw onto the connector. Water-proof by self melting tape is recommended.
3. Then, assemble the Power Feeding section to the Support Pipe with Hex Bolt 15.
4. Then, assembly the radials, with below standard length.

Fig. 2.



Please mark the location of each plates. Highest plates should be crossed.

Fig. 3

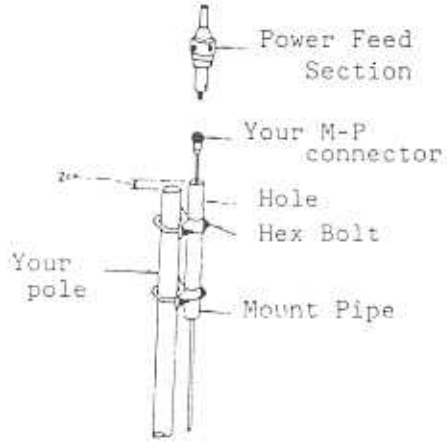
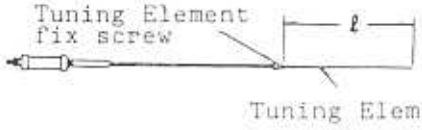


Fig. 4



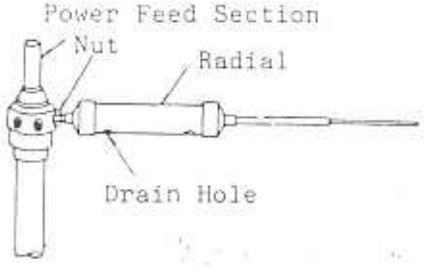
Standard Element Length

List 2

	length (cm)
28MHz	58
21MHz	55
14MHz	56
7MHz	55
3.5MHz	68

5. Complete insertion of each radials to the Power Feed Section. Then, re-adjust their location so that the Drain Holes face downward. Finally, fasten the Hex Nut strongly. Please refer to the Fig. 5.

Fig. 5



6. Assemble 1, 2, 3, 4 elements by 17, 18, 19 screws etc. Then, Mount the Top Load Plates 20, as previously explained at Fig. 2.

7. Finally, joint the full element Assembly onto the Power Feeding Section, using 16 Hex Bolts and star washers.

Adjustment of Center Frequency (Fo)

* Connect SWR Meter between Transceiver & Antenna CHA-5, as shown on Fig. 7.
* Adjust the length of each radials at the best VSWR point, of the desired frequencies, as per the following example.

(Example) 3.5MHz band

If you wish to change from Fo 3.525 to 3.550!

Shift of Frequency is: 3.550 - 3.525
= 0.025MHz = 25KHz
Because List 3 showing Shift of 4.5KHz per 1cm, new Element length should be 5.6cm shorter. (25KHz ÷ 4.5 = 5.6)

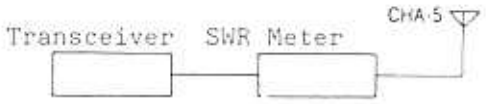


Fig. 7

Remarks :

1) please use high coax. cable of 50 Ohm standard to prevent cable loss.
2) Place of VSWR adjustment, or, location of antenna installation should be away from the buildings or metallic obstacles to prevent any electrical influences from them.
3) Staying by nylon lopes should be 3 or 4 directions at 2 places; upper part of trap-element and top of the lower element 1.

Freq.	Shift of Fo Freq. per each 1 cm
28MHz	42.5KHz
21MHz	8.5KHz
14MHz	11 KHz
7MHz	6 KHz
3.5MHz	4.5KHz

List 3

* Longer Tuning Element gives lower frequency. Shorter the higher.