Operation Manual
Model CHA-6
6-Bands Trap Type GP Antenna

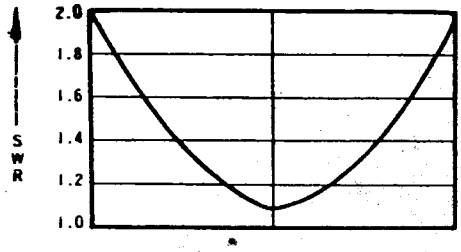
**** Features :**

* Balun is used at the power feeding section, which realized stable electrical conditions, and easier frequency adjustment.
* DC ground system protects your transceiver from lightening.
*Screws, nuts and washers are all stainless steel for long durability.
* Easy frequency adjustment, by shifting each radials independently.

**** Specifications :**

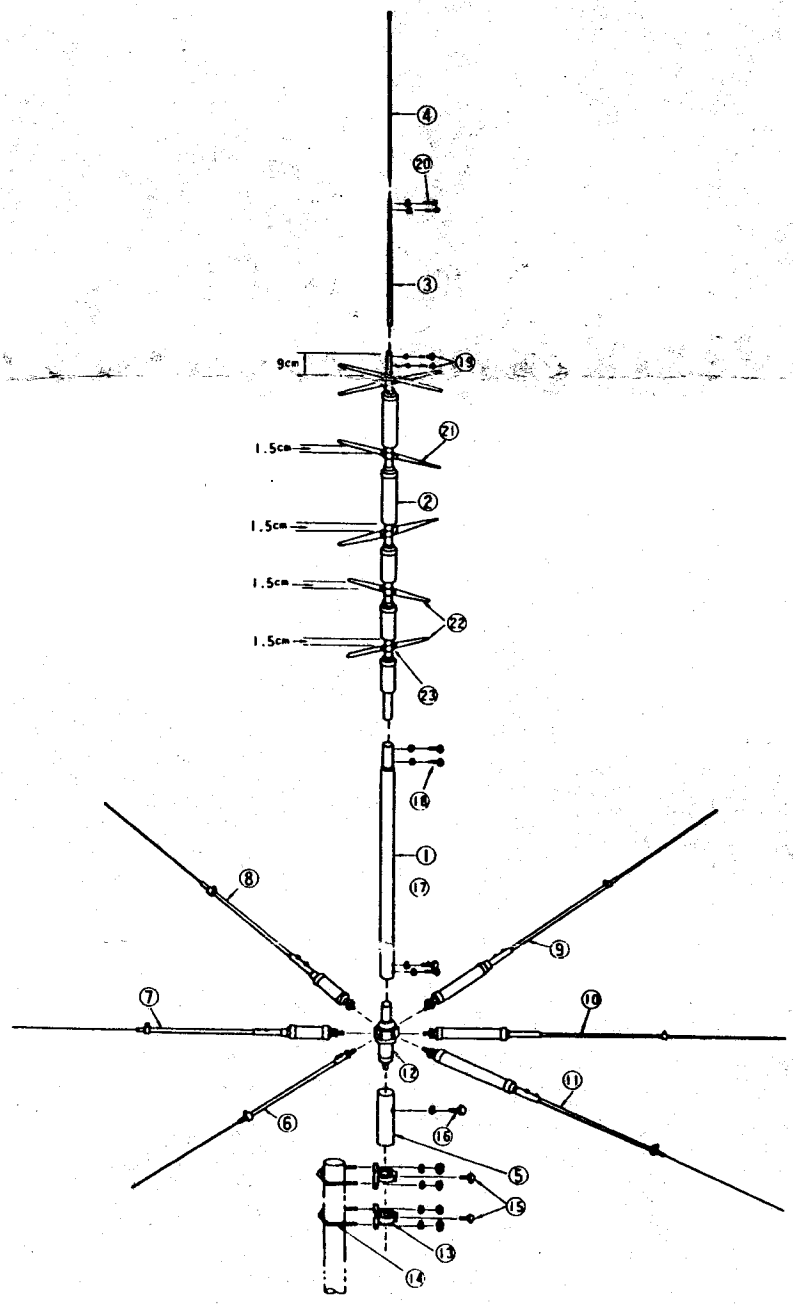
Frequency	: 3.5, 7, 14, 21, 28, 50MHz
Impedance	: 50 ohm
Max Power	: 200W (SSB)
V. SWR	: Less than 1 : 1.5
Wind Velocity	: 30m/sec. (50m w/stay)
Connector	: M (SO239) type
Length	: 5.32 m
Radial length	: 1.8 m approx.
Weight	: 6.5 kg
Available Pole	: 32ø - 62ø mm

**** Frequency Charactors :**



3.5MHz – 10KHz	fo	+ 10KHz
7MHz – 20KHz	fo	+ 20KHz
14MHz – 100KHz	fo	+100KHz
21MHz – 140KHz	fo	+140KHz
28MHz – 600KHz	fo	+600KHz
50MHz – 1.3MHz	fo	+1.3MHz

Over All Figure
(Fig. 1)



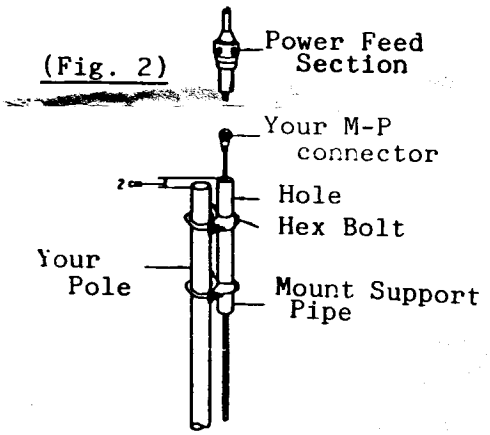
Parts List

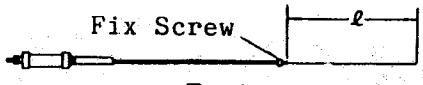
No.	Parts Name	Qty.
1	Element 1, 32-1300	1
2	Trap Element	1
3	Element 2, 10-820	1
4	Element 3, 7-1200	1
5	Mount Support Pipe, 35-330	1
6	Radial for 50MHz	1
7	Radial for 28MHz	1
8	Radial for 21MHz	1
9	Radial for 14MHz	1
10	Radial for 7MHz	1
11	Radial for 3.5MHz	1
12	Power Feeding Section	1
13	Mount Bracket	2
14	U-Bolt w/sp.washer, nut	2
15	Hex Bolt M6x8	2
16	Hex Bolt M6x8, w/sp.washer M6	1
17	Hex Bolt M6x18, w/star washer	2
18	Tapping Screw 5x12, w/star washer M5	2
19	Tapping Screw 4x8, w/star washer M4	2
20	Tapping Screw 3x6, w/star washer M3	2
21	Top Load Plate, 400mm	8
22	Top Load Plate, 370mm	4
23	Bolt M4x10, w/sp.washer M4, Nut M4	12

** Assembling Works:

1. As shown on Fig. 2, mount the Support Pipe 5 to your pole, using 13 Brackets, 14 U-Bolts, 15 Hex bolts. 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 16.
4. Then, assemble the radials, with below standard length.

(Fig. 2)





Tuning Element

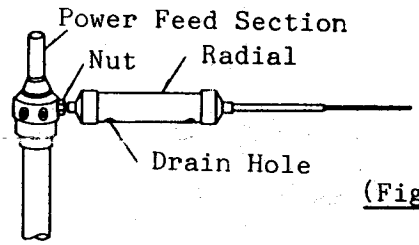
(Fig. 3)

Standard Length of Tuning Elements

(List 2)

	ℓ (cm)
50MHz	62
28MHz	50
21MHz	40
14MHz	54
7MHz	55
3.5MHz	68

5. Complete insertion of each radials to the Power Feeding Section. Then, re-adjust their location so that the Drain Holes face downward. Finally, fasten the Hex Nut strongly. Please refer to Fig. 4.
6. Assemble 1, 2, 3, 4, elements by 18, 19, 20 parts. Then, mount the Top Load Plates 21 & 22 by 23 bolts, washers and nuts.
7. Finally, joint the full element assembly onto the Power Feeding Section using 17 Hex bolts and star washers.

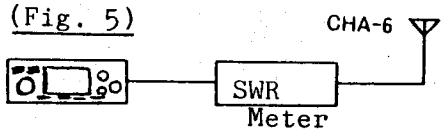


(Fig. 4)

** Adjustment of Center Frequency (Fo)

* Connect SWR Meter between transceiver & antenna CHA-6, as shown on Fig. 5.
* Adjust the length of each radials at the best VSWR point, of the desired frequencies. Please refer to the example.

(Fig. 5)



(Example) 3.5MHz band

If you wish to change from 3.525 - 3.550!

Shift of Frequency is:

3.550 - 3.525 = 0.025MHz = 25KHz

Because the List 3 showing Shift of 4.5KHz per 1cm, new Element length should be 5.6cm shorter. (25KHz ÷ 4.5 = 5.6cm)

** Longer tuning element gives lower frequency. Shorter the higher!

(List 3)

Bands	Shift of fo freq. per each 1 cm
50MHz	120 KHz
28MHz	45 KHz
21MHz	7 KHz
14MHz	11 KHz
7MHz	6 KHz
3.5MHz	4.5KHz

Remarks:

1) To prevent cable loss, please use high quality coaxial cable of 50ohm standard.
2) Place for VSWR adjustment, or final antenna location should be away from the buildings or metallic obstacles to prevent any electrical influences from them.
3) The antenna Tower, if used, is to be grounded.
4) Staying by nylon lopes is to be 3 or 4 directions at 2 places; upper part of trap-element and top of the lower element 1.

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