

# HF WIRE ANTENNA

## EL-40X INSTRUCTIONS

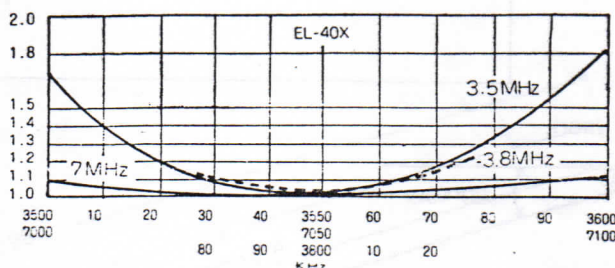
### 3.5(3.8)&7MHz BAND

For a long time this EL-40X has been a highly regarded multi-band wire antenna. This antenna capable of DX communication across a great range. The TVI and BCI are quite small, giving you greater enjoyment in your ham activities. However, unless great care is taken in assembling and adjusting, this antenna won't be able to achieve the high performance the antenna is capable of. So please read through the instructions and have the whole picture, then proceed with the assembly.

### SPECIFICATIONS

Frequency bands: 3.5(3.8)-7MHz  
Input impedance : 50  $\Omega$   
Power capability : 500W.PEP 300W.CW  
V.S.W.R : Less than 1:1.2  
Overall length : 23m

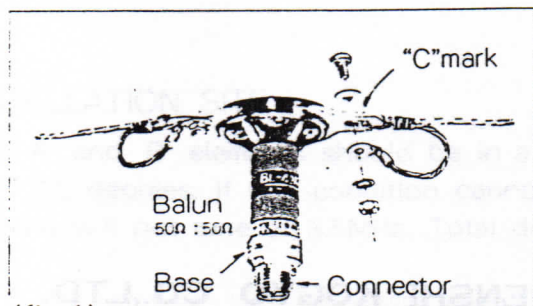
V S W R



### ASSEMBLY PROCEDURES

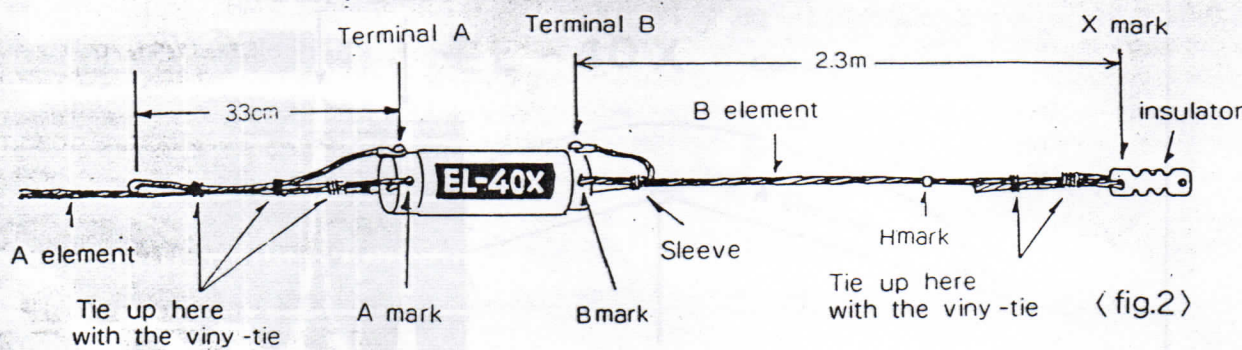
1. The A elements (3.5mm, 7-ply, clear vinyl covered copper wire) is 11.4m overall, 10.6m from the C marks to the A marks. To connect the balun and the A elements. Pass the end of each A element through the hole in one of the terminals on the side of the balun as shown in figure 1.

Bend each element at the point marks C, and firmly bind the protruding section back to the element with a Viny-tie (reinforced vinyl ties). Next, use the washers, nuts, and screws to fasten the lugs on the end of each element to the terminal on the balun, as shown in the figure 1.



(fig.1)

At the end of the A elements. pass the element through the two holes of the coil. Now, match at the point marked A on the first hole, and firmly bind here with the Viny-tie as shown in figure.2. Next, solder the end of the element on the terminal A.

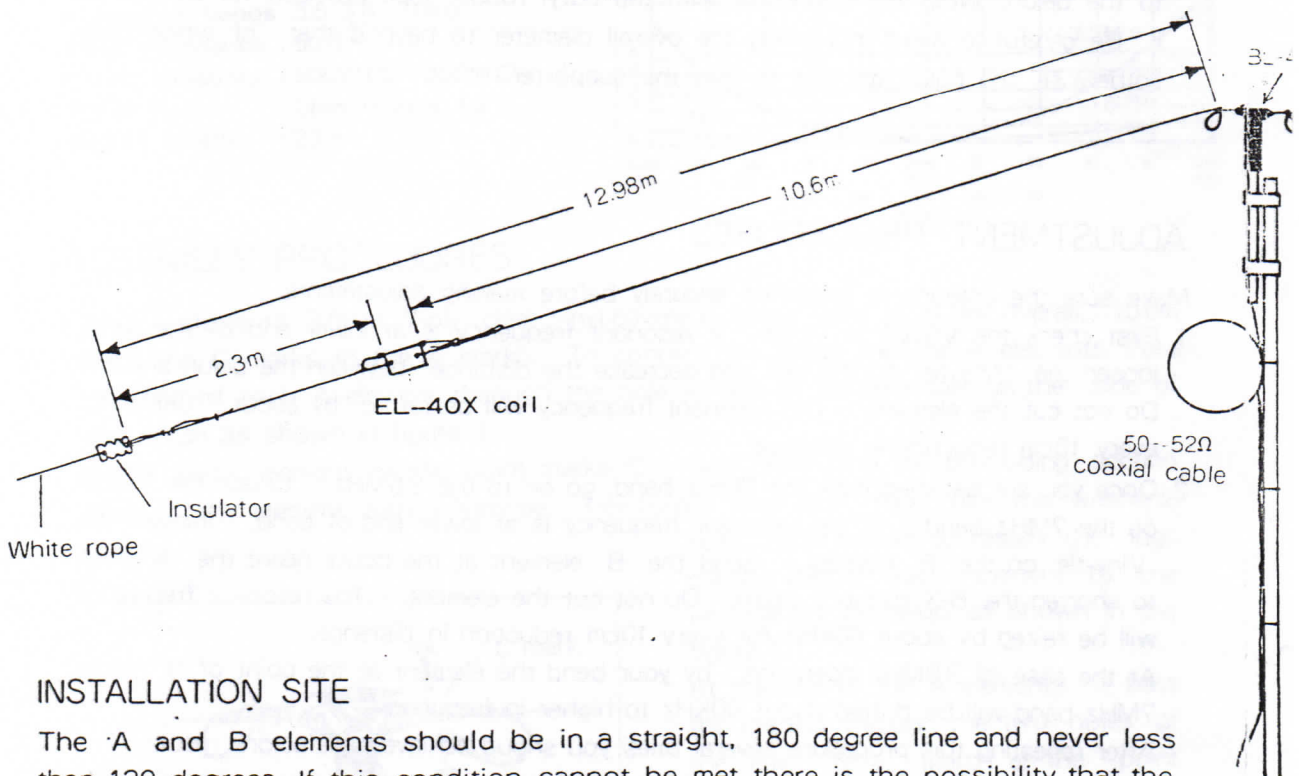
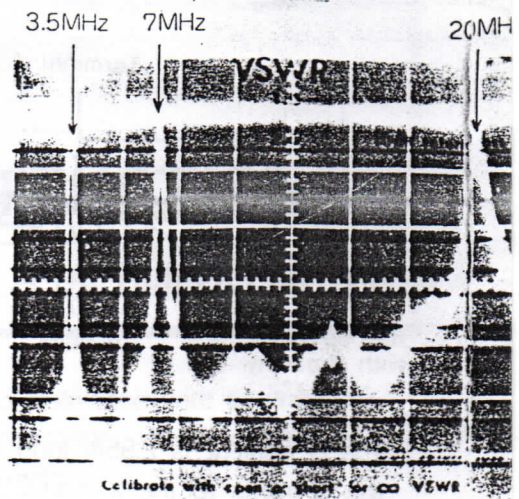


2. The B element is 2.95m long and it is 2.3cm (At the case works for 3.5MHz) from the B marks to the X marks. Pass the element through a metal sleeve and the two holes of the coil as shown in figure 2. Crimp the sleeves and solder the ends of the element on the terminal. At the end of the element, pass the element through the hole of the insulator. Match at the point marked X on the hole and bind the protruding section back to the element with viny-ties. H marks provided for 3.8MHz operations.
3. After connecting the element, pass the coaxial cable into the balun supporter pipe from the bottom, solder the type M connector to the cable and connect the cable to the balun. Wrap the connector with the butyl rubber tape provided for waterproof it. Be careful to avoid increasing the overall diameter to beyond that of white base (otherwise, the balun will not fit into the supporter).

## ADJUSTMENT PROCEDURES

Make sure the antenna is stretched securely before making adjustments.

1. First check the VSWR at 7MHz. If resonant frequency is at lower end of the band, loosen the Viny-tie on the coil and decrease the distance between the balun and coil. Do not cut the element. The resonant frequency will be raised by about 70KHz for every 10cm reduction in distance.
2. Once you are satisfied with the 7MHz band, go on to the 3.5MHz. Check the VSWR on the 7MHz band. If the resonant frequency is at lower end of band, loosen the Viny-tie on the B element, bend the B element at the point near the X mark to shorten the B-X distance again. Do not cut the element. The resonant frequency will be raised by about 60KHz for every 10cm reduction in distance.  
At the case of 3.8MHz operation, by your bend the element at the point of H marks. 7MHz band will be drifted about 40KHz to higher in frequency.  
After repeating this procedure several times you should achieve satisfactory result.
3. Remember, surrounding structures will affect performance; therefore the elements on either side may not be exactly the same length. Again repate the same steps until you achieve satisfactory results.

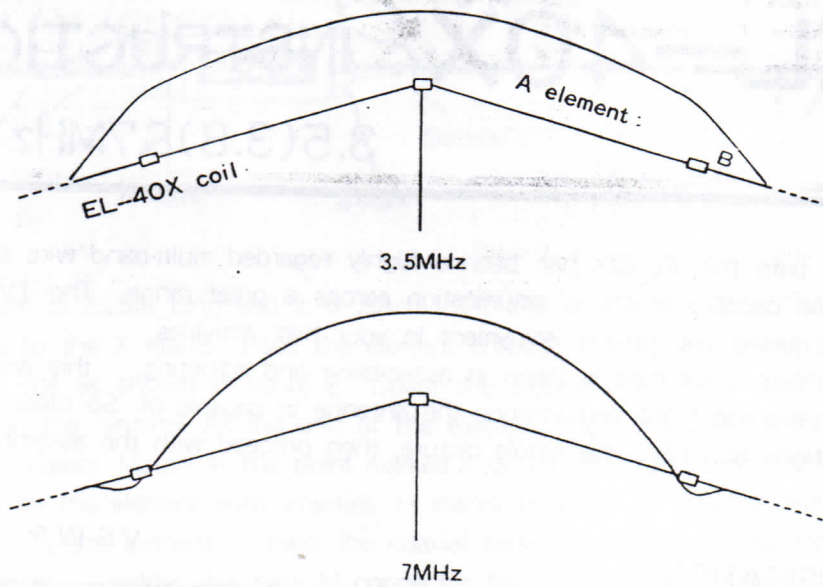


## INSTALLATION SITE

The A and B elements should be in a straight, 180 degree line and never less than 120 degrees. If this condition cannot be met there is the possibility that the antenna will not tune at 3.5MHz. Total diagonal length is 23m.

# EL - 40 X

Current distribution



C mark

30° MAX

A element

B mark

B element

X marks

A mark

A mark 3.8MHz

SAGA DENSHI KOGYO CO.,LTD.