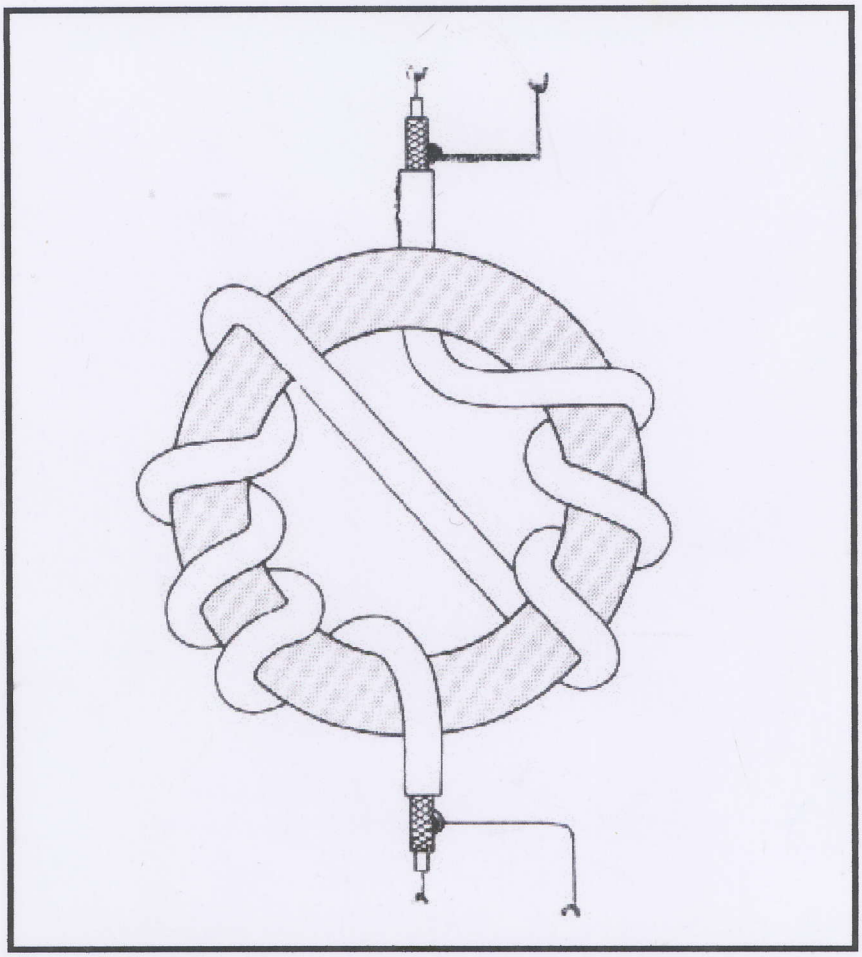
Current Balun / Current Choke / Choke Balun

HB9ABX update 3.Aug.04, 5.4.05, 16.4.05, 18.4.05, 14.6.05, ... **13.04.06**



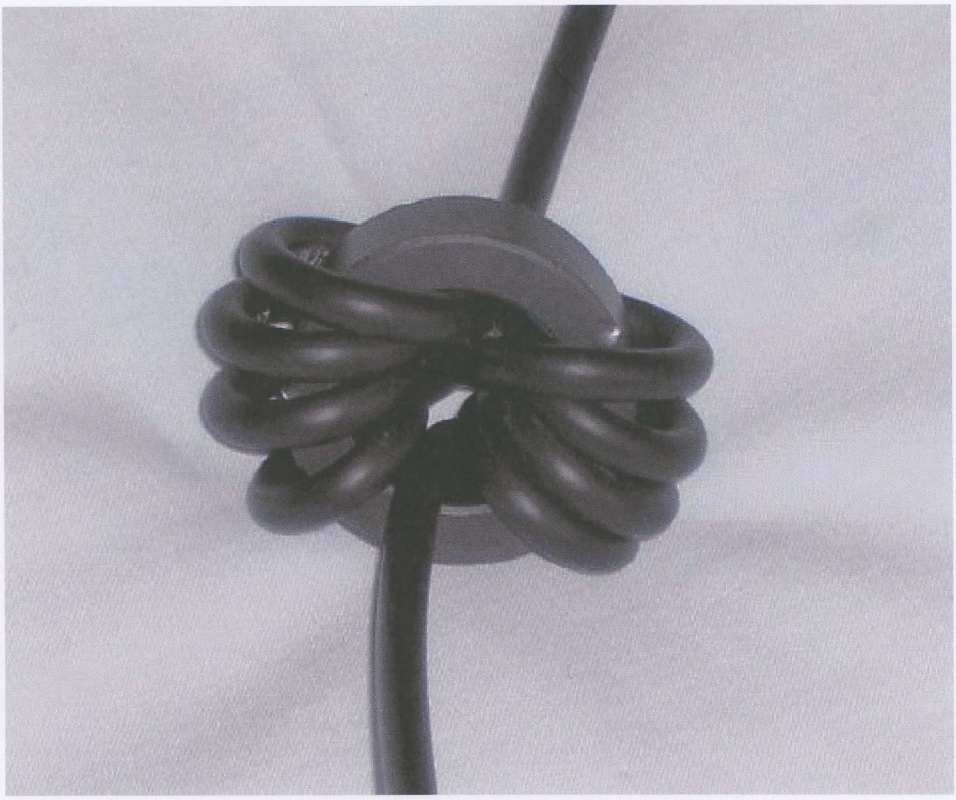
This is a 50 Ohm 1:1 balun and serves perfectly to feed a symmetric antenna with a coax, or to be inserted into a coax to prevent shield current and feedline radiation.
Insertion point is just at the antenna feed point.

Explanation: What is a current balun ?

Measurements of current baluns

Broadband current balun 1,8-30 MHz:

1.Version: for 100 Watt: -
Ferrite ring FT140-43 **with RG58**
(or FT114-43 with coax RG174, ok for 100W)
1 ring is sufficient, by using 2, the efficiency on 1,8 MHz will increase
you will need 2 rings for 200 W and RG 316.
With 2 rings, you place one over the other and make common windings through both.
In contrast to the picture above: **make on the left and on the right side each 4.5 turns!**
(better is teflon coax RG316)



FT140-43 with RG58

2. Version: for 1 Kilowatt: -
Ferrite ring FT240-43 with coax RG58
(better is teflon coax RG142)

Winding technique is important!
With coax from outside to the ferrite ring. Wind 4 1/2 turns on one half of the ring, then through the ring to the other side and wind again 4 1/2 turns.
The end of the winding should then be on the opposite position of the beginning of the winding. (See picture).
Then, fix the winding with PVC tape.

Static discharge

If the antenna has no connection to ground,
add a small 10 K resistor between center conductor
and braid of the coax to discharge static electricity.
This prevents "tac-tac" from statics.

Finally, place the balun into a weatherproof housing.
If the enclosure is metallic, make sure that the input ground connection is not shorted to the output ground connection by using isolated connectors.

This type of balun is more efficient than the W2DU design,
where a number of ferrite rings is pushed over the coax cable.
It is also the better choice than winding the coax cable in a loop of several turns.