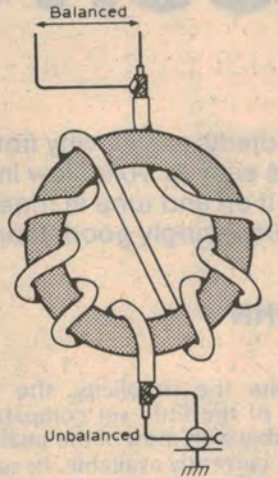
W1JR HF broadband balun

There is a demand for baluns at the transmitter end of the aerial feeder, in order to facilitate the use of a balanced line with transmitters having unbalanced output. A recent design for a simple and efficient HF broadband balun by Joe Reisert, W1JR uses an improved highpermeability ferrite toroid core on which is wound a short length (12 turns, 36-40in of cable) of thin coaxial cable of the required impedance. The W1JR unit uses the Indiana General F568-1 Q1 core with RG-141/U cable; it covers 3.5 to 30MHz (with reduced efficiency on 1.8MHz).

For use over 7-30MHz, 10 turns of cable should prove sufficient, and TC9 core material might prove more suitable for lower frequencies. With RG-141/U cable the unit is designed for 50 ohms impedance, but other impedances may be selected provided the turns impedance on the lowest frequency band is at least ten times the cable impedance. The design can be used at VHF if attention is paid to layout and lead lengths. W1JR states: "The beauty of this type of balun is that it does not introduce any additional reactive components to the feedline".



The balun as described is intended primarily for use directly at the dipole element but there seems to be no reason why this approach should not be adopted instead to power a balanced transmission line from the unbalanced output of a typical modern transmitter. Such short lengths of cable however, do require the use of a high permeability core material.

(From "Radio Communication".)