

## Using RG58 coaxial crimp connectors with RG6 cable

Garth Jenkinson VK3BBK

*Reprinted with permission from Amateur Radio Magazine, published by the Wireless Institute of Australia (WIA).*

RG6 (75  $\Omega$ ) coaxial cable is readily and cheaply available as it is commonly used for domestic cable and satellite TV. RG6 typically has 12 to 15 db per 30 metres less loss than RG58A or RG58C (50  $\Omega$ ) cable. For some applications using RG6 in place of RG58 can provide great benefit. Consequential 50  $\Omega$ -75  $\Omega$  mismatch and SWR degradation may be far less important than the greatly reduced cable loss.

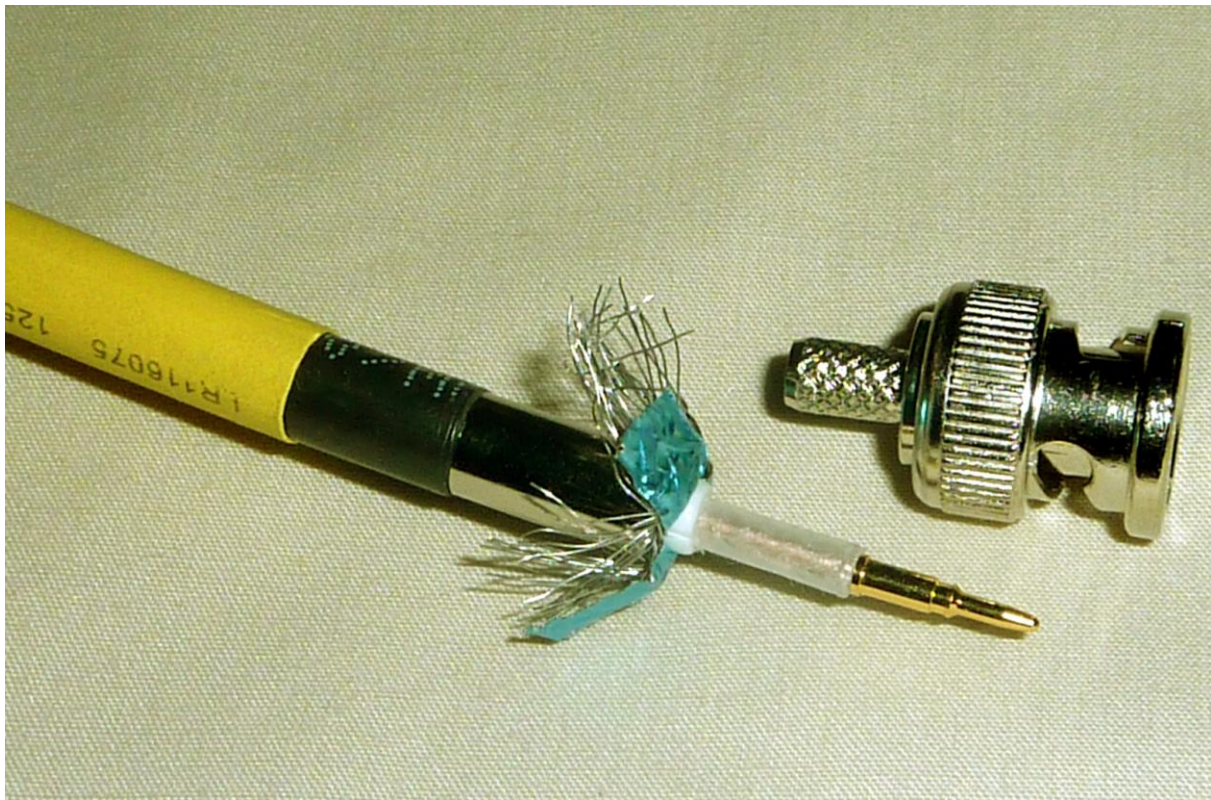


*RG6 cable has insulation on the inner surface of the foil, with the foil twisted to ensure electrical connection.*

Crimp-type coaxial connectors for RG58 cables are readily obtainable for BNC, N, PL259, TNC and others. Unfortunately for larger cable sizes such as RG6 it is becoming difficult to find crimp connectors as they are no longer being stocked by popular parts suppliers. However RG58 crimp connectors can be satisfactorily used on RG6 and some other cables using the following procedure.

1. Remove the outer sheath of the RG6 cable for a total length equal to that required by the connector *plus the length of the metal crimping sleeve*.
2. Remove any burrs from the crimping sleeve and slide it onto the RG6 cable over all its braid and aluminium foil until the sleeve touches the remaining outer sheath.
3. Slide a length of heat-shrink tubing over and beyond the crimping sleeve. It must be large enough to slide back over the sleeve once crimped, and long enough to cover the finally-re-exposed screen and sleeve.

4. Unplait the screening wires and fold them closely over the crimping sleeve.
5. Cut the aluminium screening foil down to the crimping sleeve with fine scissors (sharp knives tend to tear the foil) to form three or four lengthwise strips. Fold these strips over the braid and sleeve. Note that some RG6 cables have an insulating layer on the inside of the foil. If yours has, you must fold the foil lengthwise such that the insulating layer is on the inside. The metallic side must contact both the plug body and sleeve before crimping (See Photo 1).
6. Remove the inner conductor insulation down to within about 1 mm from the crimping sleeve.
7. Recover a piece of inner conductor insulation from an RG58 offcut and trim it to the same length as would be required if assembling the connector onto RG58 cable. Gently twist it onto the RG6 solid inner conductor until it meets the remaining RG6 insulation.
8. Remove any burr from the body of the connector.
9. After soldering the centre pin onto the RG6 centre conductor, use fine sidecutters to very carefully remove melted oversize edges of the inner insulation so that the pin and insulation will slide smoothly into the connector. Then complete the connector assembly exactly as for RG58. See Photo 2 for a view of the cable and a BNC connector ready for final assembly and crimping.
10. After crimping the sleeve onto the connector, use a section of the removed RG6 outer jacket to re-cover the exposed screen, then slide the heatshrink tubing over it and the crimped sleeve, and shrink it.



*A view of a BNC for RG58 and RG6 cable, shortly prior to final assembly and crimping.*