

Anatomy of a Coaxial Connector

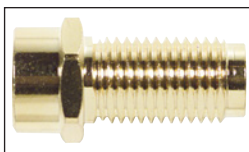
There are a wide variety of coaxial connectors available today. These connectors are offered in numerous interface types and attachment methods. Illustrated below are some common elements and functions shared by most of these coaxial connectors.

Crimp Ring



Attachment sleeve to cable outer conductor.

Coupling Body



Attachment mechanism to mating connector.

Outer Conductor



Outer conducting element for signal transmission.

Dielectric Support



Non-conductive spacer between center and outer conductor.

Center Conductor



Center conducting element for signal transmission.

Building Your Own Coaxial Cable Assembly

In order to successfully build your own coaxial cable assembly, you must make the following decisions:

1. Select a cable type

Many parameters come into play in making this decision from electrical performance properties such as impedance, shielding and attenuation to mechanical properties such as diameter, center conductor construction (solid vs stranded) and jacket material. A selection of the most commonly used cable is listed on [page 147](#).

2. Select a connector type

Numerous connector interfaces exist such as BNC, TNC, SMA, F or RCA

to name just a few. Each has a different application and come in both male and female versions. A selection of the most popular types is listed on [pages 148-150](#) and [158-159](#).

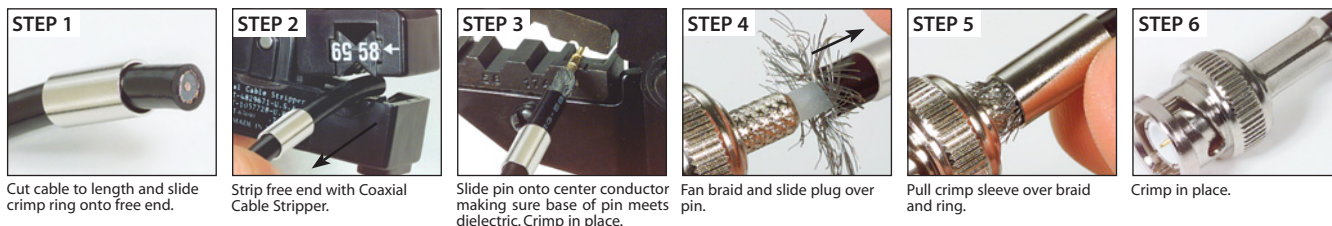
3. Select an attachment method

In general, there are three basic methods to attach a coaxial connector to a coaxial cable. They are crimp, clamp and twist-on. Each of these methods is illustrated below.

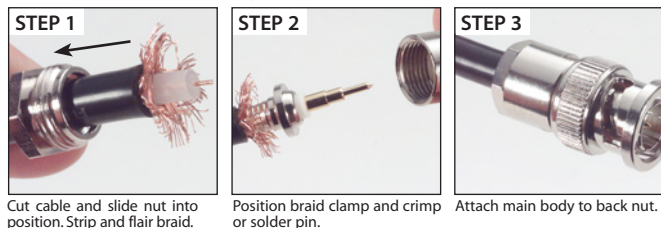
4. Select a tool

If a crimp attachment method was selected then a crimp tool will be needed. The crimp cross reference chart on [page 151](#) will assist you in selecting the correct tool.

Crimp Method: This is the most common connector attachment method. In this case the cable shield is crimped to the connector using the crimp ring. The connector center conductor is attached to the cable center conductor by crimp or solder.



Clamp Method: The clamp method is often used for weather exposure applications or when crimp tools are not available. In this case the cable shield is clamped between the connector body and back nut. The connector center conductor is usually soldered to the cable center conductor.



Twist-On Method: This method is most often used in field applications because of its simplicity and the need for no special tools.



Crimp Tool:

When using a crimp connector, the HT330K tool kit can be a valuable item ([page 151](#)). This kit contains dies for all the commonly used crimp sizes. In addition, this kit comes complete with a cable cutter and a rotary cable stripper - helpful tools for building a cable assembly.



Plug or Jack:



A PLUG utilizes a center pin = MALE GENDER



A JACK utilizes a center socket = FEMALE GENDER



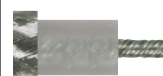
See The Video

www.l-com.com/Videos/A19

Solid or Stranded:



SOLID center conductor: best attenuation but somewhat stiff.



STRANDED center conductor: more flexible but slightly higher attenuation.