

Selection Criteria for IDCs

Selection decisions on Insulation Displacement Connectors (IDCs) present opportunities for significant improvements in quality, interchangeability, and cost-effective handling and assembly. The connectors selected will impact significantly on the overall reliability and usefulness of the final system. Here are the important considerations in the selection of IDC components:

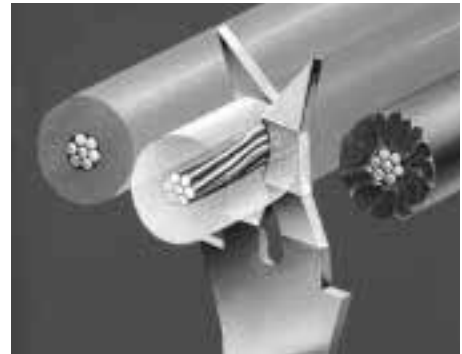
The Electrical Contacts

Contact integrity must be maintained in two places—between the contact and the cable conductor and between the contact and its mate...whether it be a PC board, a pin or a socket. There can be no compromise on either end.

A properly designed contact will completely displace the insulation, and provide clean metal-to-metal contact with the conductor, insuring a long-term, gas-tight connection.

One end of our patented IDC contact consists of a pair of offset tines. When forced through the

insulation, they slide along the conductor, compressing it and gripping it to form a gas-tight connection. The conductor is compressed by dual force. As the cable conductor is wedged into the contact's insulation displacement slot, the wiping action of the tines cleans the conductor surface and the conductor is compressed. In addition to the compression force, a second force is created by the offset tines. The resultant torque produces a long-term, Torq-Tite™ connection, impervious to



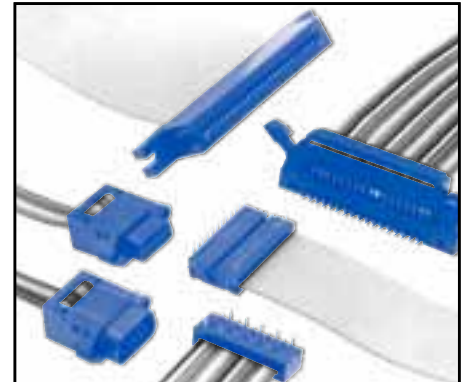
environmental contaminants.

The electrical connection on the other end—between the contact and its mate—whether it be a PC board, a pin or a socket, is of equal importance. Here structural design, materials, area of contact, surface finish, contact redundancy, and mechanical means of seating the contact in the insulator can be critical. Every CW contact has been designed with full consideration of each of these factors.

The Insulator

The excellent electrical insulating characteristics of IDCs, their physical ruggedness, ability to withstand extremes of environmental conditions, and ease of assembly are the result of careful and detailed material testing and selection as well as insulator design. Where the connector is exposed to soldering, the insulator must be resistant to dissolution by solder, fluxes and PC

board washes. The material should be rugged enough to be handled without breaking or chipping and strong enough to hold the contacts firmly in place. It should be chemically-inert and have dielectric properties consistent with the application requirements. These are the criteria considered in selecting materials for all CW insulators.

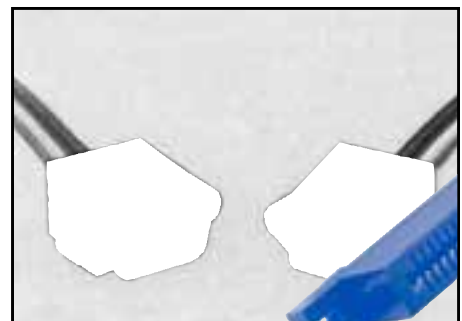


Mating and Interchangeability

An important consideration in the design and development of every CW connector is compatibility and mateability with connectors of other manufacturers.

The problem of connecting a PCB, DIP or Card Edge connector to a printed circuit board are not as serious as mating a "socket" to a "header" or a "socket" D-Subminiature to a "pin" D-Subminiature, when connectors from different manufacturers are used. CW connector designs, in almost every instance, minimize electrical or

mechanical mismatches resulting from mating connectors of various manufacturers. Our designs permit dual sourcing of almost all elements. To this end, CW has worked closely with the US Defense Electronic Supply Center in the development of industry standards and specifications as defined in Mil-DTL-83503. CW IDC connector products are qualified to applicable Mil-DTL-83503 standards and are interchangeable and mateable with other connectors so qualified.



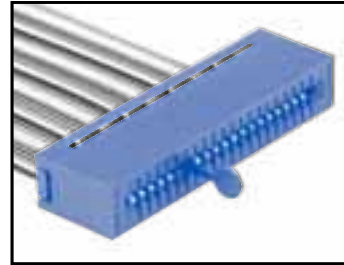
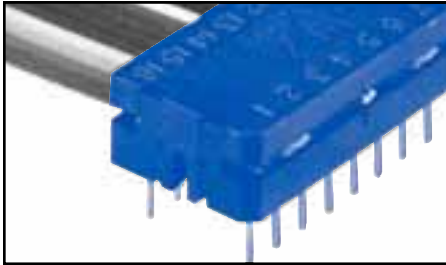
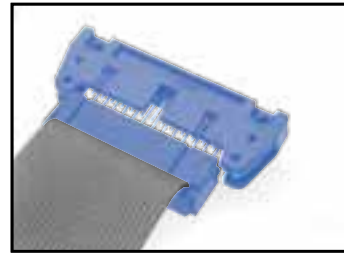
Polarization and Contact Identification

Where there are so many electrical circuit connection possibilities, contact identification is desirable. CW includes numbered contacts on most connectors.

An inherent part of the CW system is a positive means of polarizing mating pairs of IDCs, or positively

orienting the connector to the PC board, thereby preventing cross wiring and possible equipment damage.

Standardization is attained by using polarization and identification methods consistent with Mil-DTL-83503 specifications.



Strain Relief

Test the strength of your cable and connector by pull a test. In Torq-Tite™ D-Subminiature and Card Edge Connectors, strain reliefs are “built-in.” In DIPs, PCBs and Sockets, you may require an optional strain relief for additional protection. CW’s strain relief designs effectively isolate the connection of cable-to-contact from mechanical strain even if the cable is pulled or yanked. CW strain reliefs require limited space, are easy to apply, are available in several options for alternate cable orientation, and are

capable of withstanding a minimum pull-off force of 8 ounces per contact, consistent with Mil-DTL-83503 standards.



Reusable Cover

The ability to remove the connector cover without breakage is often desirable. Most CW designs make it possible to easily, safely and non-destructively remove the cover that protects the connection. The connector, and often the cover itself, are *reusable*.

Ease of Assembly

Assembly is often performed by unskilled personnel seeking to achieve more speed than precision. Therefore, the key element of cable alignment should not depend on a high degree of operator skill. CW’s simple assembly method reduces time and cost, and produces reliable connectors with contacts firmly and precisely seated in the connector bases. Factory preassembled covers and built-in cable guides are featured on most connectors. Complex assembly tools are not

required. With CW’s assembly press, a simple lower die holds the connector in place while a parallel force applied to the cover terminates

each IDC contact to the corresponding conductor in the flat cable and locks the cover in place.

