Copper-Clad Steel (CCS) Conductors

Copper-Clad Steel (CCS) conductors are composed of a steel core with a continuous and constant copper cladding that is thoroughly bonded throughout. CCS conductors combine the strength of steel with the high conductivity and corrosion resistance of copper.

nVent ERICO Cadweld welded electrical connections have been used to join CCS conductors for over 40 years. The Cadweld exothermic process fuses the CCS conductors together to form a connection that will not corrode, loosen, or increase in resistance for the intended service life of the installation. CCS conductors may also be welded to copper conductors, rebar or any other horizontal or vertical steel surface or structure for electrical grounding.

Cadweld welded electrical connections are preferable to mechanical connections for CCS conductors. Mechanical connections rely on the deformation of the conductors and the pressure exerted by the connector on the conductor to reduce the contact resistance. Since the core of CCS conductors is steel, a CCS conductor will not deform as much as a pure copper conductor and therefore an exothermically welded connection is better suited for this application.

How to Order Cadweld Products

This catalog lists the most popular Cadweld connections for CCS construction. Look in the index for the connection you need. If you cannot find the connection you need, contact nVent or your local distributor or agent.

1. What connection do you require?

Available connections are listed in the pictorial index, which also shows the degree of difficulty in making the connection, and ease of mold cleaning. We strongly recommend that wherever possible you use molds listed in this catalog. After selecting the connection, turn to the appropriate page and select the mold, welding material and tools you need.

2. What are the conductor sizes?

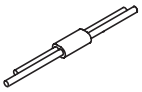
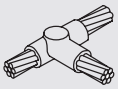
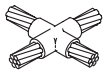
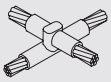
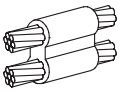
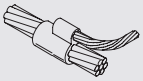
This catalog covers connections between CCS conductors to each other, to concentric stranded copper cable, to lugs, to ground rods, to rebar, and to rail. For sizes not listed, contact nVent or your local distributor or agent.

Note: Other nVent catalogs describe connections to conductors for solid or concentric stranded copper conductors, busbar, lightning protection cable, steel cable, etc.

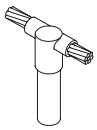
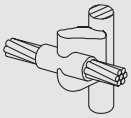
3. You must have the following to make a weld:

1. Cadweld engineered mold.
2. Welding material required by your mold.
3. Handle clamps and or frame.
4. Cadweld Plus control unit or flint ignitor.
5. Lugs, sleeves, packing material listed on the page with the mold as required.

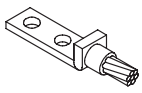
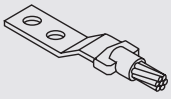
CABLE TO CABLE

Name	Page	Type		Ease	Split
Horizontal Splice	5	SS		1	Vertical
Horizontal Tee	6	TA		1	Horizontal
Horizontal X, Same Plane	9	XA		1	Horizontal
Horizontal X	9	XB		1	Horizontal
Parallel Tap	10	PT		1	Vertical
Horizontal Parallel	11	PC		1	Vertical

CABLE TO GROUND ROD

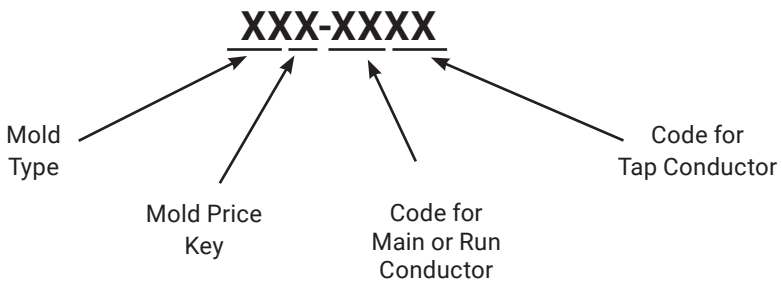
Name	Page	Type		Ease	Split
Ground Rod Splice	12	GB		1	Vertical
Cable to Ground Rod - Tap	13	GR		1	Vertical
Cable to Ground Rod - Through	15	GT		1	Vertical
Cable to Ground Rod - Through / Side	17	GY		1	Vertical

CABLE TO LUG

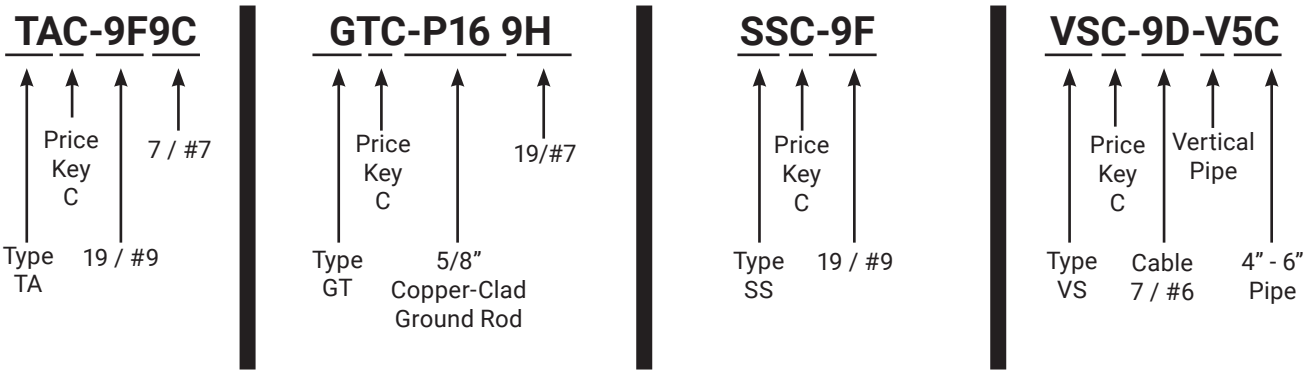
Name	Page	Type		Ease	Split
Cable to Lug	28	GL		1	Vertical
Cable to Lug	29	LA		1	Horizontal

The Cadweld Mold Numbering System

The Cadweld mold part number gives, in code, the complete information of the mold – type of connection, mold price key, and conductor size(s).



EXAMPLES



Certain tools may be <u>required</u> for various connections.

If required, these tools are listed on the same page as the connection and in Section A.

- Some tools listed in Section A can save you a lot of time.
- Also refer to A9E, Contractor Tips, to make your job easier, and learn about labor saving ideas.

REQUIRED TOOLS SUMMARY

Required tools are listed with each mold. For your reference, handle clamps and/or frame are summarized below.

MOLD	REQUIRED
A*	Includes frame with handle
C, Q & R	Requires L160
D, F & Z	Requires L159
E*	Includes frame but also requires L160
J*	Includes frame but also requires L159
K*, M* & V*	Includes frame with handles

* To order mold only - without handles or frame - add suffix "M" to mold part number.