



**CONNECT AND PROTECT**

# nVent ERICO Cadweld Plus for Rail

The Reliable Connection that is Safe, Fast and Easy,  
from the Worldwide Leader in Exothermic Connection Technology

  
nvent

**ERICO**

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# nVent ERICO Cadweld Plus for Rail



Since 1939, nVent ERICO Cadweld has been the rail industry standard for making critical exothermic cable-to-rail welded bonds for signal, power and grounding applications. With the launch of Cadweld Plus for Rail, nVent ERICO has upgraded the weld material and ignition system components, making the system **SAFER, EASIER** and **MORE CONVENIENT** to use. Upgrading to Cadweld Plus is easy; the enhancements contained in Cadweld Plus are compatible with the unchanged core elements of the Cadweld kit, including the molds, welder frame, hardware and Bondstrand.

**Cadweld Plus contains the same core components as Cadweld Traditional, including:**



Complete Welder Assembly



Bonds and Connectors

## CADWELD PLUS ENHANCEMENTS

Enhanced Features	Benefits
<p><b>Integrated, Self-contained Weld Material Package</b></p>  <p>Upgrade over Traditional Blue Tube</p>	<p>Plus cups make the Cadweld system <b>EASIER AND MORE CONVENIENT TO USE</b>. By virtually eliminating the risk of weld powder contamination through the use of an innovative self-contained weld pack, it is much easier to make the proper weld the first time. This makes training personnel on Cadweld plus easier as well.</p> <ul style="list-style-type: none"> <li>• Weld package (cup) is waterproof and tamper-proof with a longer shelf-life</li> <li>• No loose powder, means no spilling in the field which ensures that every weld contains the right amount of ignition power to weld material. Cadweld is an engineered solution, and this formulated ratio is key to achieving the highest quality weld each, and every time.</li> </ul>
<p><b>Electronic Ignition System</b></p>  <p>The control unit - upgrade over Traditional Flint Ignitor</p>	<p>nVent ERICO Cadweld Plus Impulse Exothermic Welding Ignition System <b>INCREASES SAFETY</b> for the user and nearby personnel.</p> <ul style="list-style-type: none"> <li>• With the ignition system, the user performs the weld standing back at a distance of either 6' or 15' - both cable lead sizes are available. This is a significant safety advantage over a flint gun, which requires the user to be in close proximity to ignite the weld.</li> <li>• The control unit features an ergonomic grip with built-in trigger guard to prevent an accidental discharge.</li> <li>• The ignition timing LED Count Up Display to provide positive feedback on the status of the ignition sequence, and features a visual battery life indicator.</li> <li>• Ignition system offers battery unit flexibility with included AA Batteries (Lithium) and optional tool battery adapters for Milwaukee® 18 V and DEWALT® 20 V batteries.</li> <li>• The control unit meets the recommendations of AREMA® (the American Railway Engineering and Maintenance-of-Way Association) C&amp;S Manual Recommendations; Part 8.1.34, 2013.</li> </ul>

# Why Exothermics



- Establishes a permanent molecular bond that will not loosen or corrode, perfectly suited to perform in the harshest rail conditions
- Has a current carrying capacity equal to or greater than that of the conductor
- Can withstand repeated fault currents without failing
- Over-time will maintain a lower resistance compared to a mechanical connections.

## Overview of nVent ERICO Cadweld Plus Rail Applications EXOTHERMIC WELD KITS FOR SIGNAL & POWER CONNECTIONS, GROUNDING

Applications	Connection Type	Termination Styles	Conductors Sizes	Rail Sections
<b>Signal and Power Connections</b>	<ul style="list-style-type: none"> <li>• Joint Head Bond Welder styles for bonding inside or outside joint bar</li> <li>• Cable-to web-of-rail</li> <li>• Special Trackwork</li> <li>• Third Rail</li> <li>• Stud to Rail</li> </ul>	<ul style="list-style-type: none"> <li>• 3/4" Tab</li> <li>• 1" Tab</li> <li>• 3/4" XS</li> <li>• Head Free</li> </ul>	<ul style="list-style-type: none"> <li>• <b>BONSTRAND</b> 3/16" , 5/16"</li> <li>• <b>CONCENTRIC</b> 1/0, 2/ 0, 4/0</li> <li>• <b>ROPELAY</b> 1/0, 2/ 0, 4/035 mm<sup>2</sup> 50 mm<sup>2</sup> 95 mm<sup>2</sup> 120 mm<sup>2</sup></li> <li>• <b>KCMIL</b> 250, 300, 350, 500</li> </ul>	<ul style="list-style-type: none"> <li>• 85 lb to 141 lb (AREMA) T-Rail</li> <li>• UIC</li> <li>• R160</li> <li>• Girder Rail</li> </ul>
<b>Grounding Applications for Rail Properties</b>	<ul style="list-style-type: none"> <li>• Cable to Cable, Rail</li> <li>• Cable to Rail</li> <li>• Cable to Ground Rod or Other Rounds, Rail</li> <li>• Cable to Lug or Busbar, Rail</li> <li>• Cable to Rebar, Rail</li> <li>• Cable to Steel, Rail</li> <li>• Cable to Cable to Cable, Rail</li> <li>• Busbar to Busbar, Rail</li> <li>• Lug or Busbar to Steel, Rail</li> <li>• Lug to Rail</li> <li>• Copper or Steel Stud to Rail</li> <li>• Cable to Cable to Ground Rod or Other Rounds, Rail</li> </ul>	<ul style="list-style-type: none"> <li>• 3/4" Tab</li> <li>• 1" Tab</li> <li>• 3/4" XS</li> <li>• Head Free</li> </ul>	<ul style="list-style-type: none"> <li>• <b>BONSTRAND</b> 3/16" , 5/16"</li> <li>• <b>CONCENTRIC</b> 1/0, 2/ 0, 4/0</li> <li>• <b>ROPELAY</b> 1/0, 2/ 0, 4/035 mm<sup>2</sup> 50 mm<sup>2</sup> 95 mm<sup>2</sup> 120 mm<sup>2</sup></li> <li>• <b>KCMIL</b> 250, 300, 350, 500</li> </ul>	<ul style="list-style-type: none"> <li>• 84 lb Composite</li> <li>• 85 lb Composite</li> <li>• 150 lb Bethlehem</li> <li>• 150 lb Bethlehem (Inverted)</li> <li>• 85 lb to 150 lb T-Rail Sections</li> <li>• RI52</li> <li>• RI59 Girder Rail</li> <li>• 30 lb ASCE</li> <li>• 40 lb ASCE</li> <li>• 60 lb ASCE</li> <li>• 171 lb Crane Rail</li> </ul>

# Overview of the nVent ERICO Cadweld Plus System

The Cadweld system comes in a kit that is portable and easy to use in the field. It is centered around a graphite mold containing a weld cavity where a cable is inserted to connect to rail, or to other cables. Above the cavity is a crucible containing a pack of weld material that, once ignited, liquefies causing molten weld metal to flow into the weld cavity. In a matter of seconds a permanent molecular bond is formed. nVent ERICO Cadweld Plus for Rail meets the recommendations of AREMA® and Institute of Electrical and Electronics Engineers (IEEE) standards.

nVent ERICO provides comprehensive training and ongoing support for Cadweld rail customers.

## nVent ERICO Cadweld Plus Impulse Exothermic Welding Ignition System

Ignition count up LED timer

Control unit

## nVent ERICO Cadweld Plus for Rail Components

Welder frame

Cable lead

Ignitor strip

Color coded cover

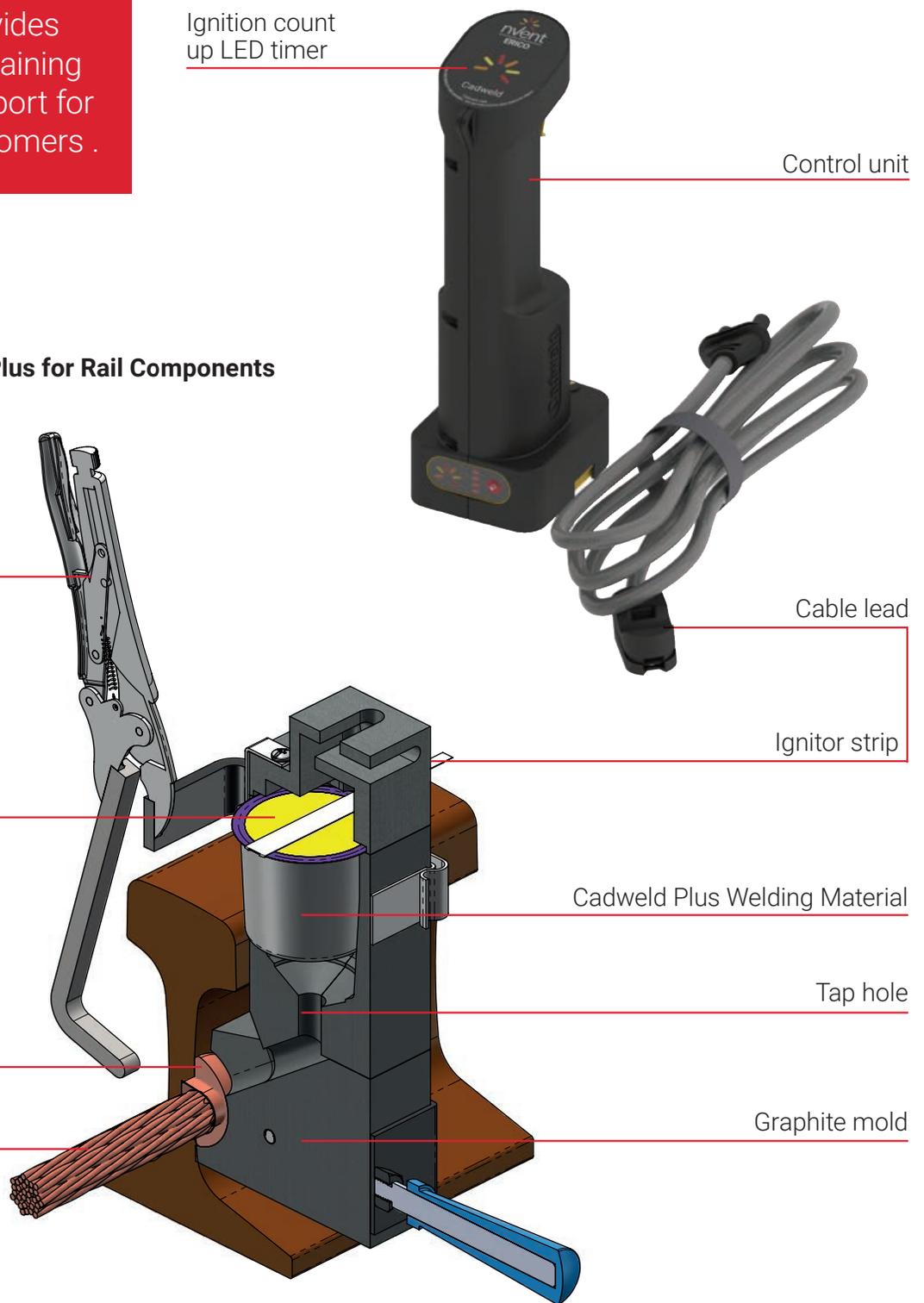
Cadweld Plus Welding Material

Tap hole

Weld cavity

Graphite mold

Conductor



# Installation is Easy!

Proper rail surface preparation is paramount for any rail bond connection. Lightly grinding the rail surface, removing surface oxidation on the conductors, and drying and heating the rail and molds are highlighted in the instruction print. Once the preparation is completed, the four steps below complete the Cadweld Plus process.



1 Insert Cadweld Plus cup into mold.



2 Attach control unit termination clip to ignition strip.



3 Release the control unit trigger guard, press and hold the switch and wait for the ignition.



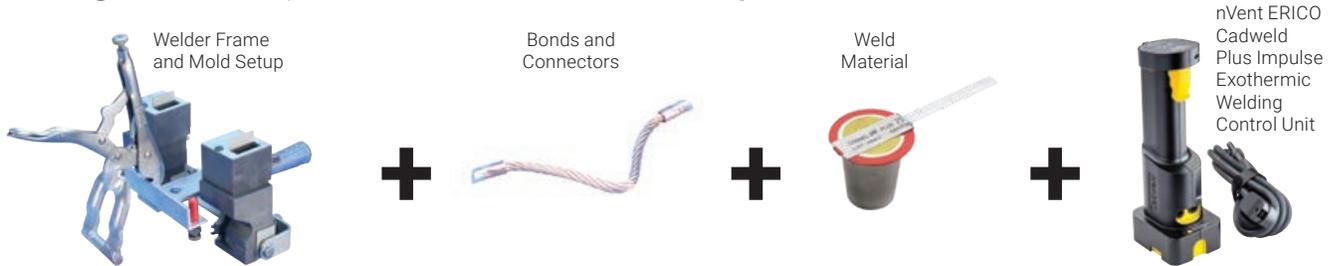
5 After reaction, open the mold and remove the expended steel cup – no special disposal required.



# Selecting nVent ERICO Cadweld Plus

## NVENT ERICO CADWELD KITS AND COMPONENTS

The nVent ERICO Cadweld Plus for Rail components consist of a welder frame, graphite mold (with available hardware and mold cleaner), grinding wheel and available grinding tools, weld material and electronic ignition system. Cadweld Plus for Rail is sold in kits that include various combinations of these products, individual items are also sold separately\*. With the exception of the weld cup(s) and bond strand in use, each of these components is designed for a multiple-use service life. To find and select Cadweld and Cadweld Plus kits and individual components, visit [erico.com](http://erico.com) and view the sections detailing Rail Bonds and Power Bonds. E-mail [rail@nVent.com](mailto:rail@nVent.com) to request the nVent ERICO Rail Products Catalog.



\*Acetylene torch, approved grinding wheel and tools are also required. nVent ERICO offers all necessary Cadweld accessories.

## NVENT ERICO CADWELD PLUS IMPULSE IGNITION SYSTEM

### Components Included in the Impulse Ignition Kit

Control Unit



Leads



AA Batteries (Lithium)  
Adaptor included in kit



1



2



3



### Battery Adapters (Sold Separately)

Part Number	Description
PLUSCU2BAA	AA Battery Adapter (1), also included in kit
PLUSCU2BM	Milwaukee® 18 V Battery Adapter (2)
PLUSCU2BD	DEWALT® 20 V Battery Adapter (3)

System Kits Part Number	Description
PBPLUSCU2L6	Kit w/ 6' / 1.8m Lead
PBPLUSCU2L15	Kit w/ 15' / 4.5m Lead

### Replacement Leads (Sold Separately)

Part Number	Description
PLUSCU2RLD6	6' / 1.8m
PLUSCU2RLD15	15' / 4.5m



### Download the Data Sheet

For more information on the nVent ERICO Cadweld Plus Impulse Exothermic Welding Control Unit

## CADWELD PLUS WELD MATERIAL

Part Number	Color Code Ring	Package Quantity
SB25PLUSF80	Red	20 pc
SB32PLUSF80	White	20 pc
PB45PLUSF80	Light Blue	20 pc
PB65PLUSF80	Dark Green	20 pc
PB90PLUSF80	Gray	10 pc
PB115PLUSF80	Orange	10 pc
PB150PLUSF80	Dark Blue	10 pc
PB200PLUSF80	Yellow	10 pc
PB250PLUSF80	Purple	10 pc
PB300PLUSF80	Light Green	10 pc
PB400PLUSF80	Brown	10 pc
PB500PLUSF80	Light Brown	10 pc

## CADWELD TOOLS

nVent ERICO offers a variety of equipment and accessories for use with Cadweld, including rail grinders, hand tools and more.

### SBG100

Portable Rail Grinder with organic grinding wheels that does not leave resin on bonding surface.



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