

**ERITECH<sup>®</sup>**

# **CADWELD<sup>®</sup> Exothermic Welding Manual**



**ERICO<sup>®</sup>**

## WARNING

1. ERICO products shall be installed and used only as indicated in ERICO product instruction sheets and training materials. Instruction sheets are available at [www.erico.com](http://www.erico.com) and from your ERICO customer service representative.
2. ERICO products must never be used for a purpose other than the purpose for which they were designed or in a manner that exceeds specified load ratings.
3. All instructions must be completely followed to ensure proper and safe installation and performance.
4. Improper installation, misuse, misapplication or other failure to completely follow ERICO's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death.

## GENERAL AND SAFETY INSTRUCTIONS:

- A. Only ERICO manufactured equipment and materials should be used to make CADWELD® connections.
- B. Do not connect items except as detailed in instruction sheets. Failure to comply with these instructions may result in improper and unsafe connections, damage to items being connected, bodily injury and property damage.
- C. Do not use worn or broken equipment which could cause leakage.
- D. Do not alter equipment or material without ERICO authorization.
- E. When using CADWELD® do not use welding material package if damaged or not fully intact. When using CADWELD® PLUS, do not tamper with or disassemble the welding material unit.
- F. Make connections in conformance with CADWELD instructions and all governing codes.
  1. Personnel should be properly trained in the use of this product and must wear safety glasses and gloves.
  2. Avoid contact with hot materials.
  3. Advise nearby personnel of welding operations in the area.
  4. Remove or protect fire hazards in the immediate area.
  5. Provide adequate ventilation to the work area.
  6. Do not smoke when handling starting material.
  7. Avoid direct eye contact with "flash" of light from ignition of starting material.
- G. Welding material is an exothermic mixture and reacts to produce hot molten material with temperatures in excess of 1400°C (2500°F) and a localized release of smoke. These materials are not explosive. Ignition temperatures are in excess of 900°C (1650°F) for welding material.
- H. Adhering to the CADWELD welding procedures will minimize risk of burns and fire caused by hot molten material spillage. In case of fire, use of water or CO<sub>2</sub> will aid in control of burning containers. Large quantities of water will aid in controlling a fire should the exothermic materials become involved. Water should be applied from a distance.
  1. Make sure there is proper mold fit and assembly of equipment.
  2. Avoid moisture and contaminants in mold and materials being welded. Contact between hot molten metal and moisture or contaminants may result in spewing of hot material.
  3. Base material thickness must be sufficient for the size and type of connection being made to prevent melt-through and leakage of hot molten metal.
- I. Applications or conditions may exist which require special considerations. The following are examples, but are not intended to be a complete listing of applications/conditions.

## CONNECTIONS TO PIPE/VESSELS

For use with cast iron pipe or heavy casting meeting ASTM A47-84, A48-83, A126-84, A278-85, or A377-89. DO NOT USE ON CAST IRON SOIL PIPE (ASTM A74-93). Evaluate possible effects of CADWELD connections to structural members and thin-wall materials; vessels/piping systems that are pressurized, closed or containing (or having contained) flammable/explosive/hazardous materials. Evaluation should be made prior to use, based on conditions of use and applicable codes, and should incorporate as a minimum, effects of melt-through of hot material; structural/metallurgical effects of CADWELD connections, pressure (temperature) build-up and fire/chemical decomposition hazards.

## CONNECTIONS TO REBAR

Application of the CADWELD connection may have an effect on the rebar's structural integrity. The rebar's chemistry and the location of the weld should be considered before making any welds to the rebar. For lapped rebar splices, it is recommended that the connections be made near the bar end at an area of minimum stress. If CADWELD Rebar Splices are used, the grounding connection can be made to the splice sleeve with minimal effect on the structural characteristics of the splice.

## SAFETY INSTRUCTIONS:

All governing codes and regulations and those required by the job site must be observed. Always use appropriate safety equipment such as eye protection, hard hat, and gloves as appropriate to the application.

## WARRANTY

ERICO products are warranted to be free from defects in material and workmanship at the time of shipment. NO OTHER WARRANTY, WHETHER EXPRESS OR IMPLIED (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), SHALL EXIST IN CONNECTION WITH THE SALE OR USE OF ANY ERICO PRODUCTS. Claims for errors, shortages, defects or nonconformities ascertainable upon inspection must be made in writing within 5 days after Buyer's receipt of products. All other claims must be made in writing to ERICO within 6 months from the date of shipment or transport. Products claimed to be nonconforming or defective must, upon ERICO's prior written approval in accordance with its standard terms and procedures governing returns, promptly be returned to ERICO for inspection. Claims not made as provided above and within the applicable time period will be barred. ERICO shall in no event be responsible if the products have not been stored or used in accordance with its specifications and recommended procedures. ERICO will, at its option, either repair or replace nonconforming or defective products for which it is responsible or return the purchase price to the Buyer. THE FOREGOING STATES BUYER'S EXCLUSIVE REMEDY FOR ANY BREACH OF ERICO WARRANTY AND FOR ANY CLAIM, WHETHER SOUNDING IN CONTRACT, TORT OR NEGLIGENCE, FOR LOSS OR INJURY CAUSED BY THE SALE OR USE OF ANY PRODUCT.

## LIMITATION OF LIABILITY

ERICO excludes all liability except such liability that is directly attributable to the willful or gross negligence of ERICO's employees. Should ERICO be held liable its liability shall in no event exceed the total purchase price under the contract. ERICO SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS OF BUSINESS OR PROFITS, DOWNTIME OR DELAY, LABOR, REPAIR OR MATERIAL COSTS OR ANY SIMILAR OR DISSIMILAR CONSEQUENTIAL LOSS OR DAMAGE INCURRED BY BUYER.

# The CADWELD® Process

The CADWELD® process is a method of making electrical connections of copper-to-copper or copper-to-steel in which no outside source of heat or power is required.

In this process, conductors are prepared, placed in a purpose-designed graphite mold, and exothermically welded to produce a permanent electrical connection.

The steps outlined below are a general demonstration of a typical welded connection. These basic steps are used for all CADWELD electrical connections. Be sure to read and follow the instructions included with every mold before making a connection.

The CADWELD exothermic process is a system. Materials from other manufacturers should not be mixed or matched with CADWELD molds or welding material.

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# The CADWELD® Process



**Fig. 1**

Always wear protective safety glasses and gloves while working with CADWELD® exothermic welding products.



**Fig. 2**

Gather the proper materials and equipment for the type of connection you are making. The typical CADWELD system requires a graphite mold, handle clamp, welding material, natural bristle brush for mold cleaning, wire brush for cleaning/preparing conductors, flint igniter, and propane torch.

**NOTE: Additional materials may be required for your specific application. Refer to your mold instructions. Advise nearby personnel of welding operations in the area prior to ignition.**



**Fig. 3**

Check to ensure the graphite mold is not worn or broken, which could cause leakage of molten weld metal during the reaction.

# The CADWELD® Process



**Fig. 4**

Inspect the mold ID tag to ensure that it corresponds to the application, indicated by the:

1. mold part number
2. conductor size
3. welding material required
4. other materials required

The mold must be correct for the conductor size and application. **DO NOT MODIFY MOLDS.**



**Fig. 5**

Remove the small wire bracket which is used to temporarily hold the mold together before using. Set the bracket aside.



**Fig. 6**

Slide the handle clamp into the pre-drilled holes with the proper orientation for the thumbscrews.

# The CADWELD® Process



**Fig. 7**  
Tighten the clamp thumbscrews onto the mold.



**Fig. 8**  
Close the grips to tightly lock the mold. Check for an appropriate seal on the mold.



**Fig. 9**  
If the mold does not seal properly, make adjustments to tighten/loosen the handle clamp.

# The CADWELD® Process



**Fig. 10**

Graphite absorbs moisture. Ignite the propane torch and dry out the inside of the mold thoroughly on both sides, heating the mold to approximately 250 degrees Fahrenheit (120 degrees Celsius).



**Fig. 11**

The conductors should be clean and dry before the connection is made. Use a propane torch to dry wire conductors and remove remaining cleaning residue, solvent, or water before making the CADWELD® connection.



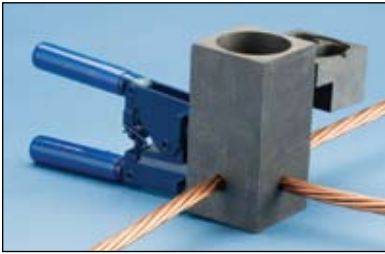
**Fig. 12**

Next, use a wire brush to further prepare the surface of the conductors (CADWELD T-313 or T-314 brush). Scrape the outer surface to remove dirt and oxidation. You will notice a slight color change.

# The CADWELD® Process



**Fig. 13**  
Insert the conductors and position them for the connection.



**Fig. 14**  
Close the clamp tightly once the conductors are properly positioned.



**Fig. 15**  
Steel disk found inside the packaging box of welding material.



# The CADWELD® Process



**Fig. 16**

Insert the steel disk (concave side up) into the mold. Hold the steel disk on the side of the mold and let it slide into place.



**Fig. 17**

Ensure that the steel disk is properly seated.



**Fig. 18**

Next, take a tube of properly sized welding material (as identified on the mold ID tag) out of the box.

# The CADWELD® Process



**Fig. 19**  
Remove the lid over the mold crucible.



**Fig. 20**  
Quickly pour the loose welding material powder into the mold.



**Fig. 21**  
The bottom of the tube contains compressed material (starting material). Tap the bottom of the tube a couple of times to loosen this material.

# The CADWELD® Process



**Fig. 22**

Pour 1/4 to 1/3 of the starting material over the welding material in the mold crucible.



**Fig. 23**

Close the lid and pour the remaining 3/4 to 2/3 of the starting material into the slot on the mold cover.

**NOTE: Welding material is an exothermic mixture and reacts to produce hot molten material with temperatures in excess of 2500 degrees Fahrenheit (1400 degrees Celsius) and a localized release of smoke. Avoid looking directly at the "flash" of light from ignition of starting material. Avoid inhalation of smoke/fumes.**



**Fig. 24**

Aiming the flint igniter from the side, ignite the starting material on the mold cover. Withdraw the igniter quickly to prevent fouling.

Allow approximately 30 seconds for completion of the reaction and solidification of the molten material.

# The CADWELD® Process



**Fig. 25**

Open the mold and remove the connection. Use care to prevent chipping the mold. Avoid contact with hot materials. Refer to the "Installers & Inspectors Section (Appendix A)" to see whether a quality connection has been made.



**Fig. 26**

Completed CADWELD® connection.



**Fig. 27**

CADWELD graphite molds will last approximately 50 connections. Use a soft cotton cloth or a soft bristle brush (ERICO® part #T394) to clean inside the mold cavity and cover.



**Fig. 28**

You are ready to make another CADWELD connection.

# The CADWELD® PLUS Process



**Fig. 1**

Always wear protective safety glasses and gloves while working with CADWELD® exothermic products.



**Fig. 2**

Prepare the proper materials and equipment for the type of connection you are making. The CADWELD® PLUS system requires a graphite mold, mold clamp, CADWELD PLUS welding material cup, natural bristle brush for mold cleaning, wire brush for cleaning/preparing conductors, control unit, and propane torch.

**NOTE: Additional materials may be required for your specific application. Refer to your mold instructions. Advise nearby personnel of welding operations in the area prior to ignition.**



**Fig. 3**

Check to ensure the graphite mold is not worn or broken, which could cause leakage of molten weld metal during the reaction.

# The CADWELD® PLUS Process



**Fig. 4**

Inspect the mold ID tag to ensure that it corresponds to the application, indicated by the:

1. mold part number
2. conductor size
3. welding material required
4. other materials required

The mold must be correct for the conductor size and application. **DO NOT MODIFY MOLDS.**



**Fig. 5**

Remove the small wire bracket which is used to temporarily hold the mold together before using. Set the bracket aside.



**Fig. 6**

Slide the handle clamp into the pre-drilled holes with the proper orientation for the thumbscrews.

# The CADWELD® PLUS Process



**Fig. 7**  
Tighten the clamp thumbscrews onto the mold.



**Fig. 8**  
Close the grips to tightly lock the mold. Check for an appropriate seal on the mold.



**Fig. 9**  
If the mold does not seal properly, make adjustments to tighten/loosen the handle clamp.

# The CADWELD® PLUS Process



**Fig. 10**

Graphite absorbs moisture. Ignite the propane torch and dry out the inside of the mold thoroughly on both sides, heating the mold to approximately 250 degrees Fahrenheit (120 degrees Celsius).



**Fig. 11**

The conductors should be clean and dry before the connection is made. Use a propane torch to dry wire conductors and remove remaining cleaning residue, solvent, or water before making the CADWELD® connection.



**Fig. 12**

Next, use a wire brush to further prepare the surface of the conductors (CADWELD T-313 or T-314 brush). Scrape the outer surface to remove dirt and oxidation. You will notice a slight color change.



# The CADWELD® PLUS Process



**Fig. 13**  
Insert the conductors and position them for the connection.



**Fig. 14**  
Close the clamp tightly once the conductors are properly positioned.



**Fig. 15**  
Remove the proper CADWELD® PLUS welding material cup from the plastic container. Inspect the cup to ensure it is tightly sealed and the ignition strip is securely attached to the seal.

# The CADWELD® PLUS Process



**Fig. 16**

Place the cup into the top of the mold. Make sure the ignition strip nests into the recess on the top edge when the cover is closed.



**Fig. 17**

Battery powered control unit.



**Fig. 18**

Place the ignition strip into the control unit connector. Remove or protect fire hazards in close proximity to the connection.

# The CADWELD® PLUS Process



**Fig. 19**

Close the graphite mold lid. Advise nearby personnel of welding operations in the area.



**Fig. 20**

Using the control unit, press the button and hold, while you observe the "ready" indicator light. A green light will blink for a few seconds and then will change to a constant light. At this time, the unit will send a charge to the ignition strip. The ignition strip will spark inside the metal cup, initiating the CADWELD® PLUS exothermic reaction.

Allow approximately 30 seconds for completion of the reaction and solidification of the molten material.



**Fig. 21**

Remove the control unit connector from the ignition strip. Open the lid and remove the used CADWELD PLUS cup from the mold.

# The CADWELD® PLUS Process



**Fig. 22**

Open the mold and remove the connection. Use care to prevent chipping the mold. Avoid contact with hot materials. Refer to the "Installers & Inspectors Section (Appendix A)" to see whether a quality connection has been made.



**Fig. 23**

Completed CADWELD® connection.



**Fig. 24**

CADWELD graphite molds will last approximately 50 connections. Use a soft cotton cloth or a soft bristle brush (ERICO® part #T394) to clean inside the mold cavity and cover.



**Fig. 25**

You are ready to make another CADWELD connection.

# The CADWELD® EXOLON Process



**Fig. 1**

Always wear protective safety glasses and gloves while working with CADWELD® exothermic products.



**Fig. 2**

Prepare the proper materials and equipment for the type of connection you are making. The CADWELD® EXOLON system requires a CADWELD EXOLON graphite mold, handle clamp, welding material, wire brush for cleaning/preparing conductors, battery pack, and propane torch.

**NOTE: Additional materials may be required for your specific application. Refer to your mold instructions. Advise nearby personnel of welding operations in the area prior to ignition.**



**Fig. 3**

Check to ensure the graphite mold is not worn or broken, which could cause leakage of molten weld metal during the reaction.

# The CADWELD® EXOLON Process



**Fig. 4**

Inspect the mold ID tag to ensure that it corresponds to the application, indicated by the:

1. mold part number
2. conductor size
3. welding material required
4. other materials required

The mold must be correct for the conductor size and application. **DO NOT MODIFY MOLDS.**



**Fig. 5**

Remove the small wire bracket which is used to temporarily hold the mold together before using. Set the bracket aside.



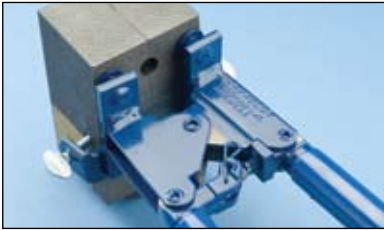
**Fig. 6**

Slide the handle clamp into the pre-drilled holes with the proper orientation for the thumbscrews.

# The CADWELD® EXOLON Process



**Fig. 7**  
Tighten the clamp thumbscrews onto the mold.



**Fig. 8**  
Close the grips to tightly lock the mold. Check for an appropriate seal on the mold.



**Fig. 9**  
If the mold does not seal properly, make adjustments to the handle clamp.



**Fig. 10**  
Graphite absorbs moisture. Ignite the propane torch and dry out the inside of the mold thoroughly on both sides, heating the mold to approximately 250 degrees Fahrenheit (120 degrees Celsius).

# The CADWELD® EXOLON Process



**Fig. 11**

The conductors should be clean and dry before the connection is made. Use a propane torch to dry wire conductors and remove remaining cleaning residue, solvent, or water before making the CADWELD® connection.



**Fig. 12**

Next, use a wire brush to further prepare the surface of the conductors and ground rod (CADWELD T-313 or T-314 brush). Scrape the outer surface to remove dirt and oxidation. You will notice a slight color change.



**Fig. 13**

Weld metal package (includes welding material, discs, filters and ignitors for 4 connections).



# The CADWELD® EXOLON Process



**Fig. 14**

Each CADWELD® EXOLON package contains 2 filters for a low emission connection. Insert the white ceramic and black graphite filters into the mold cover. (Filters must be changed every 4 connections.)

**NOTE: If using XL200 welding material or higher, 3 filters (1 white, 2 black) are included in the weld metal package. Insert the white filter between the black filters.**



**Fig. 15**

Insert the conductors and position them for the connection.



**Fig. 16**

Close the clamp tightly once the conductors are properly positioned.

# The CADWELD® EXOLON Process



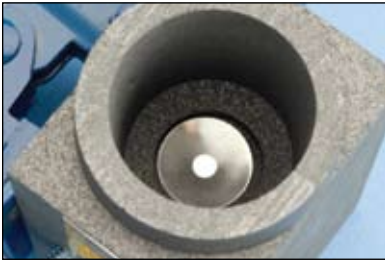
**Fig. 17**

Steel disk found inside the packaging box of welding material.



**Fig. 18**

Insert the steel disk (concave side up) into the mold. Hold the steel disk on the side of the mold and let it slide into place.



**Fig. 19**

Ensure that the steel disk is properly seated.



**Fig. 20**

Next, take the tube of welding material included in the CADWELD® EXOLON package and remove the lid over the mold crucible.

# The CADWELD® EXOLON Process



**Fig. 21**

Quickly pour the loose welding material powder into the CADWELD EXOLON mold.

**NOTE: Welding material is an exothermic mixture and reacts to produce hot molten material with temperatures in excess of 2500 degrees Fahrenheit (1400 degrees Celsius) and a localized release of smoke. Avoid direct eye contact with "flash" of light from ignition of starting material. Avoid inhalation of smoke/fumes.**



**Fig. 22**

Place the graphite CADWELD EXOLON cover onto the mold, with the larger side facing down.



**Fig. 23**

Next, take an igniter pin and place it halfway into the small hole on the side of the mold, with the loop side facing into the hole. Spread the wire leads.

# The CADWELD® EXOLON Process



**Fig. 24**  
CADWELD® EXOLON battery pack.



**Fig. 25**  
Take the alligator clips and clip them onto the wire leads. Remove or protect fire hazards in close proximity to the connection. Advise nearby personnel of welding operations in the area.



**Fig. 26**  
Using the CADWELD EXOLON battery pack, press the button. At this time, the unit will send a charge to the igniter pin. The igniter pin will initiate the CADWELD EXOLON exothermic reaction.  
Allow approximately 30 seconds for completion of the reaction and solidification of the molten material.



**Fig. 27**  
Remove the alligator clips from the igniter pin. Remove the graphite cover of the CADWELD EXOLON mold.

# The CADWELD® EXOLON Process



**Fig. 28**

Open the mold and remove the connection. Use care to prevent chipping the mold. Avoid contact with hot materials. See the "Installers & Inspectors Guide" to see whether a quality connection has been made.



**Fig. 29**

Completed CADWELD® connection.



**Fig. 30**

CADWELD® EXOLON graphite molds will last approximately 50 connections. Use a soft cotton cloth or a soft bristle brush (ERICO® part #T394) to clean inside the mold cavity and cover; remove any slag left from the exothermic reaction.



**Fig. 31**

You are ready to make another CADWELD connection.

# The CADWELD® ONE SHOT Process



**Fig. 1**

Always wear protective safety glasses and gloves while working with CADWELD® exothermic products.



**Fig. 2**

Gather the proper materials and equipment for the type of connection you are making. The CADWELD® ONE SHOT system requires a CADWELD ONE SHOT ceramic mold, welding material, wire brush for cleaning/preparing conductors, flint igniter, and propane torch.

**NOTE: Additional materials may be required for your specific application. Refer to your mold instructions. Advise nearby personnel of welding operations in the area prior to ignition.**



**Fig. 3**

Check to ensure the ceramic mold is not broken, which could cause leakage of molten weld metal during the reaction.

Inspect the CADWELD ONE SHOT box label to ensure that it corresponds to the application, indicated by the:

1. CADWELD ONE SHOT part number
2. conductor size
3. welding material required
4. other materials required

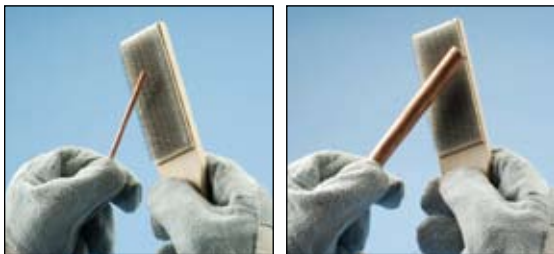
The mold must be correct for the conductor size and application. **DO NOT MODIFY MOLDS.**

## The CADWELD® ONE SHOT Process



**Fig. 4**

The conductors should be clean and dry before the connection is made. Use a propane torch to dry wire conductors and remove remaining cleaning residue, solvent, or water before making the CADWELD® ONE SHOT connection.



**Fig. 5**

Next, use a wire brush to further prepare the surface of the conductors and ground rod (CADWELD® T-313 or T-314 brush).

Scrape the outer surface to remove dirt and oxidation. You will notice a slight color change.



**Fig. 6**

Each CADWELD ONE SHOT contains a rubber grommet at the bottom of the mold.

Gently turn the CADWELD ONE SHOT onto the ground rod until the ground rod reaches the stopper and cannot go any further.

# The CADWELD® ONE SHOT Process



**Fig. 7**  
Insert the conductors and position them for the connection.



**Fig. 8**  
Place the steel disk into the CADWELD® ONE SHOT with the concave side facing up.



**Fig. 9**  
Ensure that the steel disk is properly seated inside the CADWELD ONE SHOT.



**Fig. 10**  
Next, take the tube of welding material included in the CADWELD ONE SHOT package and remove the lid over the crucible.



# The CADWELD® ONE SHOT Process



**Fig. 11**

Quickly pour the loose welding material powder into the CADWELD® ONE SHOT mold.



**Fig. 12**

Place the cover on the top of the CADWELD ONE SHOT.



**Fig. 13**

The bottom of the tube contains compressed material (starting material). Tap the bottom of the tube a couple of times to loosen this material.



**Fig. 14**

Pour the starting material onto the CADWELD ONE SHOT cover.

**NOTE: Welding material is an exothermic mixture and reacts to produce hot molten material with temperatures in excess of 2500 degrees Fahrenheit (1400 degrees Celsius) and a localized release of smoke. Avoid direct eye contact with "flash" of light from ignition of starting material. Avoid inhalation of smoke/fumes.**

# The CADWELD® ONE SHOT Process



**Fig. 15**

Aiming the flint igniter from the side, ignite the starting material on the mold cover. Withdraw the igniter quickly to prevent fouling.

Allow approximately 30 seconds for completion of the reaction and solidification of the molten material.



**Fig. 16**

Break the ceramic CADWELD® ONE SHOT mold off of the connection. Avoid contact with hot materials.

See the "Installers & Inspectors Guide" to see whether a quality connection has been made.



**Fig. 17**

You are ready to make another CADWELD ONE SHOT connection.

# The CADWELD® PLUS ONE SHOT Process



**Fig. 1**

Always wear protective safety glasses and gloves while working with CADWELD® exothermic products.



**Fig. 2**

Prepare the proper materials and equipment for the type of connection you are making. The CADWELD® PLUS ONE SHOT system requires a CADWELD® PLUS ONE SHOT ceramic mold, CADWELD® PLUS welding material, wire brush for cleaning/preparing conductors, control unit, and propane torch.

**NOTE: Additional materials may be required for your specific application. Refer to your mold instructions.**



**Fig. 3**

Check to ensure the ceramic mold is not worn or broken, which could cause leakage of molten weld metal during the reaction.

Inspect the CADWELD PLUS ONE SHOT box label to ensure that it corresponds to the application, indicated by the:

1. CADWELD PLUS ONE SHOT part number
2. conductor size
3. welding material required
4. other materials required

The mold must be correct for the conductor size and application. **DO NOT MODIFY MOLDS.**

## The CADWELD® PLUS ONE SHOT Process



**Fig. 4**

The conductors should be clean and dry before the connection is made. Use a propane torch to dry wire conductors and remove remaining cleaning residue, solvent, or water before making the CADWELD® connection.



**Fig. 5**

Next, use a wire brush to further prepare the surface of the conductors and ground rod (CADWELD T-313 or T-314 brush).

Scrape the outer surface to remove dirt and oxidation. You will notice a slight color change.



**Fig. 6**

Each CADWELD PLUS ONE SHOT contains a copper wire at the bottom of the mold.

Place the mold onto the ground rod until the ground rod reaches the wire stopper and cannot go any further.

## The CADWELD® PLUS ONE SHOT Process



**Fig. 7**  
Insert the conductors and position them for the connection.



**Fig. 8**  
Inspect the cup to ensure it is tightly sealed and the ignition strip is securely attached to the seal.

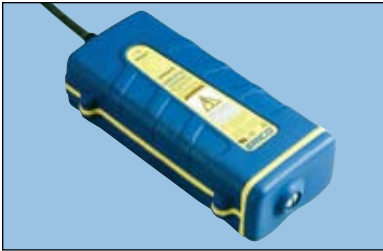


**Fig. 9**  
Place the welding material cup into the top of the mold. Make sure the ignition strip nests into the recess on the top edge.



**Fig. 10**  
Place the ceramic lid onto the mold.

## The CADWELD® PLUS ONE SHOT Process



**Fig. 11**  
Battery powered control unit.



**Fig. 12**  
Place the ignition strip into the control unit connector. Remove or protect fire hazards in close proximity to the connection. Advise nearby personnel of welding operations in the area.



**Fig. 13**  
Using the control unit, press the button and hold, while you observe the "ready" indicator light. A green light will blink for a few seconds and then will change to a constant light. At this time, the unit will send a charge to the ignition strip. The ignition strip will spark inside the metal cup, activating the CADWELD® PLUS exothermic reaction.

Allow approximately 30 seconds for completion of the reaction and solidification of the molten material.

## The CADWELD® PLUS ONE SHOT Process



**Fig. 14**

Remove and dispose of the used CADWELD® PLUS weld metal cup.



**Fig. 15**

Break the ceramic CADWELD® ONE SHOT mold off of the connection. Avoid contact with hot materials. See the "Installers & Inspectors Guide" to see whether a quality connection has been made.



**Fig. 16**

You are ready to make another CADWELD® connection.

# ERICO®



Australia



Mexico



Belgium



Netherlands



Brazil



Norway



Canada



Poland



Chile



Singapore



China



Spain



Denmark



Sweden



France



Switzerland



Germany



Thailand



Hong Kong



United Arab Emirates



Hungary



United Kingdom



Indonesia



United States



Italy