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

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.

3. Check to ensure the graphite mold is not worn or broken, which could cause leakage of molten weld metal during reaction.
4. Inspect the mold ID tag to ensure that it corresponds to the application, indicated by the:
   - Mold part number
   - Conductor size
   - Welding material required
   - Other materials required

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

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

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

7. Tighten the clamp thumbscrews onto the mold.
8. Close the grips to tightly lock the mold. Check for an appropriate seal on the mold.

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

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).

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.
12. Next, use a wire brush to further prepare the surface of the conductors. Scrape the outer surface to remove dirt and oxidation. You will notice a slight colour change.

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

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

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

17. Battery powered control unit.

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

19. Close the graphite mold lid. Advise nearby personnel of welding operations in the area.
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. At this time, the unit will send a charge to the ignition strip. The ignition strip will spark inside the metal cup, igniting the CADWELD® PLUS exothermic reaction.

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

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

22. Open the mold and remove the connection. Use care to prevent chipping the mold. Avoid contact with hot materials.

23. A completed CADWELD PLUS connection.
24. CADWELD graphite molds will last approximately 50 connections. Use a soft cotton cloth or soft bristle brush to clean inside the mold cavity and cover.

25. You are ready to make another CADWELD connection.