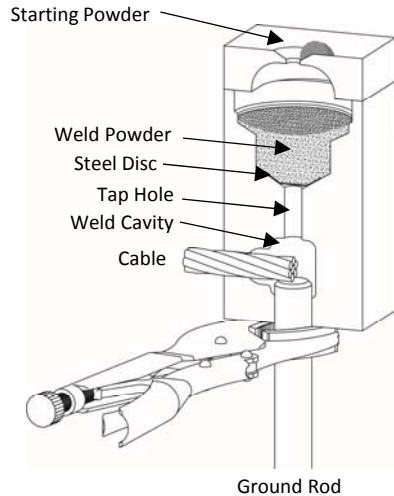
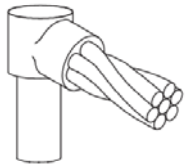


ULTRAWELD®

INSTRUCTIONS FOR ULTRAWELD® GROUNDING CONNECTIONS - CABLE TO GROUND ROD

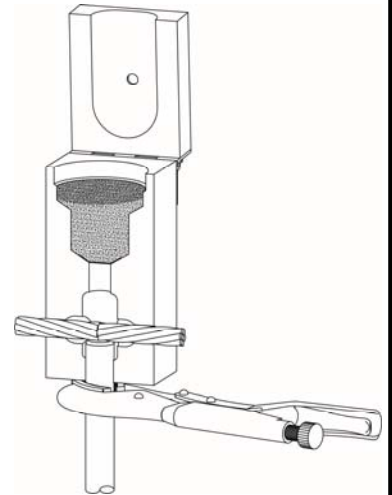
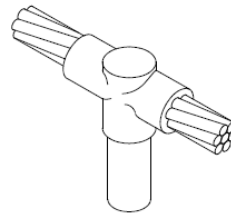
GD

Place end of cable under the center of the tap hole. Cable must sit on top of ground rod. Use locking pliers or a clamp on the rod below the mold to prevent it from slipping when the mold is fired.



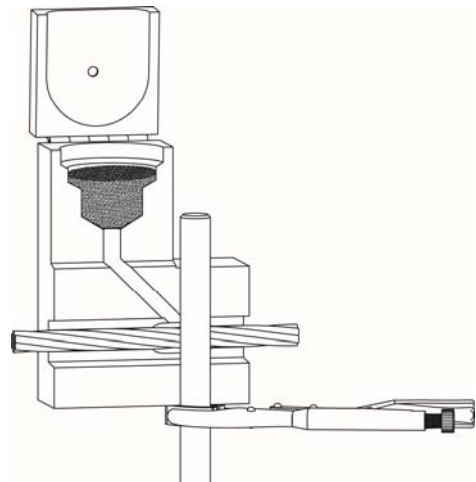
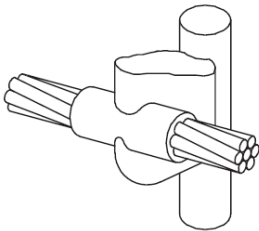
GO

Place cable in the mold. Cable must sit on top of ground rod. Use locking pliers or a clamp on the rod below the mold to prevent it from slipping when the mold is fired.



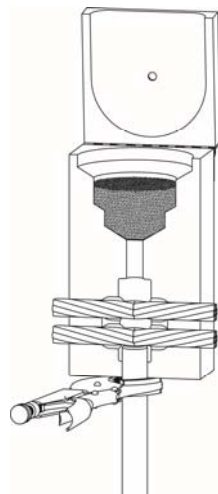
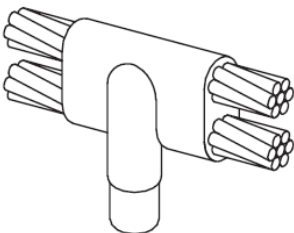
GS

Place cable into mold and secure mold to ground rod with handle clamp. Support mold to keep it from sliding down the ground rod when welding with locking pliers or clamp below mold.



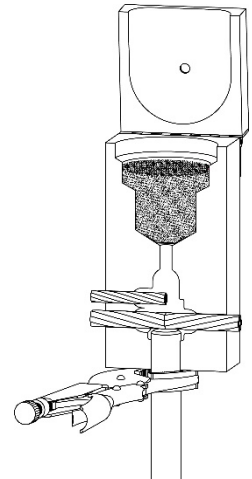
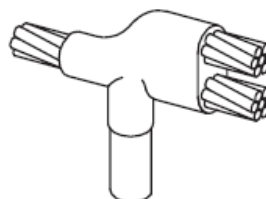
GF

Place cables in mold. Bottom run cable must sit on top of the ground rod. Use a pair of locking pliers or a clamp below mold on ground rod to support the mold and prevent slipping.



GT

Place end of tap cable under center of tap hole. Run cable must sit on top of the ground rod. Use a pair of locking pliers or a clamp below mold on ground rod to support the mold and prevent slipping.



GENERAL SAFETY INSTRUCTIONS

1. Always wear proper clothing, safety glasses and gloves when exothermic welding.
2. Only weld items that the mold is designed for.
3. Do not use worn or broken molds which could cause leakage of molten weld metal.
4. Always use proper handle clamps or frame work required for the mold and make sure it is adjusted properly to close the mold completely.
5. Make sure that the conductors being welded fit in the mold properly and that the mold will close tightly around them.
6. Do not alter molds or accessories without factory authorization.
7. Avoid breathing concentrations of smoke, as it may be hazardous to your health.
8. Avoid contact with hot materials.
9. Remove or protect fire hazards in the welding area.
10. Avoid moisture and contaminants in the mold and conductors being welded. Contact of molten weld metal with moisture or contaminants may cause weld metal to spew out of mold.
11. When welding to pipe or vessels, you should consider the following:
 - A. the effect welding may have on structural members and thin wall pipe or vessels.
 - B. pipe or vessels that are pressurized or contain (or have contained) flammable, explosive or hazardous materials should be evaluated in the case of a melt through or hot molten weld metal coming in contact with any flammable, explosive or hazardous materials.
12. Failure to abide by the above and follow welding procedures may result in improper welds, damage to the material being welded or create hazardous situations for the individual.

PREPARATION OF CABLE

1. Cable must be bright, clean and dry.
2. Cable that is saturated with oil or grease must be cleaned. Cable may be cleaned by burning it off with a propane or oxy-acetylene torch. After burning off oil or grease, a wire brush should be used to remove residue. Wet cable must be dried out. Use a hand propane torch.
3. Corroded cable must be cleaned. Use the CCBRS2 cable cleaning brush or CCBRS1 card cloth brush. It is important that the ends of the individual strands are clean. This can best be accomplished by making a fresh cut on the end of the cable.
4. Cable should be straightened before clamping mold in place. Bent or out of round cable will hold mold open and cause leaks.
5. Remove insulation from insulated cable before cutting with hack saw. Otherwise, ends of strands will become coated with insulating material which may cause defective welds.
6. FLEXIBLE CABLE: A sleeve must be used when welding flexible cable. WRPSLV wrap sleeves are recommended for 300 MCM and smaller cable or check with factory for premade sleeves.

PREPARATION OF GROUND RODS AND GROUND RECEPTACLES

1. Ends that are threaded, mushroomed from driving, or drilled and tapped, must be cut off before welding to the end. Contact factory about ground rod driving sleeves.
2. The site of the weld on the ground rods and receptacles must be clean. Use a coarse file to remove rust and oxide before welding
3. Slightly UNDER SIZED ROD MAY BE BUILT UP WITH WRPSLV WRAP SLEEVES. This will not work for large differences in size.

WELDING PROCEDURE

1. Read all instructions and safety warnings before starting.
2. Check mold tag for conductors to be welded and proper weld metal cartridge size to use.
3. Insert proper handles into the mold and lock mold shut if applicable.
4. Make sure all surfaces and conductors are clean, dry and are the proper sizes for the mold's application per mold tag.
5. Molds can be dried by heating to approximately 250°F. Molds may be dried with a hand operated propane torch or by firing a charge in the mold before making the desired weld.
6. Position conductor(s) into the mold. See front of this sheet for positioning of conductors into mold. Lock mold with handle clamps or frame, which ever is the case. Check to make sure mold is completely closed.
7. **NuwTube:**
 - A. *Insert steel disk being sure it is directly centered over the tap hole. Failure to insert disk into mold will create improper welds and spewing of weld metal.*
 - B. *Pour cartridge or cartridges into the crucible being careful not to upset the steel disk.*
 - C. *Remove Orange bottom lid in **NuwTube** to remove starting powder. Close lid and pour starting powder into cup in the top of the lid, allowing some to fall thru the ignition hole in the lid.*
 - D. *Ignite starting powder with flint gun. Pull flint gun away quickly to prevent fouling flint.*
8. **UltraShot**
 - A. Insert Ultrashot cup into mold crucible aligning metal igniter with the small groove in the top of the mold. Close lid.
 - B. Insert metal igniter into battery ignition cord.
 - C. Press both ignition buttons on battery pack while standing clear of exhaust port on mold. Mold should fire right away.
9. Wait approximately 30 seconds before opening mold to permit metal to solidify.
10. To clean the mold, use a MCBRS1 natural bristle brush, soft cloth or newspaper before making next weld. **Do NOT use wire or plastic brushes to clean the mold!**
11. On horizontally split molds, use end of mold cleaning spade, a small diameter rod, or screw driver to remove slag from tap hole. Caution should be used when cleaning molds to avoid burns from contact with hot mold.

NOTE:

1. A fouled flint gun may be cleaned by soaking in household ammonia.
2. Proper weld metal cartridge size is marked on mold tag and shown on the cap of the cartridge tube.
3. Cartridge size is the approximate weight of the powder in grams. When the cartridge size specified is not available, two or more smaller cartridges or part of a larger cartridge may be used.
4. Handle Clamp adjustments may be made by removing adjusting screw and turning eye bolt 180° clockwise to tighten or 180° counter clockwise to loosen.