

TerraWeld® Guide to Troubleshooting

#	Problem	Cause	Solution
1	The handles lock, but the mold doesn't close tightly.	Handle clamps are not properly adjusted.	Adjust the handles, especially when they are new.
		Use of improper cable size	Use the correct cable size, a too large cable will hold the mold open.
		Bent or out-of-round cable	Make sure that the cables are not curved or bent.
		Dirt or slag stuck in mold parting line	Check the mold parting line. Make sure there is no dirt, slag or foreign objects.
2	The connection is porous.	Presence of moisture or mold in the conductor	Dry the conductor by wiping and then heating.
		Not enough heating of the mold or heating temperature is too low	Heat mold with torch (to above 212 °F) or by igniting weld materials in mold without any conductors. Be careful to prevent burns from the hot material seeping out of the mold. NOTE: Do not use this method of heating if the mold has wear-plates.
		Presence of contaminants (oil, insulation, etc.) in conductors	Use a safety solvent to wash the conductor, and then dry it. If insulation is present between strands, remove it.
3	The conductors do not weld.	Conductors are not properly cleaned	Remove oxides using the wire brush. If heavily oxidized, create a fresh-cut conductor end and use TerraWeld® Heavy Duty molds.
		Conductors are not properly dried	Dry conductor with a torch.
		Improper gap or butting	Check for proper gap or butting as required (see mold tag and read the instructions packaged with the mold).
		Conductors are not properly positioned in the mold	Check to be sure gap is centered under tap hole. NOTE: In some cases, the run (thru) conductor must be cut and gapped. Follow instructions packaged with the mold or use TerraWeld® Heavy Duty molds.

EXOTHERMIC WELDING CATALOG

#	Problem	Cause	Solution
4	The connection is covered with unnecessary slag. NOTE: A small amount of slag on the surface is usual.	Disk was not put in.	Create a new weld while carefully observing the procedure steps.
		Disk movement	Use care when pouring the weld material.
		Disk not correctly seated	Ensure the disk is placed correctly.
		Chipped graphite at tap hole	Replace with a new mold.
5	Molten metal seeps out of the crucible when creating a connection (See the Problem #4.)	Presence of moisture or mold in the conductor	Mold material in weld cavity of mold.
		Lack of mold packing material in weld cavity of mold	Always apply mold packing material to conductor after mold is closed.
6	The weld metal leaks around the conductor.	Lack of mold packing material	Use packing material around the conductor after the mold is closed
		Excessively worn mold	Replace with a new mold.
		Excessive use	Use molds with wear-plates (which also act as chill-plates).
		Use of improper mold	Use a proper mold. Mold must be the correct size for the cable being welded.
7	The connection has “fins” — metal is lost.	Mold not being completely closed	See the Problem #1.
		Mold worn beyond useful life and needs replacement	Replace with a new mold.
8	The cables pull out of mold during welding.	Conductor movement	Use a clamp or other means to prevent movement of conductors during welding.
		Either twisted or tensioned conductors	Cut out the twisted conductor.
9	There is insufficient fill material to cover conductors.	Use of improper weld material size	Determine use of proper weld material size (see the mold tag).
		Resulting from leaking weld metal caused by worn mold	Replace mold, or if only worn around conductor opening, use duct seal (or putty) around conductor. Do not get duct seal into mold cavity.
		Conductor Movement	Determine use of proper weld material size (see the mold tag).
		Too large a gap between conductors	See the positioning instructions (Page 5 & Page 6).
		Mold Leak	See the Problems #6, 7, & 8.
10	The riser is too high.	Moisture in mold or conductor (see Problem #4)	Determine use of proper weld material size (see the mold tag).

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11	The mold wears out quickly. NOTE: Molds should last an average of 60-80 connections. See TerraWeld® Mold Inspection page 7.	Mold has not been cleaned at all or has been cleaned improperly	Use a cable clamp for hard-drawn copper or DSA Copper weld wire.
		Use of improper tools	Clean the mold with a soft brush (preferably natural bristle), clean cloth, or newspaper. DO NOT USE A WIRE BRUSH, it will cause erosion and quickly destroy the mold.
		Rough handling of molds	Use care when removing the mold from a finished connection to prevent chipping of the mold.
12	When welding to steel, the weld does not stick to the steel.	Steel is cleaned improperly	Clean the steel with a rasp or grinder to bright metal. All mill scale, paint, and/or other coating must be removed with a safety solvent before cleaning.
		Galvanized surfaces are not clean enough to be welded	Clean galvanized surfaces with a wire brush or emery cloth. However, extra heavy galvanized steel must be cleaned with a rasp.
		Steel surface or the conductors are moist or contaminated	Heat the surface to be welded with a torch (from back-side if possible). Any carbon deposit (visible as dark ash) must be removed from the surface to be welded.
		Conductors are not in proper position	Check the instruction sheet.
13	When welding to ductile iron or cast iron, the weld does not stick to the surface.	Excessive coatings present	Remove all coatings before cleaning.
		Contaminated surface	Clean surface with rasp or grinder to bright metal, and wipe with a safety solvent.
		Using an incorrect powder	Use TerraWeld® alloy metal material.