

WichiTech Industries **Weld-X** Thermocouple Spot Welder



The Weld-X is a portable capacitive discharge wire welding unit that allows thermocouple wires to be directly welded to metal surfaces for temperature sensing. This direct bonding avoids the need for clamps, brackets, straps, welded wells, etc. It provides a quick, simple, accurate, low cost means of attaching thermocouple sensing wires on a "when needed, where needed" basis. The Weld-X is equally effective in forming freestanding bead or butt welded thermocouple junctions. It takes only seconds to form standard thermocouple wire into a variety of attached or unattached sensors.

The Weld-X has the following features and advantages:

- ! **SIMPLE** - Thermocouple's are formed directly from standard wire types as either free-standing or surface mounted junctions.

- ! **EASY** - Installation does not require skilled operators or prepared surfaces.

- ! FAST - Pre-planning for thermocouple fabrication or attachment becomes minimal since welds can be quickly made for whenever and wherever they are needed.
- ! ECONOMICAL - Installation and material costs are low, allowing redundant junctions to be provided without incurring significant additional costs.
- ! ACCURATE - Welded surface junction provides an accurate thermocouple having a high speed response characteristic. Beads can be made to desired size.
- ! PORTABLE - Rechargeable battery and integral charger allows hundreds of welds to be made, independent of any outside power sources.
- ! ADJUSTABLE - Front panel power control provides adjustment for handling various thermocouple wire sizes and materials.
- ! HUMAN ENGINEERED - Visual and sonic indicators alert operator when unit has recycled following a weld, and new cycle can be initiated.
- ! CONTINUOUS USE - AC power supply allows unlimited bench use and automatically recharges internal battery.
- ! CONVENIENT - The Weld-X's 6 pound weight and small 6 inch by 6 inch by 3 inch case make it the most conveniently sized field unit available. This is in keeping with the WichiTech philosophy that field equipment should be small, light-weight, and truly portable.

"GO ANYWHERE" CAPABILITY

The small size and self-powered features of the Weld-X welder facilitate its use. Weighing only 6 pounds, and having a volume of only 1/16 of a cubic foot, it can be employed where working space is very limited. Up to 50 watt-seconds of welding energy is available for fusing wire up to #16 gauge. Efficient conversion circuitry allows hundreds of weld cycles on a single battery charge and unlimited use when AC powered. A simple wrap-around cover option provides field protection, offers a convenient carrying handle, and a place for cable and tools. Equally at home on the lab bench, in the shop, or in the field, the Weld-X has a true "when you want it, where you want it" capability.

ECONOMICAL

Making and installing thermocouple junctions using WichiTech's Weld-X is extremely economical. Junctions can be welded directly to the surface being sensed at the rate of 5 to 10 a minute. Little pre-preparation is required other than to assure a good electrical connection to the unit's ground contact and welding pliers. All installation materials are recoverable when the test run is completed by snipping the thermocouple wire at the surface.

In freestanding applications, the cost of the weld is the cost of the wire. Stock wire can be turned into thermocouples as needed and damaged units easily reworked or replaced.

EASY-TO-USE

Anyone can quickly become proficient in the use of the Weld-X. A mechanically satisfactory weld will be good electrically. The mechanical quality can be instantly tested with a tug of the welding pliers. A defective weld can be immediately redone. While sophisticated internally, the Weld-X provides the operator with a firing button and a simple on/off and energy level adjustment. When the internally stored welding energy has reached the level set by the operator, he is alerted by both a visual and sonic indicator. He generates the weld by holding the bared end of the thermocouple wire to the surface to be sensed, and pressing the firing button. For bead junctions, a non-stick block is used as the units grounded forming electrode.

WIRE TYPES AND BASE MATERIALS

The high arc temperatures generated by the Weld-X easily fuse all standard thermocouple materials including platinum and tungsten.. Wires can be welded in pairs in gages of #20 or finer, and individually for gages as heavy as # 16.

Welded surface connections to ferrous materials are generally the strongest and most easily made. However, very satisfactory direct attachments can be made to aluminum, titanium, copper, and to zinc based and other alloys.

THE WELD-X IS SUITABLE FOR:

- § Field use, where small size and ease of handling provides the flexibility needed for such environments.
- § Shop use, where the size or shape of a piece to be treated dictates that the temperature sensors be directly installed on the work. Considerable time and energy savings can be made when the temperature is accurately known.
- § Lab and pilot run time, where the ability to immediately install a thermocouple junction anywhere makes quick changes and additions to experimental or test set-ups easy. Butt welds between thermocouple wires, providing freestanding junctions for general temperature tests are easily produced.

SPECIFICATIONS

Size - 3 1/4" High, 6" Wide, 6 1/4' Deep

Weight - 6 1/4 pounds

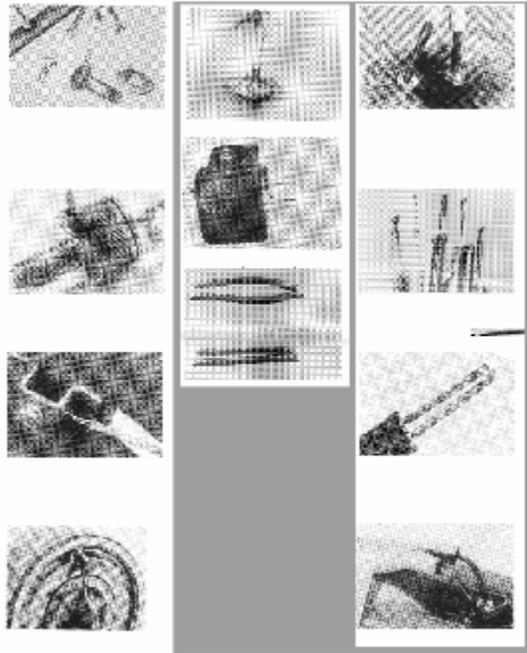
Stored Weld Energy - 5 to 50 Watt seconds

Wire Gauge - Welds all standard wire types between 16 and 30 gauge.

Cycle Time - Can perform 5 to 10 welds per minute, depending on the energy setting.

Controls - Provides energy adjustment control and visual and audio indication of weld charge cycle completion.

Power - Will operate from either AC lines or self-charging internal battery. Will perform several hundred welds on charged battery. 120 VAC 60 Hz line power (220 VAC 50 Hz optional).



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