WIRE WIZARD® WELDING PRODUCTS

WELDERS CAN FEEL, HEAR & SEE THE DIFFERENCE!

POWERBALL® TORCH PRODUCTS

HIGH CONDUCTIVITY CONSOLIDATED COPPER WELDING CABLES

ENERGY EFFICIENT POWER CABLES
WITH ENHANCED CONDUCTIVITY

PowerBall® Welding Cables
Cables available in 2/0, 3/0 or 4/0 (rated for up to 600 V)

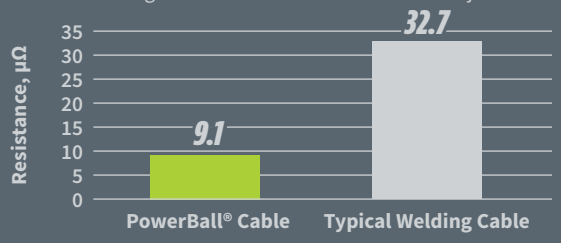
PowerBall® Welding Cables feature an energy efficient design with enhanced conductivity. Cable lug connections commonly used in MIG welding are often overlooked, but can offer significant improvements in both weld quality and electrical efficiency when the connections are optimized. All copper connection points with consolidated copper lug joints used in PowerBall® Cables provide superior conductivity, with over **3X less electrical resistance** at the cable joints. Stronger and more conductive cable joints provide **improved electrical stability**, **reduced heat build-up and increased service life**. Patent pending design.

PROUDLY MADE

- Consolidated copper connection at the cable lug joints increases energy efficiency
- Reduces the electrical resistance from 20 – 50+ micro-ohms (in traditional crimped cables), to only 7 – 10 micro-ohms (see chart)
- Stronger joints result in consistent performance throughout an extended cable service life, as well as enhanced durability
- Outer jacket resists spatter, abrasion, cuts, grease and oils
- Available in 2/0, 3/0 or 4/0 in any required length
- Rated for 600V (-50°C+105°C), SAE J1127 and RoHS compliant

72% LESS ELECTRICAL RESISTANCE!

ELECTRICAL RESISTANCE COMPARISON
Average resistance measurement at cable joints



THREE COPPER LUG OPTIONS AVAILABLE


STRAIGHT


90°


60°

COMPLETE THE PERFECT CIRCUIT
WITH WIRE WIZARD® MAGNETIC GROUNDING CLAMPS AND POWERBALL® TORCH PRODUCTS

PowerBall® Welding Cables, along with the **PowerBall® Torch Consumables** and new **Wire Wizard® Magnetic Grounding Clamps**, can greatly improve the electrical efficiency of the secondary loop in MIG welding. The secondary loop of the welding system consists of the power supply, ground cable, ground cable clamp, welding arc, wire, all welding gun components, wire drive motor assembly and cable from wire feeder back to the power supply.

Wire Wizard® Magnetic Grounding Clamps feature a **copper grounding point** for optimum conductivity. A dial turns the powerful magnet on to create an instant ground to flat or rounded surfaces. Simply turn the dial back to unclamp. Also eliminates the need for tacking on tabs in large sheet welding or pipe jobs.

WWGC-M-300
500 A/300 lb Magnetic Grounding Clamp

FAMILY OWNED AMERICAN MADE

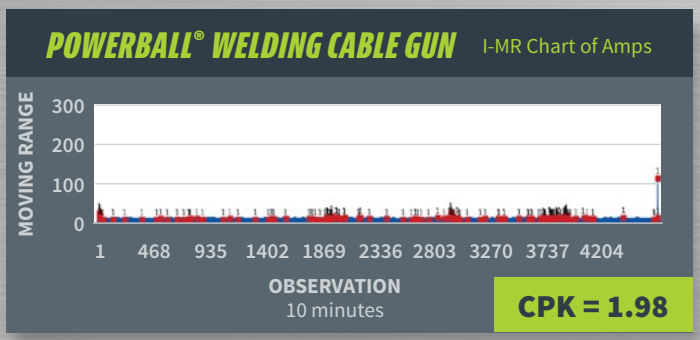
ELCo Enterprises, Inc. • Jackson, Michigan USA
517.782.8040 • *sales@wire-wizard.com*

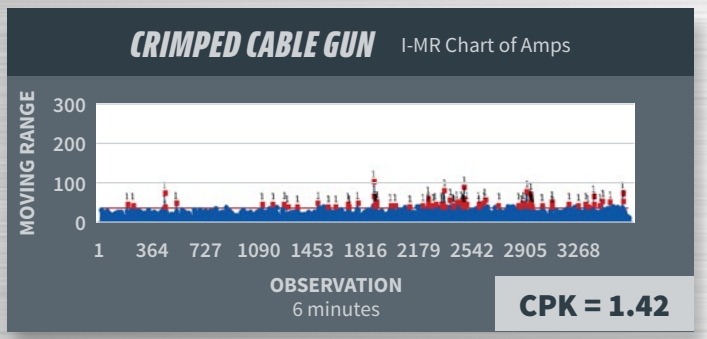
wire-wizard.com

POWERBALL® CABLE PERFORMANCE TESTING

Several PowerBall® Welding Cables with consolidated copper lug joints were installed on a controlled weld cell and tested under high current loads. Near 100 full 100% duty cycles (10 min. each) welds were produced in the current range of 250-450 A. The weld characteristics, welding gun temperature and cable-to-lug joint resistance were monitored and recorded in real time. Tests were conducted with a 75/25 and 90/10 Ar/CO_2 shielding gas mixture, using 0.045" steel wire. The tests revealed significant improvements.

The process capability (Cpk) significantly improved when compared to previous studies using crimped cable-to-lug joints under similar weld parameters. In one study, Cpk was improved from an already good value for a crimped joint (1.42) to even better value (1.98). The welding gun cable joints, also manufactured with consolidated copper, resulted in a **torch handle temperature reduction of more than 20°F** when compared to gun handles with crimped cable joints (as tested on the PowerBall® MIG Welding Gun).





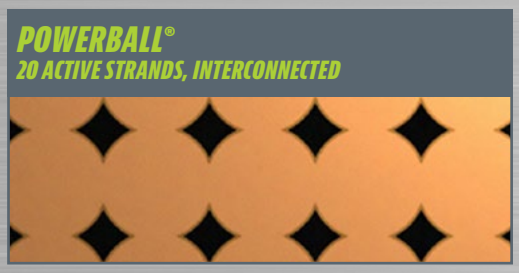
PROCESS IMPROVEMENT CHARACTERISTICS

CRIMPED VS. ULTRASONICALLY WELDED JOINTS

Analysis also showed the **consolidated copper power lug joints maintained their original resistance values during the entire testing process, with no increase in overall power cable resistance** (see chart, bottom right). On the power supply side, the cable joint exhibited no indication of excessive heating, while retaining the original appearance and resistance values.

METALLOGRAPHIC COMPARISON

More Strands & Fused Wires = Better Current Flow



CONSISTENT PERFORMANCE THROUGHOUT SERVICE LIFE!