

WELDING SOLUTIONS

Leading the Way in Welding Productivity ... Across the Globe

Choosing the right partner brings many longterm rewards. By providing integrated solutions, the ITW Welding companies are uniquely able to provide our partner customers with several vital benefits, including:

Trusted partnership

Your goals are our goals. Your success is our success. We are your trusted partner who stands ready to help you achieve your welding and fabrication objectives.

Greater productivity

Leveraging your investment in people and equipment is one key to sustaining success. Let our people and products help you maximize your productivity.

Cost reduction

In today's global arena, cost containment is essential for long-term success. Our people and products will help you reduce costs and remain competitive.

Higher quality

We can show you ways to reduce mistakes and defects in your weld and fabrication manufacturing operation, because the cost of poor quality can be significant.

Innovation

At the core of all of our products is innovation. Our designs deliver tangible benefits not found in competing products.



Standardization

We are located where you are. Our global reach enables us to support you in your goal to standardize your manufacturing processes around the world.

Safety

Our products help you create a safe work environment, from personal protective equipment to improved air quality.

Single-source solution

With our power sources, filler metals, guns and personal protective equipment working together through innovative technology, the result is a total welding solution from a single source you can rely on.





Countless capabilities. Trusted advice. Integrated solutions.

Across the globe, heavy equipment manufacturers place their trust in the ITW Welding companies. Miller, Hobart, Bernard and Tregaskiss all work together to create a comprehensive welding solution. Whatever your need, look to us. Together, we'll develop a worldclass, integrated solution to help you achieve your manufacturing goals.

ITW Welding





Integrated Automation Welding Solutions

Working as your partner, we'll couple the advanced Miller® technology found in our welding power sources with some of the most advanced automation equipment on the market — dual robotic systems, welding and heavy plate robotics and digital monitoring. For a complete solution, add high-quality Hobart® filler metal and Tregaskiss[™] water-cooled MIG guns.

Auto-Axcess[®] Multi-MIG[®] Robotic Systems

Reduce the complexity of pulsed MIG robotic welding with the digital controls and the robotic interface of the Auto-Axcess inverter-based welding platform. Through software-based programs, these multi-MIG systems bring the many benefits of digital controls to manufacturers who use either an analog or digital robot platform.

- Accu-Pulse[®] patented pulsed MIG process providing precise arc control while being highly adaptive and forgiving
- Auto-Line[™] power management technology for consistent welding performance, even during fluctuations in primary power
- Fan-On-Demand[™] Cooling System conserves energy, runs only when needed
- Auto-CAL patented automatic calibration feature for fast setup
- Available in 300 and 450 amp versions

Compatible with most popular robot brands

Auto-Axcess[®] E with Insight[™]

The Auto-Axcess E combines the features and capabilities of the standard Auto-Axcess with the powerful Insight monitoring system. Insight can help detect potential defects as well as provide critical productivity information for your weld cell.

- **Monitor** current, voltage, wire-feed speed, gas flow (optional) and duration on a weld-by-weld basis
- **Improve the welding process**, reduce defects and generally make your automation cell as productive as possible
- Track quality- and productivity-related information via Insight Reporter

Compatible with most popular robot brands

Hobart® Filler Metal

Hobart | Matrix[™] metal-cored wire delivers unrivaled performance in high-volume, robotic welding applications, resulting in unsurpassed arc starting and wire feeding, as well as excellent seam tracking and touch sensing.

- Superior feedability reduces replacement costs for parts/accessories
- Silicon control technology reduces post-weld cleanup
- **High deposition rates** improves productivity compared to solid wires
- Consistent weld beads and reliable crack resistance

Tregaskiss[™] TOUGH GUN[™] Robotic Water-Cooled MIG Gun

With its durable design, this water-cooled, 600-amp robotic MIG gun with aluminum-armored neck maximizes high-volume production when welding thick plate or running prolonged duty cycles within a robotic cell.

- Stainless steel docking body stands up to the rigors of robotic production
- Independently swiveling conduit rigidly supports the liner for smooth wire feeding
- Maintenance-friendly design easily accessible front housing and quick-change fittings

Tregaskiss[™] TOUGH GUN[™] TT3 Reamer

Introducing the next evolution of the TOUGH GUN Reamer from Tregaskiss. A number of improvements make this new reamer more reliable, faster and easier to maintain than ever before:

- Sprayer reservoir relocated to opposite side of unit an additional safeguard against overfilling/leakage onto internal electronics
- **Faster troubleshooting** plug-and-play replacement parts with smart-keyed connections and a simplified sprayer system make in-cell troubleshooting quick
- Easier to maintain simplification of internal wiring via a centralized terminal strip
- **More value** the sprayer now comes standard, and the new cutter blades offer enhanced durability at a much lower price

Rugged, Reliable Products with Innovative Features Drive Semi-automatic Welding Productivity and Quality

We understand the challenges and concerns of heavy equipment manufacturers. First-time quality leads to lower overall costs and increased throughput. Our goal is to help your operators make that happen for every part you make, in every phase of your semi-automatic welding processes.

Axcess[®] Multi-MIG[®] Welding Systems

The Axcess welding system is the premier welding solution for heavy equipment manufacturers. This proven design provides the capability and flexibility to meet a broad variety of manufacturing needs from standard MIG through the widely acclaimed Accu-Pulse® process. Its Multi-MIG process capability provides customized pulse welding technologies that can improve finished product quality while shortening production cycle times.

- Vast library of programs cover a wide range of processes, wire types/sizes and gas types
- Patented Accu-Pulse process is the standard for production pulse welding and is highly adaptive and forgiving — allows for precise control of the pulse arc and provides optimum molten puddle control
- Increase deposition rates 20-25% with Accu-Pulse
- Available in 300 and 450 amp versions

Axcess[®] E with Insight[™]

Add the power of the Insight weld monitoring system to the proven benefits of the Axcess Multi-MIG welding system. Don't just monitor production data; use Insight to provide information that creates the knowledge to improve your welding operation on many levels. When combined with the power of Ethernet connectivity, Axcess E with Insight provides a comprehensive welding information system.

- · Govern the fabrication process via a visual HMI for the operator
- **Detect potential defects** by comparing welds to upper and lower limits for five different criteria, alerting operator to welds outside of those ranges
- Detect under/over welding
- Monitor productivity information like arc-on time, wire consumed, parts completed and more
- Track reasons for weld cell downtime
- Insight Reporter[™] provides preconfigured reports focused on productivity and quality
- Upgrade existing Axcess systems to Axcess E capabilities

Deltaweld[®] 602/852 Welding System with 70 Series Bench Feeder

These simple MIG-only machines provide rock-solid reliability, exceptional value and excellent power efficiency. Combined with the 70 Series wire feeder, these are the MIG solutions of choice for the most demanding industrial welding market, providing 450 and 650 amps respectively.

- Simple, durable and rugged
- Fan-on-Demand[™] cooling conserves electricity; runs only when needed
- **Digital meters** ensure repeatability through preset welding parameters and easy monitoring of the voltage and amperage
- Three feeder types available standard, digital and deluxe
- Single or dual feeder options available

Invision[™] 450 MPa

This MIG and Pulsed MIG inverter machine delivers 450 amps output at 100 percent duty cycle. With more robust pulsing power and higher amp output, it's ideal for the thick materials and long weldments found in heavy equipment fabrication.

- Pulsed MIG programs designed with built-in, synergic-capable pulsed MIG programs
- Pulsed programs for .052 in. and 1/16 in. wires
- **115 V auxiliary power** adds flexibility when using hand tools or water-cooled systems
- Optimized for 74 MPa plus feeders

Semi-automatic Welding Solutions

70 Series Swingarc[™] Wire Feeder

The 70 Series Swingarc boom-mounted wire feeders add flexibility and efficiency to any weld station dealing with large weldments, or wherever greater operator mobility is required.

- Multiple options choose 8-, 12- or 16-foot lengths to maximize output
- Unique counterbalance design — easy to position the boom exactly where it's needed
- In-boom cable routing helps get cables off the floor to extend cable life and improve operator safety

Induction Heat Treatment Systems

Induction heating offers many key advantages for heavy equipment manufacturing, maintenance and repair. Unlike other methods of heating, the Pro-Heat has the ability to control heating rates as well as desired target temperatures during the weld process. As a result, the joint achieves the required strength and hardness, and risks of weld cracking are minimized when welding on very heavy steel components.

- **Faster cycle times** Induction heating brings the steel to temperature in minutes rather than hours far faster than with propane or resistive heating
- Maintains the desired temperature without having to stop welding to add more heat (as with flame heating)
- Provides uniform heating throughout the entire weld zone
- Safe and cost efficient Eliminate operator exposure to open flames, explosive gases and hot heating elements involved with other methods
- Reduced labor time, less rework and lower gas usage saves operating costs
- **Better weld quality** Welds made with induction heating consistently achieve their required strength and hardness, minimizing the risk of hydrogen cracking

For more details on induction heating, contact ITW Welding Products BV(DE) at +31 (0) 186-641-444 or email info@itw-welding.com.

Guns, Consumables and Parts

Bernard offers a wide selection of semi-automatic welding guns and consumables designed to maximize your welding productivity and improve weld quality. Bernard makes it easy to get your hands on a custom configured semi-automatic MIG gun that fits both your welding application and your team's welding style. Build your ideal gun online (*Euro style feeder connection option available*) using our easy-to-use gun configurator located at **BernardWelds.com/ConfigureMyGun**.

Bernard[™] Q-Gun[™] and S-Gun[™] MIG Guns (air-cooled)

Bernard Q-Gun MIG guns are designed from the ground up to solve problems and maximize productivity. Bernard S-Gun MIG guns feature the same comfortable curved handles as those on the Q-Gun Series but have a different unicable comprised of steel monocoils. Both gun lines are customizable to your specifications.

- Lightweight, comfortable handle and easy-to-change trigger options
- Necks available in fixed or rotatable models and in several lengths to improve operator comfort
- **Durable back-end strain relief** easily interchangeable power pins and trigger leads simplify maintenance
- Compatible with Centerfire[™] and Quik Tip[™] consumables

Bernard[™] T-Gun[™] Semi-Automatic Air-Cooled and Water-Cooled MIG Guns

(formerly Tregaskiss[™] TOUGH GUN[™] Semi-Automatic Series)

This straight handle MIG gun line is designed for durability in the harshest, most demanding industrial welding environments.

- Stainless steel armored necks aircraft grade aluminum withstands abuse and offers outstanding heat dissipation — all water-cooled neck joints are silver brazed and 100% leak tested
- Tregaskiss TOUGH LOCK[™] Consumable system includes contact tips, nozzles and retaining heads designed to run cooler, last longer and provide consistent welding performance
- Lifetime warranty on handle and switches

Bernard[™] W-Gun[™] MIG Gun (water-cooled)

- Flexible cable assembly with reinforced synthetic rubber hoses prevents water leakage, increases water flow and reduces gas leakage
- Heavy-duty, water-cooled necks in multiple lengths and bend configurations improve joint accessibility and operator comfort
- Uniquely designed housing with water cable strain relief reduces chance of kinking
- Compatible with Centerfire and Quik Tip contact tips in wire sizes from .023 in. (0.6 mm) to 3/32 in. (2.4 mm)

Bernard[™] Centerfire[™] Consumable System

- · "Drop-In" contact tips are non-threaded and stay in place by handtightening the nozzle, allowing for quick changeover after burnbacks no tools required for replacement
- · Centerfire nozzles feature built-in spatter shield for smoother, less turbulent gas flow
- Threaded nozzle holds tip fixed at .25 in. or .125 in. recess, flush or .125 in. stick out

Bernard[™] Quik Tip[™] Consumables

- Threaded taper lock increases tip life by providing excellent heat transfer and electrical conductivity
- Require only a quick twist to install or change over
- Gas diffusers have positive stops to secure each Quik Tip contact tip in a fixed position for superior repeatability and consistent, quality welds

Tregaskiss[™] TOUGH LOCK[™] Consumable System

Achieve the improved performance and reliability you need by making consumable changes less frequently.

- Dual-lead thread design allows tips to be rotated 180° to a new wear position for extended tip life
- Greater surface area between the high-conductivity/high-tolerance contact tip, retaining head and gooseneck ensures positive electrical conductivity, cooler operation and extended life
- Dual taper technology on retaining heads locks the front-end consumables from tip to neck to prevent overheating

Tregaskiss[™] Nozzles

- · Brass insert in nozzles maintains Inner diameter and prevents rocking of the nozzle
- High-temperature-resistant fiberglass insulator electrically insulates the nozzle from the diffuser to help extend nozzle life

Tregaskiss[™] QUICK LOAD[™] Liners

These revolutionary front-loading liners from Tregasklss require half the time and effort to replace compared to conventional liners.

- **Two-piece design** has the retainer installed inside the power pin on first use there's no need to cut and waste wire
- Eliminates the need to climb up to change liners in semi-automatic guns connected to boom-mounted feeders

Tregaskiss[™] QUICK LOAD[™] Liner AutoLength[™] System

Short liners are a common root cause of poor wire feeding. A short liner also does not have a chance of properly seating in the retaining head often resulting in "bird-nesting" of the welding wire or premature contact tip failure and wear. A system upgrade to the QUICK LOAD Liner AutoLength System can help to minimize downtime, improve wire feeding and decrease weld quality issues commonly associated with liners that are too short.

How It Works

- Housed inside the power pin, this spring-loaded module applies constant pressure on the liner, keeping it seated properly in the retaining head
- Allows for up to 1-inch (2.54 cm) forgiveness if the liner is too short due to incorrect trimming or twisting of the gun cable during welding
- Designed for use with QUICK LOAD liners
- Available for Tregaskiss TOUGH GUN[™] air-cooled robotic and automatic MIG welding guns, as well as Bernard T-Gun[™] semi-automatic series (formerly Tregaskiss TOUGH GUN semi-automatic series)

Capture All the Advantages of Metal-Cored Wire

In many high-strength industrial applications, metal-cored wire can improve weld quality, reduce non-value-added activities and increase productivity — especially compared to solid wires. Other advantages include:

- Increased deposition rates and faster travel speeds with little to no spatter
- Reductions in post-weld cleanup time and labor costs
- Greater tolerance to variations in the welding process, which cuts the costs of part rejection and rework
- Low diffusible hydrogen reduces the risk of hydrogen cracking
- Lowers the heat input required, reducing part distortion or eliminating pre-weld operations

Hobart[®] FabCOR[®] 86R

This gas-shielded wire is ideal when the application calls for flat or horizontal welds on carbon steel. Its higher deoxidization elements provide it with more tolerance for welding on steel with mill scale.

- Offers a low diffusible hydrogen weld deposit to help mitigate cracking
- Low spatter levels minimize cleanup

Semi-automatic Welding Solutions

Hobart[®] FabCOR[®] F6

Hobart FabCOR F6 metal-cored wire is specifically designed

for welding on galvanized or thin-gauge steels, and is optimal

for automated and mechanized applications. The wire provides higher deposition rates and faster travel speeds than solid wires to help increase productivity on singlepass, flat and horizontal welding applications.

Hobart[®] Edge

The superior "wetting" characteristics of this wire produce an aesthetically pleasing weld profile with more uniform weld fusion and penetration.

- Silicon control technology pulls silicon out of the toes of the weld to expedite post weld cleanup
- Significantly less spatter, which can reduce or eliminate post-weld cleanup time
- High deposition rates and travel speed increase productivity

Flux-Cored Wire

Hobart[®] Excel Arc 71[™] Flux-Cored Wire

Featuring excellent arc stability, easy slag removal and good bead shape, this wire can be used both in-position and out-of-position when parts are not easily configured for flat or horizontal welding.

- Low hydrogen weld deposit to help resist cracking
- **Best-in-class operability**, slag removal and bead shape on both single- and multi-pass applications
- · Low spatter levels to expedite post-weld cleanup

Hobart[®] FabCO[®] 85

Designed for use where deposit quality and properties are of a first concern, FabCO 85 is more crack-resistant than the acid slag types of wires because the weld metal hydrogens are very low.

- Ideal for single- and multiple-pass applications with CO₂ or argon/CO₂ gas shielding
- Excellent low temperature impact strengths

Solutions for a Cleaner, Healthier Working Environment

An investment in a healthier work environment helps attract and retain skilled workers, quickly improves productivity and helps comply with regulations. You'll breathe easier when you select reliable solutions designed expressly for the unique needs of the industrial welding environment.

Create an environmental solution from the ITW Welding companies with all the high quality products you'll need:

- Reduced emissions metal-cored wire
- Source-capture fume guns
- Personal air-purifying headgear

Metalloy[®] 70X

This metal-cored wire from Hobart has lower fume generation rates than other metal-cored wires. Offering the lowest spatter level of all the Tri-Mark metal-cored wires, this wire improves the workplace environment.

- Reduces welding emissions for improved operator comfort
- Excellent arc characteristics
- Better wetting action than solid wire, which helps minimize cold lap

Bernard[™] Fume Extraction Guns

The Bernard Clean Air[™] Series and Bernard FILTAIR[®] Series fume extraction guns help to create an efficient environment with reduced smoke and fumes — even on harsh welding applications.

- Adjustable to maximize suction without affecting shielding gas
- Compatible with Centerfire[™] consumables
- Chrome parts to resist spatter adhesion
- Bernard FILTAIR Series 300 and 400 amp models with smaller, lightweight handles
- Bernard Clean Air Series 400 and 600 amp heavy-duty models

Powered Air-Purifying Respirator (PAPR)

• Load-bearing shoulder straps reduce strain on lower back

· Auto-darkening lens technology with digital controls

PAPR provides personalized respiratory protection and a clean-air breathing zone for individual welding operators.

• Lightweight design to reduce fatigue

Maximize Operator Protection and Comfort

Miller is redefining welder protection with products that provide optimal fit, comfort, performance and style resulting in safer, more productive work environments. That's the Arc Armor[®] difference.

CoolBand[™] II and CoolBelt[™] Heat Stress Helmet Systems

Don't let heat exhaustion cause unnecessary injuries on the job let the CoolBand II or CoolBelt lower temperatures underneath the welding helmet. Easily integrated into most Miller® helmets, both models provide air movement over the face and head, removing stagnant air and decreasing lens fog. CoolBand II headgear reduces temperatures up to 8°F compared to the surrounding workplace air, while the CoolBelt belt-mounted device delivers the maximum air flow performance up to a 17°F reduction under the hood.

- Keeps employees cool on the job
- Reduces fatigue
- Increases worker productivity

CoolBelt

Environmental & Safety Solutions

Titanium Series[™] Helmets

Miller Titanium Series helmets exceed demands of industrial welding environments.

- Auto-darkening digital lens technology with 3-year warranty
- Convenient quick release front cover lens for easy changes
- Excellent skin coverage and lightweight for extended wear
- Reflects radiant heat to keep the user cool
- Aluminum heat shield protects the lens in high amperage applications
- Integrated grinding shield or external grind mode button
- Five models available: 1600, 1600i, 7300, 9400, 9400i

Low-profile respirator — ideal for use under welding helmets.

- Low-profile design maximizes field of vision
- Pleated filters ease breathing
- Replaceable P100 filters

Countless capabilities. Trusted advice. Integrated solutions.

Meet the challenges of heavy equipment welding quality and productivity with the right partner — the ITW Welding companies. Miller, Hobart, Bernard and Tregaskiss work together to create a comprehensive welding solution for your unique applications. Across the globe, ITW Welding companies will bring countless capabilities, trusted advice and integrated solutions to help you achieve your manufacturing goals.

ITW Welding

MillerWelds.com

HobartBrothers.com