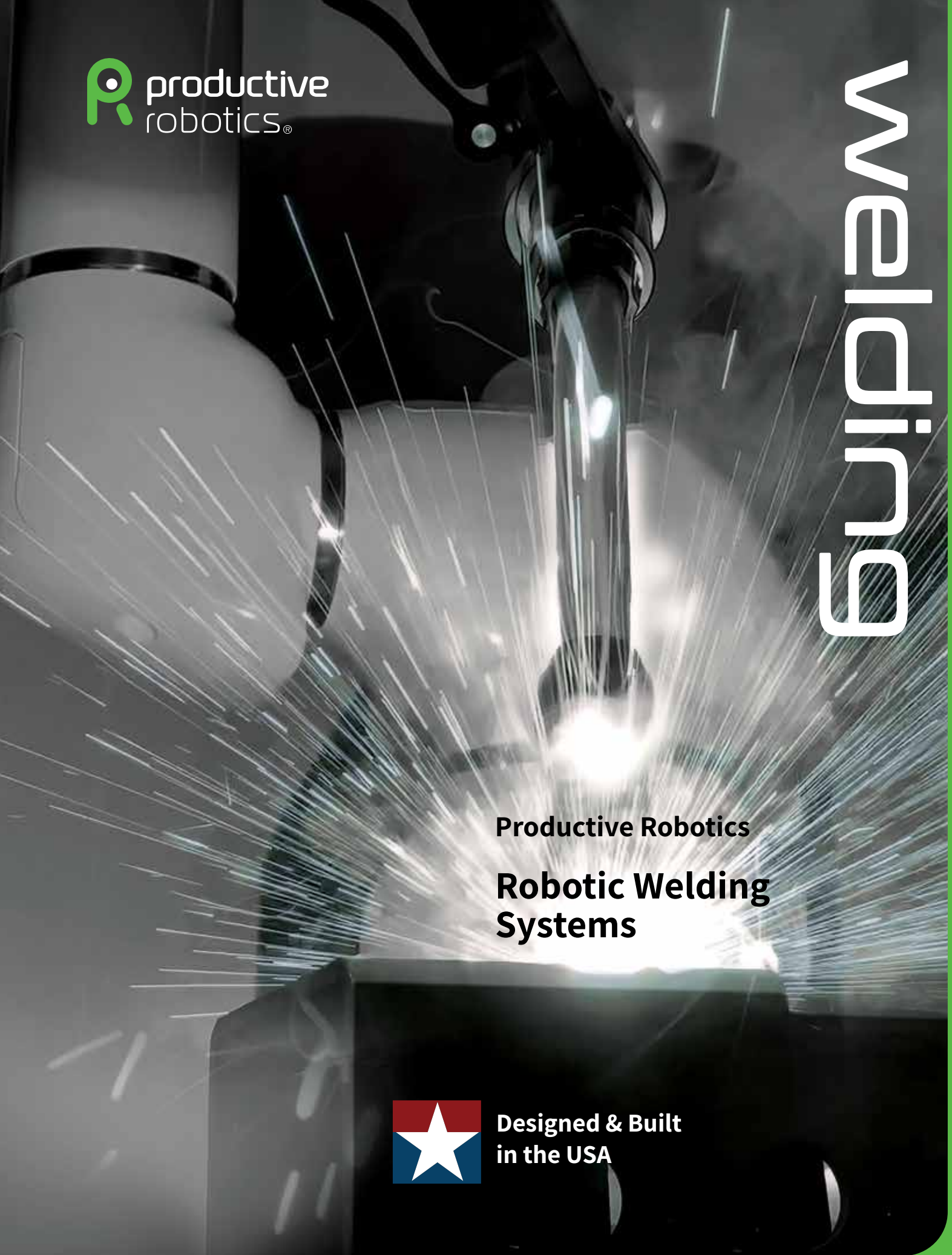

productive
robotics®
welding
Productive Robotics
Robotic Welding Systems
Designed & Built in the USA

BLAZE WELDING COBOTS. THE ULTIMATE BUSINESS SOLUTION FOR:

- 2X—5X PRODUCTION INCREASE
- LABOR CHALLENGES
- STRONGER TEAMS
- COST CONTROL
- TIME LOST TO REWORK

2X—5X
Production Increase Guaranteed
productiverobotics.com/blaze-guarantee

PRODUCTION WELDING JOBS CAN BE DONE MANY TIMES FASTER THAN MANUAL WELDING

TEACH BLAZE A JOB IN LESS TIME THAN IT TAKES TO DO ONCE MANUALLY

No Programming

- Productive Robotics' proven "No Programming" software. Blaze learns by showing it where to weld.
- Zero robot experience needed
- Little training required
- All weld details set by selecting recipes on a professional touch tablet (not a tiny cell phone)
- No techie jargon

Consistency & Quality

- 100% consistent, clean, precise welds
- Eliminate or reduce Post Weld grinding and cleanup
- Zero operator fatigue or monotony
- Perfect weld repeatability every time

Simplicity

- Blaze learns when you show it
- No robot experience required
- Fast training (teach Blaze your first weld in minutes)

Flexibility

- Fast short run changeovers
- No reprogramming on repeat jobs
- High Mix or Low Mix
- Short Run or Long Runs
- Use your existing fixtures
- 7-Axis Maneuverability:
  - More welds without re-fixturing
  - Maneuver around clamping and fixtures
- Unlimited weld types and styles in a single run

Watch Customer Videos
productiverobotics.com/blaze-success

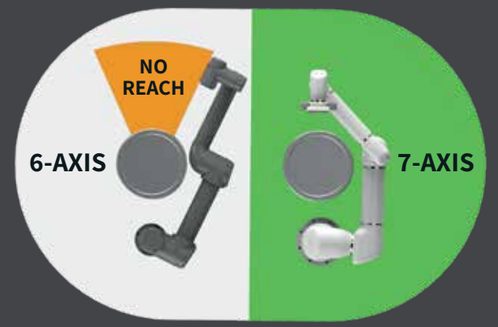
7-AXIS TORCH POSITIONING

STANDARD ON ALL BLAZE COBOTS. SAVE TIME & MONEY WITH FEWER SETUPS.

Get more weldments done in a single setup with 7-Axis, versus having to re-fixture with a 6-Axis robot. Only a 7-Axis robot can reach around all sides of fixtures and workpiece obstacles without restriction.

Watch video of the 7-Axis Advantage

productiverobotics.com/blaze-7-axis



AUTOMATE ANY SIZE JOB WITH THE WORLD'S LARGEST, MOST COMPREHENSIVE LINE OF COBOT WELDERS.

ZERO PROGRAMMING. NO THIRD PARTY INTEGRATION NEEDED.

ALL DESIGNED & BUILT IN AMERICA.

Productive Robotics is the leading American cobot manufacturer and the first to eliminate programming with the introduction of teach-by-doing technology in 2017. All hardware and software is designed & built in the USA. No retrofits. No patches.

TURNKEY. UPGRADEABLE ALL THE WAY.

BLAZE & BLAZE MAX COBOT WELDING FOR YOUR TABLE, YOUR WELDER.

BLAZE WORKS WITH YOUR CURRENT WELDING SETUP:
COMPATIBLE WITH MILLER, LINCOLN AND MOST OTHERS.

THE ULTIMATE SUPERPOWER TOOL FOR WELDERS. READY TO WORK OUT OF THE BOX.

BLAZE COBOT SIZE OPTIONS
(Dimensions include MIG Torch)

Blaze: 1550 mm / 61" reach

Blaze Max: 2159 mm / 85" extreme reach

INCLUDED

No Programming Teach Tablet

IP 61 Sealed Case Control Computer

BLAZE LF
AUTOMATED WELDING PACKAGE

BLAZE WELDING ROBOT, TABLE AND WELDER

Blaze LF is designed for ease and convenience for automation of both large and small size weldments. The 8 ft long table provides unrestricted access on all sides for placing large objects and easily loading and unloading components.

The 7-Axis Blaze Welding cobot features an unlimited library of welding recipes, “No Programming”, drag and drop tablet controller, and complete control and customization of all welding parameters. Any job is easily learned in minutes, from simple to complex paths, with varying weld recipes and weld types.

BLAZE COBOT SIZE OPTIONS
(Dimensions include MIG Torch)

BLAZE: 1550 mm / 61" reach
BLAZE MAX: 2159 mm / 85" extreme reach

No Programming

All welding details and recipes are set on the Tablet Controller with Productive Robotics’ famous drag and drop display. Productive Robotics’ “No Programming” system allows anyone, regardless of experience, to teach Blaze to weld.

Unlimited Weld Complexity

An unlimited library of welding recipes allows complete control and customization of all welding parameters, including: material type, weld speed, wire speed, gas flow control, weld pattern and more. Simply select your desired recipe, or customize the recipe as you choose.

Large Format Table

Large 4 ft x 8 ft welding table with unrestricted access allows multiple simultaneous weld fixture setups, or large weldments. **Alternate table sizes available.**

Welder Options

AUTO CONTINUUM 350 Top of the line welding package with 100% duty cycle.

OTC WELBEE II High performance power source with advanced, user-friendly features.

The 7-Axis Advantage

Like a human arm, seven joints allows the operator to access all sides of a work setup without restriction.

BLAZE DUO DUAL STATION HIGH VOLUME MIG WELDING

With automated doors separating two identical weld stations, Blaze Duo minimizes downtime by allowing operators to safely set up one job while the cobot is welding another. With Blaze Vision monitors, you can view direct video monitoring of welding, in progress.

The 7-Axis Blaze Welding cobot features an unlimited library of welding recipes, “No Programming”, drag and drop tablet controller, and complete control and customization of all welding parameters. Any job is easily learned in minutes, from simple to complex paths, with varying weld recipes and weld types.

Blaze Vision™ Live Video Monitoring

Direct video monitoring of welding, in progress, displayed on the Blaze Vision monitor. Welding visors, goggles, or welding screens are not required.

Blaze Welding Robot

Productive Robotics proven collaborative robot provides unmatched reliability, reach and maneuverability that only a 7-Axis robot can provide.

Welder Options

AUTO CONTINUUM 350
Top of the line welding package with 100% duty cycle.

OTC WELBEE II
High performance power source with advanced, user-friendly features.

Unlimited Weld Complexity

Complete control and customization of all welding parameters, including: material type, weld speed, wire speed, gas flow control, weld pattern and more.

Filtered Fume Extraction

Integrated fume extraction allows the Blaze system to operate in most any environment.

Unrestricted Access

Double doors at each weld station open fully to allow complete and unrestricted access to the large 4 ft x 8 ft weld table and all setups.

LED Lighting

Built in bright LED lighting provides perfect illumination for setting up jobs and fixtures.

BLAZE MOBILE
BRING ROBOTIC WELDING TO YOUR LARGE PARTS

MOBILE MEETS **VERSATILE**

When your parts are too big to move to the welder, Blaze Mobile moves to them. Mounted on a rolling mobile frame with heavy-duty locking wheels, this cobot is made to move.

Choose the Blaze™ MAX cobot for an impressive 85 inch reach (including the MIG torch), to access more welding points with precise results - potentially eliminating big rotating and tilting modules. Also available with a 61 inch reach.

7-Axis Maneuvering

An extra axis provides infinite positioning that goes beyond the ability of 6-axis robots. Easily reach around all sides of part features and inside tight access areas with unmatched agility and maneuverability.

Blaze Mobile Package Includes:

- Blaze™ or Blaze™ MAX collaborative welding robot (61” or 85” reach)
- Auto Continuum 350 Welder or OTC Welbee II
  (Available without, if you require using your own welder.)
- Sealed case control computer
- Mobile frame with heavy-duty wheels
- No programming teach tablet

BLAZE COBOT SIZE OPTIONS
(Dimensions include MIG Torch)

BLAZE: 1550 mm / 61" reach
BLAZE MAX: 2159 mm / 85" extreme reach

BLAZE LASER WELDING

WELD UP TO **4X FASTER** THAN TIG

Blaze with LightWELD® Laser welds dissimilar metals of different thicknesses with ease and creates aesthetic high-strength joints with minimal or no consumable wire. The low heat input and extensive material and thickness capabilities increase productivity, repeatability, and improve weld quality for operators of all skill levels.

Fast and Easy Setup

Built-in factory presets for welding and cleaning reduce learning curves; new welders can be trained quickly and experienced welders realize an immediate increase to productivity.

Highly Productive

High-speed welding that is 4X faster than TIG, with simple material preparation and minimal post-finishing, plus wobble welding and wire feed options for consistent high-quality results.

Highly Capable

Easily weld and clean thick, thin and reflective metals with low heat input from < .040” (1.0mm) up to 1/4” (6.35mm) with minimal part distortion, improved visual appearance and increased overall part quality.

“Blaze Laser lets us replace thousands of spot welds with continuous laser welded seams. This is both faster and completely seals the parts instead of just connecting them.”

—Associated American Industries

Dramatically Faster Welding. Exceptionally Easy to Use.

Increased productivity without secondary machining or straightening deformed parts.

Minimal part setup and post-processing grinding or polishing.

Pre- and post-weld cleaning with up to 15 mm cleaning path (optional).

Consistent, high quality welding of thick, thin and reflective metals without distortion, deformation, undercut or burn-through.

- Laser weld materials up to 1/4 in (6.35 mm) including steel, aluminum, copper, titanium, and nickel alloys
- Weld dissimilar metal parts of different thicknesses
- High-speed welding across a wide range of materials and thicknesses

Weld Cleaning (optional)

Single System Welding and Cleaning

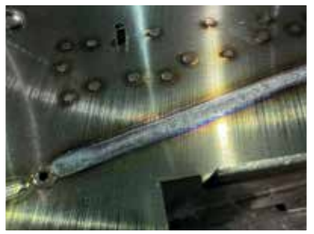
- Blaze with LightWELD XC and LightWELD XR can switch from welding to cleaning in just seconds
- Specially designed welding and cleaning nozzle tips for any joint configuration
- Increased productivity using single system for multiple fabrication processes
- Simply loosen the collet and insert a welding or cleaning nozzle, select the appropriate mode and the system is ready to clean or weld

Pre-Weld Cleaning

- Blaze with LightWELD XC and LightWELD XR provides pre-weld cleaning for stronger, higher-quality welds
- Any contaminants can enter the weld pool and compromise weld integrity
- Pulsed cleaning power up to 2500 W peak power evaporates undesired surface elements
- Fast and effective removal of contaminants such as oxides, rust, paint, oil, or grease from surface without the use of chemicals or abrasives

Post-Weld Cleaning

- Blaze with LightWELD XC and LightWELD XR provides post-weld cleaning for improved visual finishes
- Post-weld cleaning removes soot, debris, or any sign of localized heating
- Dramatically reduces time, cost and scrap
- Create visually appealing welds while eliminating need for post-grinding and polishing



BLAZE LASER CELL
COBOT LASER WELDING

The Blaze Laser Cell is a fully enclosed, stand alone, automated laser welding solution that does not require a laser darkroom. The large main door provides full access to the welding table. Dual Blaze Vision monitors provide full visibility to welding in progress, from two angles.

The 7-Axis Blaze Welding cobot features an unlimited library of welding recipes, “No Programming”, drag and drop tablet controller, and complete control and customization of all welding parameters. Any job is easily learned in minutes, from simple to complex paths, with varying weld recipes and weld types.

Blaze Vision™ Live Video Monitoring

Dual direct video monitoring of welding, in progress from two views, displayed on two Blaze Vision monitors. Welding visors, goggles, or welding screens are not required.

Blaze Welding Robot

Productive Robotics proven collaborative robot provides unmatched reliability, reach and maneuverability that only a 7-Axis robot can provide.

IPG LightWeld

The industry leading IPG Light Weld 1500 is included as standard. The Blaze Laser Cell fully automates access to all IPG laser welding and cleaning presets.

Unlimited Weld Complexity

Complete control and customization of welding parameters, weld recipes, weld types and selection of IPG weld presets.

Fume Extraction

Active fume extraction allows Blaze Laser Cell to operate in most any environment with easy ducting out.

Unrestricted Access

Large main door opens fully to allow complete and unrestricted access to the full, large, weld table and all setups, jobs and fixtures.

LED Lighting

Built in bright LED lighting provides perfect illumination for setting up jobs and fixtures.

MULTI-ROBOT ASSEMBLE & WELD CELL

FEWER FIXTURES NEEDED

Automated Assembly Cells

Productive Robotics custom Assemble and Weld cells provide automated production for welded assemblies. Assemble and Weld cells eliminate fixturing for intermediate components. The assembly robot holds a component while the weld robot tacks it in place. The assembly robot then moves out of the way as the weld robot creates a perfect weld. Done. Next.

Drag & Drop 5 Star Software

No techie jargon. All welding details and recipes are easily set on the Tablet Controller with drag and drop simplicity. Productive Robotics' industry leading "Zero Programming" system allows anyone, regardless of experience, to teach Blaze to weld. This dedicated welding software from Productive Robotics has radically simplified the way we work with cobots.

ONLY ON BLAZE WELDING ROBOTS

Manual Welding When You Want It

Blaze is designed from the ground up by welders and robotics experts working together and it shows: Blaze has the unique feature of being able to quickly and easily remove the torch to do tacking or complex welds by hand. There's also a live trigger on the torch for spot welding and more.

Intuitive Control Handle

Blaze's control handle is sized right and easy to grab. Function buttons are right at your fingertips, left or right handed. Use the control handle to physically teach Blaze to weld, without programming. Show Blaze the start and end of welds, tack points, circles or any complex shape at the touch of a button.

Synchronized Rotary Positioning Table

Add 8th axis precise synchronization to any Blaze welding robot, fully coordinated with robot motion. Right angle mount included. Reduce downtime with fewer adjustments and static teachable positioning.

Blaze Robot with LightWELD Laser Welding Specifications

Specifications subject to change without notice.

Blaze Laser Welding Robot

Teaching	No Programming Teach-by-Touch
Maneuverability	Unmatched 7-Axis flexibility
Weld Library	Unlimited
Repeatability	+/- 0.1 mm (.004”)
IP Class	IP 61
Collaborative Safety	Speed and force limited

Available in Two Sizes:

1550 mm / 61" reach
2159 mm / 85" extreme reach
(Dimensions include laser)

Traditional Versus Laser Welding

	Traditional Welding Methods	Blaze™ with LightWELD Laser Welding
Speed	Average	**Up to 4X faster than TIG**
Quality	Depends on user experience	**Consistent high quality results**
Learning Curve	Steep	**Quick and easy**
Material Flexibility	Limited with consumables changes	**Wide range with no setup**
Distortion & Deformation	High	**Very low**
Heat Affected Zone	Large	**Small**
Wobble Welding	No	**Yes-up to 5mm additional weld width**
Pre-and Post Weld Cleaning	No	**Yes-up to 15mm cleaning path**

Material & Thickness Welding Range

Material	LightWELD *XR*	LightWELD 1500 LightWELD *XC*
Stainless Steel	Up to 6.35 mm	Up to 4 mm
Galvanized Steel	Up to 6.35 mm	Up to 4 mm
Mild Steel	Up to 6.35 mm	Up to 4 mm
Aluminum 3 & 5 Series	Up to 6.35 mm	—
Aluminum 6 Series	Up to 5 mm	—
Nickel Alloys	Up to 5 mm	—
Titanium	Up to 5 mm	—
Copper	Up to 2 mm	—

	LightWELD Laser Welding	LightWELD *XC* Laser Welding	LightWELD *XR* Extended Range Laser Welding & Cleaning
Laser Type (Welding Mode)	Air-Cooled Ytterbium Continuous Wave 1070 nm Fiber Laser [1]		
Laser Output (Welding Mode)	1500 W Average Power. with 2500 Peak Power Class 1 Red Guide Bea		
Laser Output (Cleaning Mode)	—	2500 W Peak Power. Pulse Frequency up to 50 kHz. Pulse duty cycle up to 20%	
Umbilical Cable	Utilities bundle from Base Unit to Head including: Fiber Laser Delivery, Process, Gas, Process Head Control Signals and Safety Interlock Circuits. Length 10 m (32 ft)		
Cooling	Air Cooled - No External Chiller Required		
Weld Head	Wobble Welding Head Collimating Length 40 mm, Focus Length 120; Spot Size 150 µm Incorporating Safety Control Sensors and Laser-on Indicator User-changeable nozzles for planar, internal corner, and external corner welds		Wobble Welding Head Collimating Length 40 mm, Focus Length 120; Spot Size 60 µm Incorporating Safety Control Sensors and Laser-on Indicator User-changeable nozzles for planar, internal corner, and external corner welds
Weld Head Cleaning Nozzles	—	Set of three nozzles for wide-angle scanning	
Spot Size	150 µm		60 µm
Wobble Length	Adjustable up to 15 mm		
Cleaning Scan Length	—	Adjustable up to 15 mm	
Process Gas	Argon, Nitrogen, Argon + CO2 mix For LHW-1500-10 Meter: Working Pressure 102-207 kPa, (15-30 psi)		
User Interface	Front Panel Controls of Laser Power, Mode, Wobble Length and Wobble Frequency: (Rotary knobs with digital display). Laser On/Off Key Switch, E-Stop Button and Status indicator Lights		
Computer Connection	Ethernet Connections to Web Page Interface Allowing Viewing/Adjustment of Process Mode Settings, System Status and Alarm Signal		
Safety	Class 4 Laser Devise. Customer Responsible for standard ANSI Z136.1 safety precautions. System features include key for laser On/Off, 2-step laser operation trigger (Enable and Fire), Part-head contact safety circuit, Facility door interlock circuit.		
Operating Environment	Storage temperature -20 to 60° C. Operating range +5 to 35° C		
Ease of Aluminum Weld	Moderate		Easy
Single-Side, Single Pass Material Weld Capability	Stainless Steel, mild steel, galvanized steel, aluminum up to 4 mm		Stainless Steel, mild steel, galvanized steel, aluminum up to 6.35 mm, copper up to 2 mm
Facilities Requirements	Electrical: 220 V. 1 Ph, 50/60 Hz, < 30 Amp		
Accessories	Safety Glasses, Power Connecting Plug, Ethernet Cable		

Blaze Welding Robot Specifications

Blaze Welding Robot, LF and Duo specifications subject to change without notice.

Blaze Welding Robot

Teaching	No Programming Teach-by-Touch
Maneuverability	Unmatched 7-Axis Positioning
Weld Speed	Up to 2,540 mm (100”) per minute
Weld Recipes	Unlimited
Welding Modes	Continuous, Tack, Stitch, Weave
Weight	22 kg/58 lbs
Repeatability	+/- 0.1 mm (.004”)
Speed	0-2+ m/sec (78”/sec)
IP Class	IP 61
Joint Range	+/- 360° (all)
Mounting Flange Diameter	220 mm (8.66”)
Working Temperature	0-37C 32-100F
Power	120/240V, 60 cycle 500W (not including welder power)
Power Consumption	90-650 W
Safety	Speed and Force limited
Linear Speed	2 m/sec max (dependent on position)
Noise Level	Quiet, dependent on speed and payload
Mounting Orientation	Vertical: table/ceiling Horizontal: wall
Cable Length	1 meter, 5 meters (3 ft, 16 ft)

Blaze **Blaze Max**

Available in Two Sizes:

Blaze **1550 mm / 61" reach**
Blaze Max **2159 mm / 85" reach**
(Dimensions include MIG Torch)

Sealed Case Control Computer

IP Rating	IP61
Communications Hardware	Ethernet 100MB
Protocols	Ethernet IP, TCP/IP, Modbus
Power	100-240 VAC 50-60 HZ

Teach Tablet

Drag and drop touch screen with native welding software

Connection	USB
Dimensions	253 mm x 125 mm x 37 mm (10” x 5” x 1.5”)
Cable	5 meters (16 ft)

Synchronized Rotary Positioning Table

For Use With Any Blaze Welding Robot

- Adds 8th axis precise synchronization with robot motion
- 150 lb capacity
- Right angle mount included
- Static teachable positioning

Blaze Laser Cell

Blaze Welding Robot Included

Dimensions

Overall	2464 mm x 1905 mm x 2185 mm (97”w x 75”d x 86”h)
Table Height	914 mm (36”)
Work Surface	1060 mm x 1,244 mm (41.75” x 48”)

Wire Drive

Wire Feed Delivery Length	10 ft. (3 m) Optional: 15 ft. (5 m)
LightWELD Interface	Low Voltage enable signal cable
Wire Feed Speed Range	0.5 - 230 ipm (1 - 600 cm/min)
Compatible Wire Diameters	0.030” – 0.063” (0.8 mm - 1.6 mm)
Wire Reel Capacity	Up to 30 lbs. (12” diameter)
Compatible Wire Materials	Steel, Stainless Steel, Aluminum, Copper, Nickel
Power Requirements	115 - 230V 50/60 Hz

LightWeld® Welder

Welding Only	LightWELD 1500
Welding & Cleaning	LightWELD 1500 XC
Laser Power Output	Up to 2 kW
Input Power	200-240VAC, 3PH, 50/60 Hz, 24 Amps
Presets	Up to 100
Process Gas	Argon/Nitrogen Working Pressure 15-30 psi (1-2 Bar)
Cooling	Air-Cooled (No External Chiller Required)

General

Lighting	High intensity LED
Fume Extraction	

Blaze DUO Specifications

Blaze Welding Robot Included

Dimensions

Overall	2565 mm x 1549 mm x 2540 mm (101”w x 61”d x 100”h)
Table Height	914 mm x (36”)
Two Weld Stations	1060 mm x 1,244 mm (41.75” x 48”)
Spatter Catch Trays	2 trays cover entire weld area

General

Lighting	High intensity LED
Fume Extraction	

Wire Drive

Wire Feed Speed	50-1000 IPM (1.27–25.4 m/min.)
Wire Dia range	0.9–2.0 mm (.035–5/64”)

Advanced MIG processes

- Versa-Pulse™
- Accu-Pulse® MIG (GMAW-P)
- RMD®
- MIG (GMAW)
- High-deposition MIG (GMAW)
- Flux-cored (FCAW)

Welder: Auto Continuum 350 or OTC Welbee ll

Maximum Current	350 Amp 10V - 44V
60—100% Duty Cycle	
3 Phase 50/60hz	
Power Supply	230VAC, 380VAC, 400 VAC, 460Vac, 575Vac
Welding Circuit Rating	230VAC - 575VAC 30V @ 40amps 575VAC @ 20A

Blaze LF Welding Package Specifications

Blaze or Blaze Max Welding Robot Included

Dimensions

Table Height	914 mm (36”)
Weld Table	1,244 mm x 2,490 mm (48” x 96”)

Welder: Auto Continuum 350 or OTC Welbee ll

Maximum Current	350 Amp 10V - 44V
60—100% Duty Cycle	
3 Phase 50/60hz	
Power Supply	230VAC, 380VAC, 400 VAC, 460Vac, 575Vac
Welding Circuit Rating	230VAC - 575VAC 30V @ 40amps 575VAC @ 20A

Advanced MIG Processes

Versa-Pulse™

Accu-Pulse® MIG (GMAW-P)

RMD®

MIG (GMAW)

High-deposition MIG (GMAW)

Flux-cored (FCAW)

Wire Drive

Wire Feed Speed	50-1000 IPM (1.27–25.4 m/min.)
Wire Dia range	0.9–2.0 mm (.035–5/64”)

Blaze Mobile Package

Blaze or Blaze Max Welding Robot Included

Auto continuum 350 Welder
or OTC Daihen Welbee ll
(Also available without welder)

Sealed case control computer

Rolling Base with Locking Casters
Dimensions: 914 mm X 914 mm (36”x 36”)

No programming teach tablet

Available in Two Sizes:

Blaze	**1550 mm / 61" reach**
Blaze Max	**2159 mm / 85" reach**

(Dimensions include MIG Torch)

Multi-Robot Assemble & Weld

Multiple Configurations Available

Blaze Welding Cobot

OB7 Assembly Cobot

Multi-Robot Assemble & Weld Cells are custom built to order. Contact factory for details.

Direct Factory Support

Our Robotics Experts are here to help with all your questions.

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Designed & Built in the USA

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