JASIC®

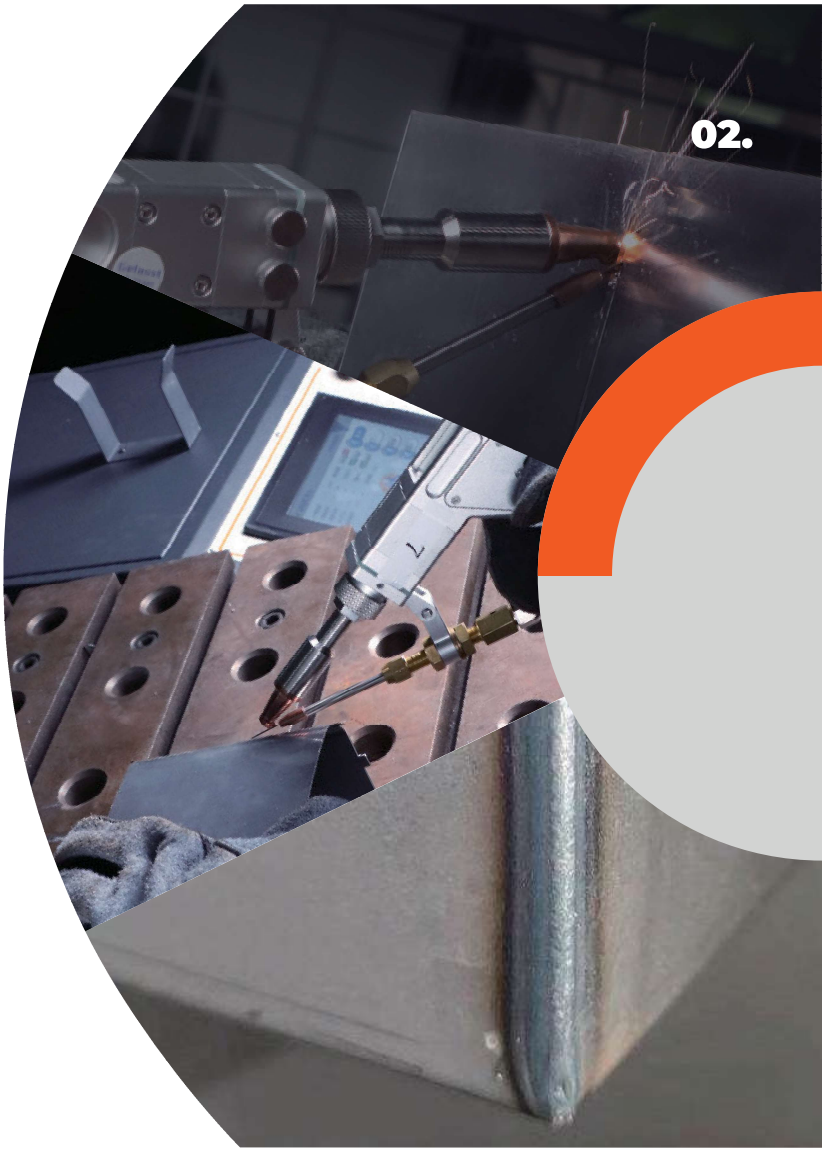
HANDHELD FIBRE LASER WELDING SYSTEM



WILKINSON STAR

2 Year Warranty*

A Brief Introduction To Handheld Fibre Laser Welding



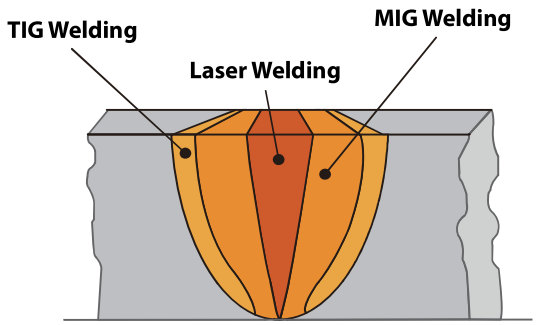
Fibre laser is an emerging technology within the sheet metal fabrication industry that uses a laser beam to melt and join metals.

Fibre laser technology is a great supplement to conventional welding methods in many fabrication applications and can offer advantages over conventional welding methods.

It delivers excellent welding results at low production costs when compared with conventional welding methods. As the challenges of the metal fabrication industry grow, this new technology can significantly improve fabricators efficiency and profitability in a competitive landscape where fast project delivery and effective cost control is vital.

This technology is much more precise than MIG/TIG with faster welding speeds, uniform weld beads and minimal material distortion thanks to the limited heat affected zone (HAZ).

Comparison of HAZ



In Comparison To Other Types Of Welding Technologies...

Welding Technology		Arc Welding	Solid YAG Laser	CW Handheld Fibre Laser
Welding Experience	Heat input	High	Low	Low
	Distortion	High	Low	Low
	Weld seam processing	Fillet	Fillet	Variable
	Post weld processing	Yes	Yes	No
	Welding speed	Low	Medium	High
	Ease of use	Low	High	High
Sustainability	Hazard to people	High	Low	Low
	Pollution to environment	High	High	Low
Cost	Consumables	Electrode/Welding wire/Shielding gas	Crystal, Xenon gas	Shielding gas
	Energy efficiency	High	Low	High
	Skill requirement	High	Moderate	Low
	Footprint	Small	Large	Small

Why JASIC Handheld Fibre Laser Welding?

High Welding Efficiency

- Up to 10x faster than manual TIG welding
- Very limited spatter thus little post-weld cleaning needed
- Little need for rework thanks to minimal porosity, undercut or distortion

High Energy Efficiency

- CW (continuous wave) laser with 40+% electro-optical conversion efficient, 10x that of a solid YAG laser

Cost Efficient

- Minimal welding expertise needed, cut down costs incurred from experienced welders
- Almost 0 maintenance need for key component, pump source has over 100k hours life span

2 - Year Warranty

- Comprehensive quality assurance

High Usability

- New industrial design featuring better ergonomics, flexibility and reliability
- Colour touch screen control panel with intuitive user interface
- Comprehensive job parameter settings
- Small foot print, great mobility and flexibility

New Industrial Design Featuring Better Ergonomics, Flexibility & Reliability

Our product boasts dependability due to strengthened casing and improved wiring layout. It offers user friendly operation with its compact size and reduced weight. Large Castors and a well designed handle provide ease of use.

4 Roller Wire Feeders



Single Wire Feeder

- Robust and durable frame structure
- Digital display panel with high visibility
- 4 roller wire feeder delivers smooth and stable feeding



Dual Wire Feeder

- Colour LCD touch screen control panel
- 4 roller wire feeder delivers smooth and stable feeding
- Dual wire feeding for higher deposition rate



Improved user interface enhances user experience

Handle design makes it easier to carry and transport





Easy access front door slot for storing accessories



Large self-locking castors for greater mobility

Handheld Fibre Laser Machine

05.

A turnkey solution for fast sheet metal fabrication. On top of its versatiity, this system also possesses characteristics in efficiency and in ease of use



Welding

Rapid and consistent weld seam formation, limited training and little post-weld cleaning needed.



Cleaning

Easily switch to cleaning mode by simply changing the operation mode on the interface and replacing the nozzle on the torch for contact weld seam cleaning up to 10mm.

JASIC

Safety

Hand Held Fibre Laser Welding Safety Guidance

Lasers are classified into several classes depending on the level of hazard they present and the risk to the operator and others within the surrounding area, with the highest Class 4 representing the most hazardous lasers available. EN-60825-1 outlines the classification and safety guidance of laser products.

Handheld fibre laser welding machines are classified as hazardous, Class 4 laser products, but with the required PPE to protect the operator and a purpose built Kyrus Automation Class 4 laser welding enclosure, this technology is safe to use. Users can enjoy the many benefits that handheld fibre laser welding offers over traditional welding methods.

The difference between laser welding and traditional arc welding processes is that laser energy is used instead of an electrical arc to form the weld pool. As such, additional/process specific safety measures must be considered when operating this equipment.

It is mandatory that businesses with class 4 laser appliances on site have carried out a suitable and sufficient risk assessment and have appointed a competent person to undertake these tests. It is advised that the company has a Laser Safety Officer (LSO) or a Laser Protection Advisor (LPA).

Laser Radiation



Exposure to laser light can inflict severe retina and/or cornea injuries leading to permanent eye damage and may cause skin damage. Some laser light is invisible. Safety protocols must be followed to prevent accidental exposure to invisible, direct and reflected beams. The system must only be operated in a Laser Controlled Area.

NEW

Dedicated Laser Welding Helmet with ADF

- A Weltek Kapio-based helmet
- Standard: EN 207
- Certification CE EN 207:
- Complete helmet +ADF Certification Range: 1000-1100 D LB6 IR LB8
- Optical Density of ADF : OD7
- With Airkos PAPR solution available



weltek
A COVERGUARD GROUP COMPANY



Personal Protection



Appropriately certified eyewear must be worn which is suitable for the laser output wavelength, by both the operator and anyone within the enclosed working environment. The standards for such protection are governed by EN-207:2017.





The key aspects of eye and face protection when using a class 4 laser are the LB and OD ratings. The Laser Barrier (LB) rating is reference to the level of protection the face shield or glasses can provide against a direct hit from a laser beam. There will always be a letter stated before the LB reference, which in the case of hand held laser welders should be 'D' (Continuous Wave). The Optical Density (OD) rating is reference to the level of protection the filter of the glasses/lens can provide and the level of light able to pass through the filter and reach your eyes.

EN 207 encompasses the full protection of the helmet or glasses, including the face shield or frame. All Jasic laser welders are supplied with glasses certified to EN 207 D LB6 OD8. The Kapio laser helmet offers full face protection to EN 207 D LB 6 OD6 with the ADF offering protection to D LB 7 OD7. The Kapio laser helmet is also available as a personal air powered respirator system (PAPR) to offer full protection for the operator.

Exposure to infrared (IR) and UV light radiation can cause serious injury to the skin. Operators and all personnel working within the Laser Controlled Area must wear protective clothing including laser-resistant and heat resistant gloves, caps, leather apron and other laser-resistant and heat-resistant clothing.

Fume Hazards



As with all welding processes, there is a fume hazard present. The appropriate measures should be taken to ensure safety, with the most effective method being an extraction hood coupled with a personal air powered respirator system for the operator. It is important that any filtration is matched to the welding process/material.

Wilkinson Star Limited offer an extensive range of extraction and PPE under the F-Tech and Weltek brands. Further information is available at **www.wilkinsonstar247.com**

Class 4 Enclosures by Kyrus Automation

The required safety and personal protection measures must not be overlooked whilst capitalising on the productivity gains that hand held fibre laser welding offers. When using a Class 4 laser welder it is imperative that you use a suitable Class 4 enclosure.

Wilkinson Star Limited together with our integrator Kyrus Automation offer full Class 4 laser welding enclosure solutions to offer protection to all workers within the workspace.

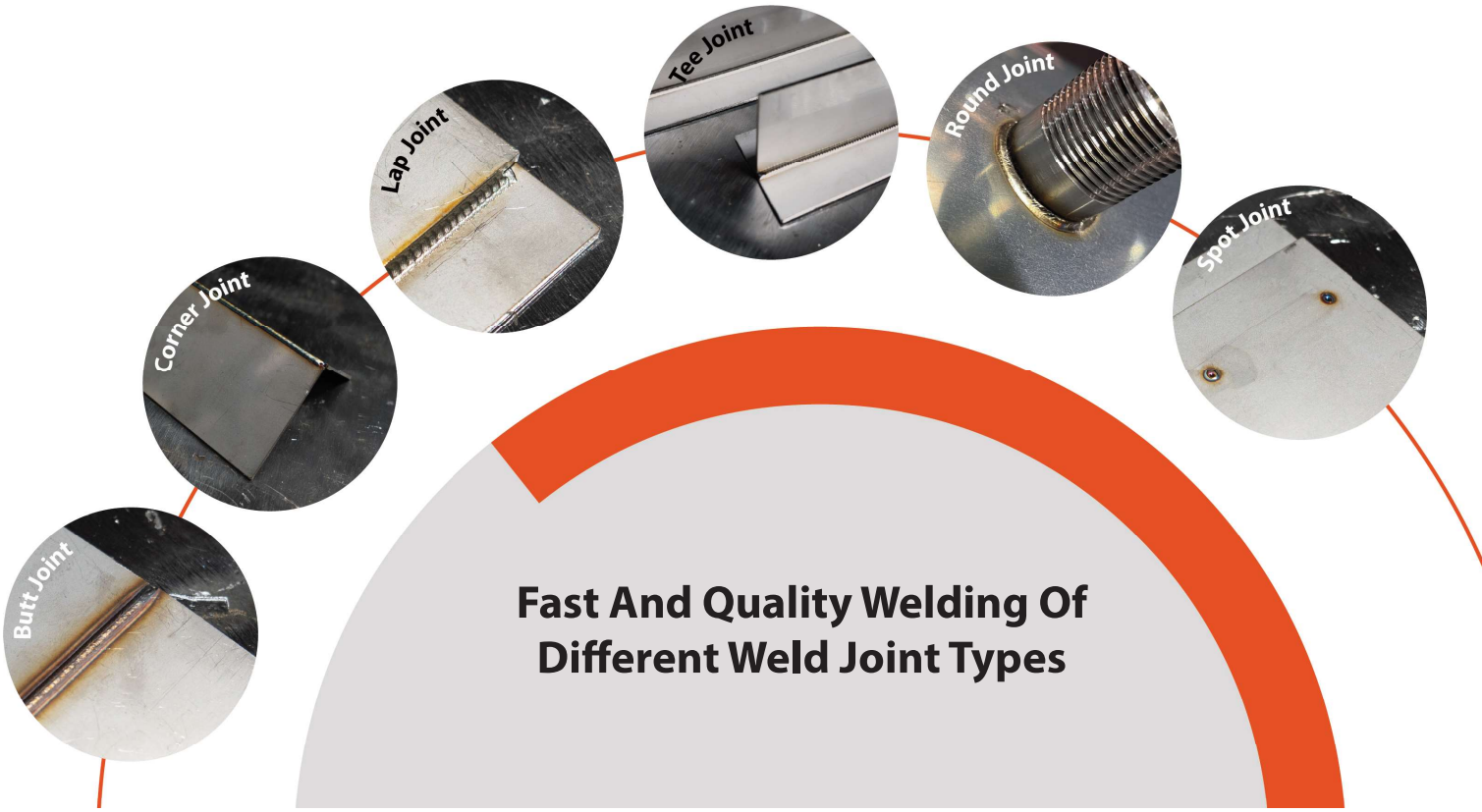
A Kyrus Laser Welding Enclosure helps mitigate the dangers of hand held laser welders by providing a safe and contained working environment.

Kyrus have designed a standard "plug and play" range that provides this safe working environment.

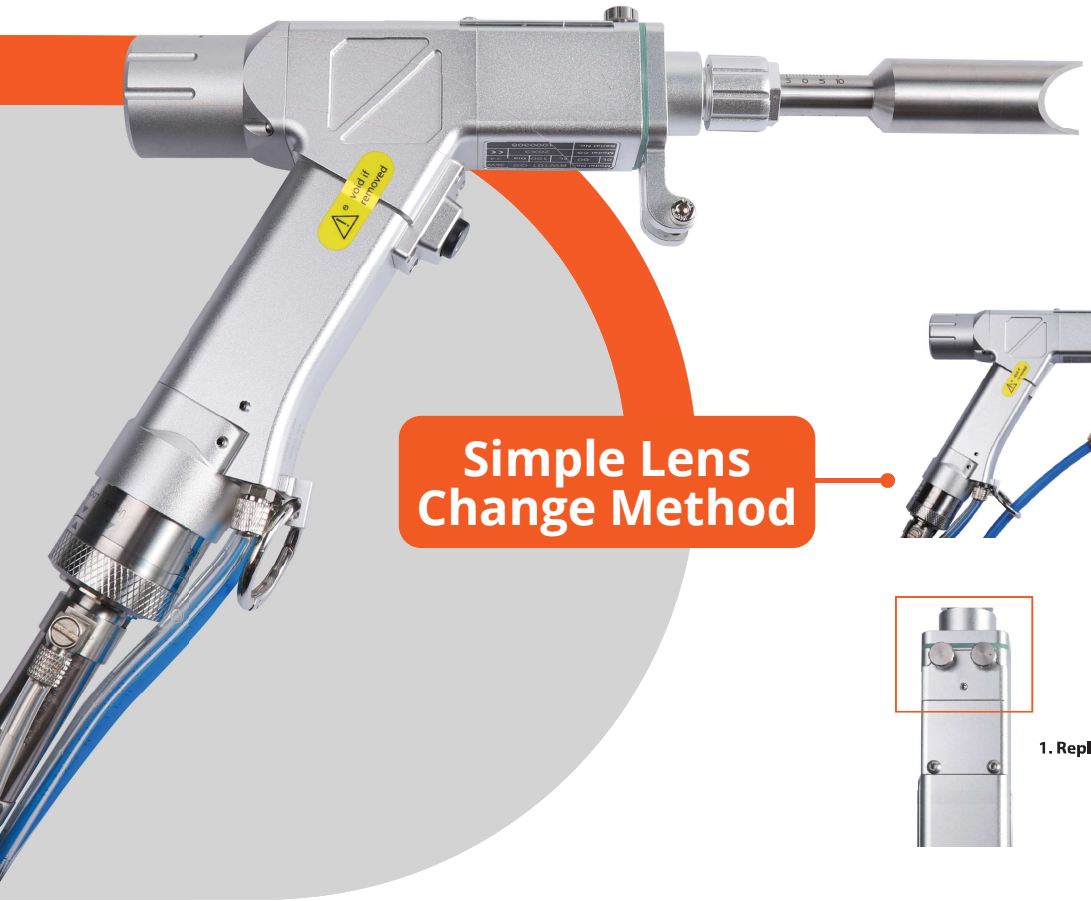
Please see page 15 for more information.

Exceptional Welding Results

Continuous wave laser beam delivers high quality weld seams with minimal distortion, undercut or burn-through thanks to very limited heat affected zone (HAZ). As a result, very little post weld processing is needed - less labour, shorter delivery time.



Model		LS-15000F (G4J8)	LS-20000F (G4J9)
Input power supply		1P AC230V (-10% - +15%) 50Hz	1P AC230V (-10% - +15%) 50Hz
Input power		5.8 kW	7.8 kW
Centre wave length		1080 ± 10nm	1080 ± 10nm
Electro-optical conversion efficiency		≥40%	≥40%
Laser power		1500 W	2000 W
Fibre cable length		6m	12m
Cooling method		Water cooled	Water cooled
Single wire welding and self fusion welding	Scan width	0~6mm	0~6mm
	Welding wire diameter	0.8/1.0/1.2/1.6mm	0.8/1.0/1.2/1.6mm
	Shielding gas	Argon/nitrogen (≥3 bar)	Argon/nitrogen (≥3 bar)
	Welding thickness	0.5 - 5mm	0.5 - 6mm
	Penetration	0.5 - 3mm	0.5 - 4.5mm
	Welding gap range	≤ Welding wire diameter	≤ Welding wire diameter
Double wire welding	Scan width	Not recommended	0 - 6mm
	Welding wire diameter		1.2/1.6mm
	Shielding gas		Argon/nitrogen (≥3 bar)
	Welding thickness		3 - 6mm
	Penetration		3 - 5mm
	Welding gap range		≤ Welding wire diameter
Water tank capacity		8L	8L
Operating temperature		-10°C - 40°C; antifreeze needed when ≤5°C	-10°C - 40°C; antifreeze needed when ≤5°C
Operating humidity		≤ 70% at 40°C; ≤ 90% at 20°C	≤ 70% at 40°C; ≤ 90% at 20°C
Power source weight		85 Kg	92 Kg
Packed weight		103 Kg	110 Kg
Packed weight of wire feeder and accessories		17.5 Kg	17.5 Kg
Power source dimensions		773 x 410 x 737mm	773 x 410 x 737mm
Package dimensions		865 x 475 x 1035mm	865 x 475 x 1035mm
Package dimensions of wire feeder and accessories		890 x 320 x 430mm	890 x 320 x 430mm



Simple Lens Change Method

The handheld laser gun is by default delivered in welding mode

1. Replace protective lens