7

Partner Products

Welding equipment from leading manufacturers that AVP represents – to complete our own machines and cells.

7.1 IPG LightWELD • Handheld laser welding and cleaning **54**

7.2 WeldingDroid PurgeMaster • Gas purging system **56**





7.1 IPG LightWELD

Handheld laser welding and cleaning

LightWELD handheld laser welding and cleaning devices from IPG Photonics are fast, easy to learn and operate, and produce high-quality, consistent results across a wide range of materials and thicknesses. AVP represents IPG LightWELD welding sources. **Integration with AVP expertise**

Applications Welding of steel, stainless steel and aluminium; with XR models also titanium, copper and nickel alloys. Pre-weld and post-weld laser cleaning (XC and XR models).





LightWELD 1,000, 1,500, 1,500 XC, 1,500 XR and 2,000 XR

Models

- **LightWELD 1,000** – reduced power and a higher-brightness beam for the most cost-effective laser welding of steel, stainless steel and aluminium up to 4 mm.
- **LightWELD 1,500** – cost-effective laser welding of steel, stainless steel and aluminium up to 4 mm.
- **LightWELD 1,500 XC** – the same capabilities as the 1,500, with added pre-weld and post-weld cleaning.
- **LightWELD 1,500 XR** – a higher-brightness beam for an extended range of materials up to 6.35 mm, including titanium and copper.
- **LightWELD 2,000 XR** – a higher-brightness beam and increased power for high-speed welding of the full range of materials up to 8 mm.

Technical data

	LightWELD 1,000	LightWELD 1,500	LightWELD 1,500 XC	LightWELD 1,500 XR	LightWELD 2,000 XR
Laser power	up to 1,000 W	up to 1,500 W	up to 1,500 W	up to 1,500 W	up to 2,000 W
Steel (stainless, mild, galvanized)	up to 4 mm	up to 4 mm	up to 4 mm	up to 6.35 mm	up to 8 mm
Aluminium 3 and 5 series	up to 4 mm	up to 4 mm	up to 4 mm	up to 6.35 mm	up to 8 mm
Aluminium 6 series	–	–	–	up to 5 mm	up to 5 mm
Nickel alloys	–	–	–	up to 5 mm	up to 7 mm
Titanium	–	–	–	up to 5 mm	up to 7 mm
Copper	–	–	–	up to 2 mm	up to 3 mm
Wobble welding width	–	–	up to 5 mm	up to 5 mm	up to 5 mm
Cleaning width (pre- and post-weld)	–	–	up to 15 mm	up to 15 mm	up to 15 mm
Peak power for cleaning	–	–	2,500 W	2,500 W	3,000 W

Maximum material thickness. Data: IPG Photonics; subject to change without notice.

7.1 IPG LightWELD

Features, options and accessories

LightWELD compared with MIG and TIG

	MIG / TIG	LightWELD
Speed	Average	Fast – over 4× faster than TIG
Quality	Depends on user experience	Consistent, high quality
Learning curve	Steep	Quick and easy
Part setup	Critical and time-consuming	Minimal and fast
Material flexibility	Limited; consumables changes	Wide range, no set-up
Heat-affected zone	Large	Small
Distortion and deformation	High	Very low
Wobble welding	No	Yes – up to 5 mm
Pre-weld cleaning / post-weld polishing	No	Yes (XC and XR models)

Manufacturer's comparison (IPG Photonics).

Features

- Optimized factory presets; up to 100 stored and user-defined parameter sets – new welders are productive within hours
- Laser power up to 2,000 W, adjusted with intuitive controls
- Lightweight, ergonomic handheld welding and cleaning torch; nozzle tips for fusion welding, wire welding and cleaning change quickly
- Built-in wobble welding – adjustable frequency and weld width up to 5 mm – for aesthetic seams and parts with poor fit-up
- Simple installation: 230 V power, standard gas and workpiece clamp; laser power, gas and torch control run through a single cable
- Ethernet connection for advanced settings; I/O controls and safety interlock
- Weld safety detection: the laser fires only while the nozzle is in contact with the part, and shuts off if no welding plume is detected

Options and accessories

- Wire feeding package (wire Ø 0.8 – 1.6 mm, feed speed 30 – 600 cm/min, reels of 1, 5 or 10 kg; steel, stainless steel, aluminium)
- Dual wire feeder adapter – larger fillets and more tolerance for poor fit-up
- Gas lens nozzle for materials sensitive to oxygen and moisture
- Nozzle sets for copper, aluminium and cleaning; cover slides
- Carbon-fibre welding helmet (EN 207) and laser safety glasses



Wire feeder unit and welding helmet

Made in Germany

LightWELD is manufactured for European users at the German headquarters of IPG in Burbach (NRW). IPG Laser GmbH & Co. KG is a leading company in fibre laser technology and part of IPG Photonics Corporation (USA); since its foundation in 1990 it has become the market leader in high-power fibre lasers.

LightWELD is also the recommended laser source of our VCS Mini welding cell (page 25).

Product information: IPG Photonics; subject to change without notice. Some combinations of options may not be available.

7.2 WeldingDroid PurgeMaster

Purging-gas system for pipes and tanks

Simple and practical purging-gas system: the gas is applied only where the welding takes place, and the gas chamber inside the pipe follows the torch on the outside.



PurgeMaster – complete package

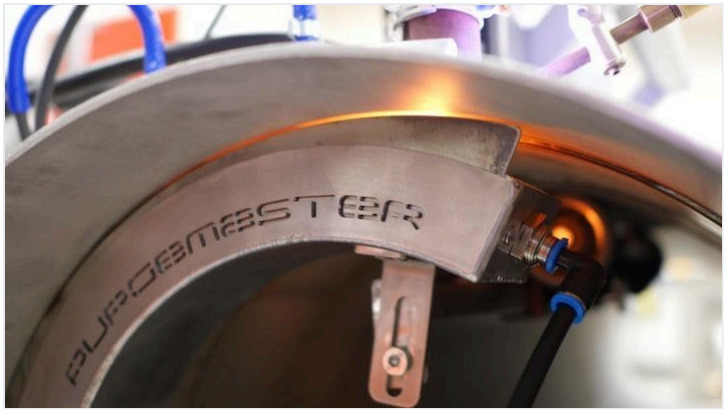
Save up to

90%

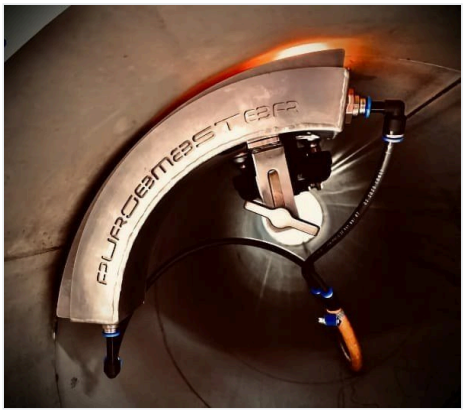
on your purging gas

Purging is one of the most time-consuming and expensive operations when welding pipes. To prevent oxidation on the inside of the pipe, the pipe is usually filled with gas, which is then flushed continuously during welding.

The PurgeMaster applies gas only where the welding takes place. The gas chamber inside the pipe follows the torch on the outside of the pipe – a system patented by WeldingDroid.



PurgeMaster chamber inside a pipe



PurgeMaster chamber following the torch

Features and benefits

- Strong magnets keep the PurgeMaster chamber aligned with the torch at all times
- 360° wheels let it slide sideways and through elbows
- No wires or tools need to be attached to the PurgeMaster
- Simply slide it out when welding is finished
- Different inserts cover pipe sizes from Ø250 mm and up (wall thickness up to 10 mm)
- Gas consumption reduced by up to 90%, depending on pipe diameter and length
- No long flush times and no uncertainty about the PPM level during welding
- A complete package, ready to use for pipe applications

7.2 WeldingDroid PurgeMaster

Highlights, ease of use and tank welding



PurgeMaster chamber and inserts



View inside the pipe

Highlights

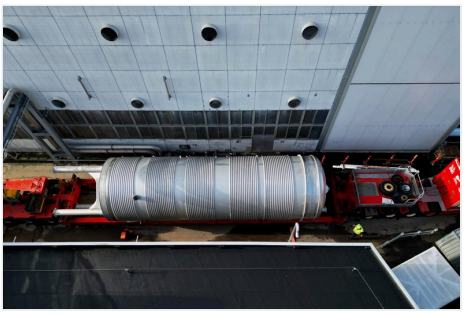
Applications	Pipes and tanks
Materials	All non-magnetic metals
Diameter	from Ø250 mm
Wall thickness	up to 10 mm
Change of diameter	Quick, with different inserts
Gas saving	up to 90% (depends on diameter and length of pipe)

Ease of use

- Strong magnets keep the PurgeMaster aligned with the torch
- 360° wheels – it can be slid sideways and through elbows
- No wires or tools to attach
- Slide it out after welding – even through small openings
- Different inserts cover all available pipe sizes

Tank welding

- When welding tanks (horizontal welding), the work is reduced to one person – the welder
- No manual trailing of a gas cup on the inside of the tank
- For manual tank welding an armrest is included, which makes the procedure not only faster but also more comfortable for the welder



Tank welding application

Savings

- Gas consumption reduced by up to 90%, depending on pipe diameter and length
- Avoid long flush times and uncertainty about the PPM level during welding
- A complete package, ready to use for pipe applications

Manufacturer: WeldingDroid ApS (Denmark) – www.weldingdroid.com. AVP represents WeldingDroid.