Redlands™
Machinery Pvt Ltd

ORY | WELD

Precision Laser Welding

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ORY | WELD

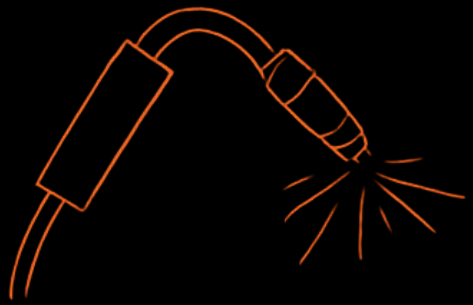
Precision Laser Welding

ORY | WELD represents a production-focused approach to laser welding.

We supply advanced laser welding equipment and help manufacturers turn it into real productivity.

Our focus is process, repeatability, and cost reduction — not just machines.

ORY | WELD exists to make laser welding practical, scalable, and effective on the shop floor.



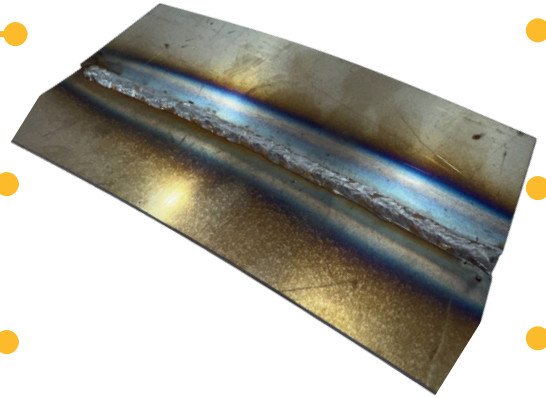
MIG and TIG create **rework**, not productivity - grinding, cleaning, fixing distortion — **more time, more people, higher cost.**

Conventional arc welding processes systematically kill productivity

HIGH ENERGY EXPENDITURE

DISTORTION
High Heat Input → Residual Stresses → Warped Parts

WIDE HAZ
Heat Spreads far beyond the joint → Material properties altered

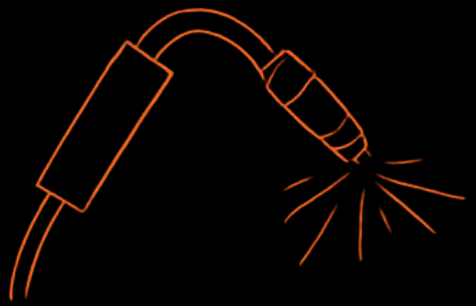


HIGH CONSUMABLE USE & FUMES
Filler Wire, Shielding gas, smoke

SPATTER
Post-weld grinding & cleaning work

HIGH OPERATOR SKILL DEPENDENCY
Quality varies with fatigue & experience
Difficulty to find experieced welders

LOW WELDING SPEED
Lowers manual productivity & also limits the speed of automation



Laser welding creates **productivity**, **not rework** clean welds, minimal distortion, faster welding — **less time, fewer people, lower cost.**

ORY | WELD Laser welding systems restore productivity

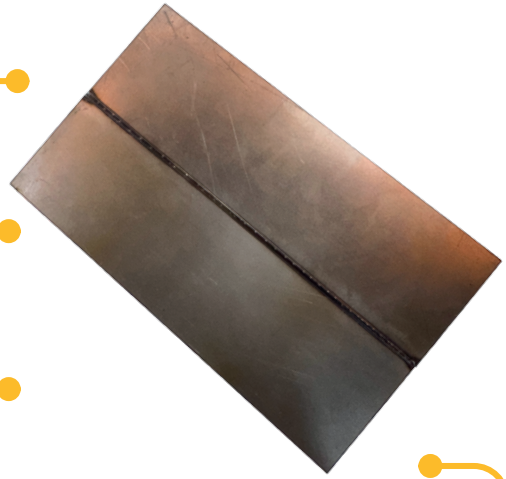
VERY LOW DISTORTION

Low Heat Input →
Practically no distortion

LOWER ENERGY EXPENDITURE

SMALL HAZ

Heat Affected Zone - 5x to 10x smaller than MIG/TIG resulting in better material properties



LESS CONSUMABLES & FUMES

Filler Wire, Shielding gas consumption is less
and significantly reduced smoke

NO SPATTER

Eliminates post-weld grinding & cleaning work

VERY HIGH WELDING SPEED

ENABLES AUTOMATION

Laser Welding can be automated more easily than MIG/TIG increasing productivity

HIGHER WELD STRENGTH

Produces better weld strength than MIG / TIG

LOWER POROSITY

What this means in Production Terms

A simple time, cost and quality comparison for a typical MIG welded job with laser welding

Sample Job:

- Sheet metal assembly
- 1.6 mm and 1.2 mm thick sheet metal
- Approx. 2m total weld length
  Requires Cosmetic Finish

$ Cost Savings:

- 3.5x reduction in production time
- Reduced filler wire consumables
- Shielding gas not required - only air used
- Griding disc usage eliminated
- Reduced Energy usage

Others:

- Achieves better cosmetic finish
- Weld quality is better

Time Comparison to complete one job

MIG System	ORY | WELD Laser System
High Welding time	Time reduced to half on manual welding
Distortion Correction time	NIL / Pocess Eliminated
Spatter Cleaning time	NIL/ Process Eliminated
Grinding time	NIL/ Process Eliminated
Buffing time	Reduced

ORY Laser Welder reduces production time by approx 3.5x for the sample job

ORY | WELD

Laser Welding Equipment That Delivers Real Production Advantage

The **ORY | WELD** Process:

ORY | WELD Equipment that lowers production cost

Lower consumables, no spatter, higher speed, consistent quality

- **Less wire, gas, abrasives**
- **Minimal Post Processing**
- **HIgher Speeds**
- **Consistent Weld Quality**

Engineering that makes laser welders save cost in production

Process developement

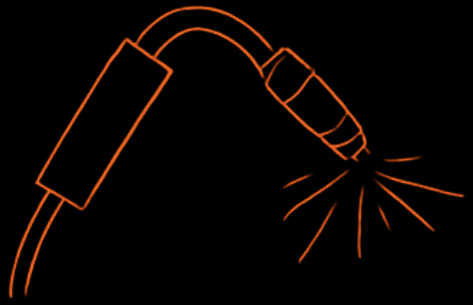
- **Developing the right process**
- **Joint design and penetration strategy**
- **Guidance on fit up, gap control**
- **Achieving repeatability**

Automation that unlocks real gains

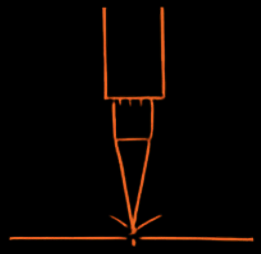
Fewer welders, higher throughput, scalable productivity

- **Scaling beyond manual welding**
- **Fewer skilled welders**
- **HIgh process efficiency**
- **Enabling future automation**

Building workflows beyond manual laser welding to unlock the full potential of laser welding through automation



Achieve upto 12 mm weld seam width using our laser welders in manual welding using multi-wire feeding



ORY | WELD laser welding

Filler Wire Capability

This enables:


Single-wire feeding


Dual-wire feeding

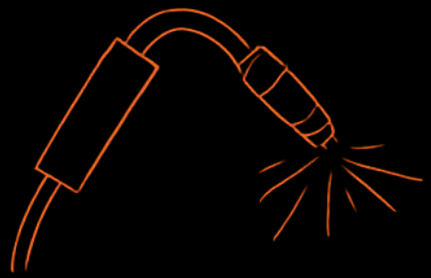

Triple-wire feeding


Multi-wire configurations


Gap bridging


Alloy composition control


Structural/load-bearing welds

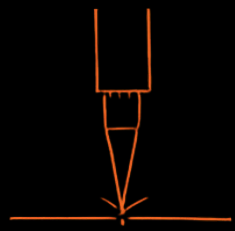


ORY M15, ORY M20, ORY M30 models can be used for handheld manual welding.

Power	Stainless	Carbon	Galvanize	AL
1500W	≤ 4 mm	≤ 4.5 mm	≤ 4.5 mm	≤ 3 mm
2000W	≤ 5 mm	≤ 5.5 mm	≤ 5.5 mm	≤ 3.5 mm
3000W	≤ 7 mm	≤ 7.5 mm	≤ 7.5 mm	≤ 5 mm

Above table shows typical weld thicknesses for the optical power delivered

ORY manual laser welders can be configured with wire-feeders to achieve MIG-like weld beads, cleaner, stronger and faster



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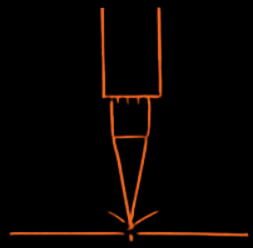
Manual Laser Welder

Model	ORY M15/M20/M30
Optical Power Options	1500/2000/3000 Watts
Cooling	Chiller - Water Cooled
Net Weight	120/135/160 kg
Dimensions	1050 x 650 x 950 mm
Gun Weight	0.5 kg
Laser Mode	Continuous / Pulse Width Modulated
Wobble Options	Single/ Double
Wobble Width	0-8 mm
Input Voltage	Single Phase 220 V upto 2000 watts/ Three Phase 380v for 3000 watts
Rated Power	6.5 kW / 9 kW / 11.5 kW

Wire Feeding Capability:

The wire feeding system can be configured for single-wire, two-wire, three-wire, or four-wire feeding, allowing precise control of filler volume and weld metal composition across a wide range of joint types.

An anti-retract wire feeding mechanism ensures smooth, continuous wire delivery, which is particularly critical for aluminum welding, where soft wire characteristics and surface friction can otherwise lead to feeding instability. This results in more consistent weld formation and improved process stability.



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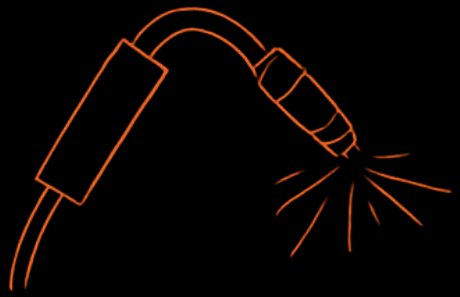
Wire Feeder

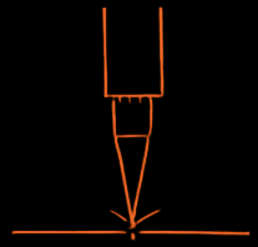
Precise wire feeding with anti-stick retraction and jam-proof Aluminum welding, featuring dust-resistant design.

Stepper motor + planetary gear reducer outperforms standard DC motors, enabling high-speed 4WD wire drive system for unparalleled control.

Product	Configuration
ORY WF1	Single-Wire Feeder
ORY WF2	Two-Wire Feeder
ORY WF3	Three-Wire Feeder
ORY WF4	Four-Wire Feeder



Our innovative handheld laser gun is designed with a reduced mass, minimizing operator fatigue during extended use. In addition, the optical design improves lens service life, resulting in lower maintenance frequency and reduced overall cost of ownership.



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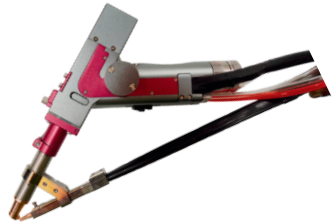
Handheld Welding Gun

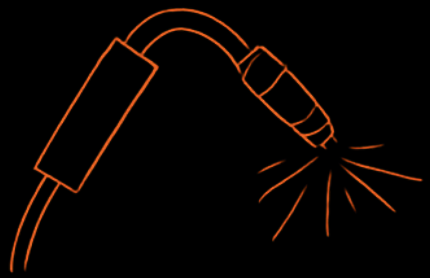
The handheld welding gun has dual protective lenses, rotating drawer-type protective lens, increasing the service life by 6 times, durable, double-protection. Unique focus adjustment structure makes it easier to adjust laser focus and replace the gun nozzle.

Six times longer service lifetime

1.5kW/2kW compact design gun - single wobble



2kW compact design gun - double wobble



Interchangeable gun design allows the welding gun to be replaced with a laser cleaning gun on ORY M15, ORY M20, and ORY M30, enabling both processes on the same handheld system

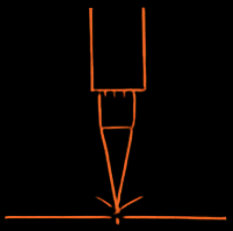
Non-contact, chemical-free cleaning with no abrasives or consumables

Selective removal of oxides, rust, oil, and coatings without affecting base material

Digitally controlled, repeatable cleaning quality independent of operator skill

No mechanical stress or surface damage

Improved weld quality through clean, oxide-free surfaces, particularly for aluminum and stainless steel



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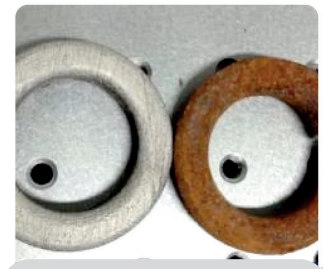
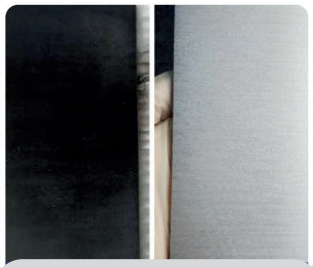
Continous Laser Cleaning

Wavelength	Scan Width (Adjustable)	Optical Power
1064 nm	0 - 300 mm	1500 / 2000/ 3000 Watts

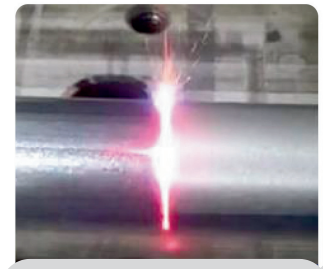


Except for Red and Black Embroidery



Descale

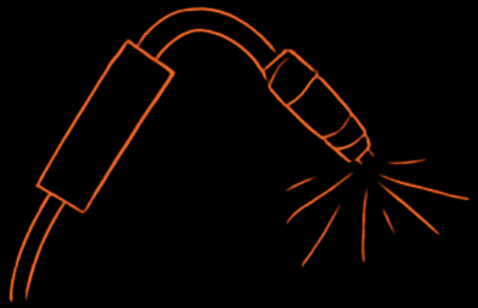
Laser Texturing



Stainless Steel Polishing

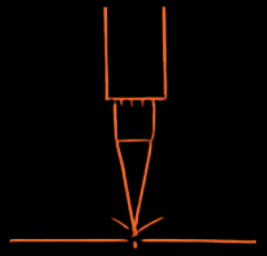
Layered Paint Removal

Weld Cleaning



Maximum achievable spot-welding thickness depends on material type, joint condition, and process parameters.

Material	ORY SW15 (1500 W)	ORY SW20 (2000 W)	ORY SW30 (3000 W)
Aluminum	Up to 2 mm	Up to 3 mm	Up to 4 mm
Carbon Steel	Up to 3 mm	Up to 4 mm	Up to 5 mm
Stainless Steel	Up to 3 mm	Up to 4 mm	Up to 5 mm
Galvanized Sheet	Up to 2 mm	Up to 3 mm	Up to 4 mm



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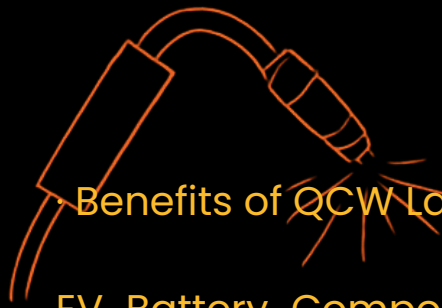
Swing Arm Spot Welding

Model	ORY SW15/SW20/SW30
Optical Power Options	1500/2000/3000 Watts
Cooling	Chiller - Water Cooled
Net Weight	120 kg
Dimensions	1050 x 650 x 950 mm
Laser Mode	Continuous
Wobble Options	Double
Swing Arm Range	1000 mm
Input Voltage	Single Phase 220 V upto 2000 watts/ Three Phase 380v for 3000 watts
Rated Power	6.5 kW / 9 kW / 11.5 kW



· Benefits of QCW Laser Welding

EV Battery Component Welding: Joining highly reflective copper and aluminum tabs, busbars, and terminals in battery packs.

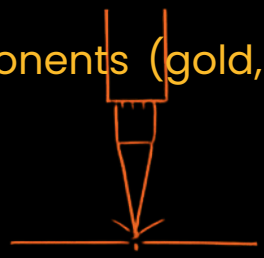
· Precision Medical Device Fabrication: Welding tiny, heat-sensitive components like surgical tools, implants, and microelectronics.

· Hermetic Sealing for Fuel Cells & Electronics: Creating perfect, leak-tight seals on thin stainless steel sheets for hydrogen fuel cell bipolar plates or on thin aluminum enclosures for sensors.

· Micro-Welding of Thin, Reflective Metals: Working with materials like thin-gauge aluminum or brass (under 0.5mm). QCW's pulsed energy prevents burn-through and distortion, which CW lasers often cause.

· High-Precision Mold & Tool Repair: Repairing injection or stamping molds without disassembly. The low heat input and pinpoint accuracy prevent deformation of the expensive mold base.

· Jewelry and Micro-Part Manufacturing: Joining and repairing fine precious metal components (gold, silver, platinum).



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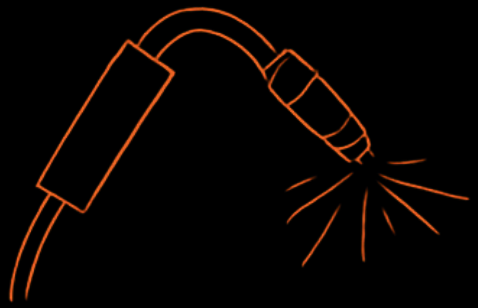
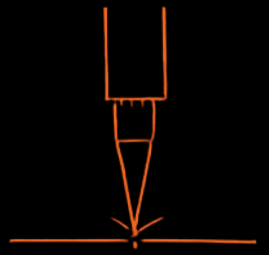
Pulse Laser Welding

Model	ORY QCW
Optical Power Options	750 Watts
Cooling	Water-cooling
Net Weight	80 kg
Volume	0.4 m³
Dimensions	900 × 550 × 700 mm
Gun Weight	0.65 kg
Operating Mode	Pulse
Pulse Width	0.2–50 ms
Input Voltage	AC 220V ±5%, 50/60 Hz
Rated Power	5.5 kW



Applications of Pulse Laser Cleaning

- Metal surface rust removal
- Paint Cleaning
- Oil Stain removal
- Coating surface cleaning and pre-treatment
- Mold cleaning



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Pulse Laser Cleaning

Non-contact cleaning: No damage to the substrate of the workpiece.

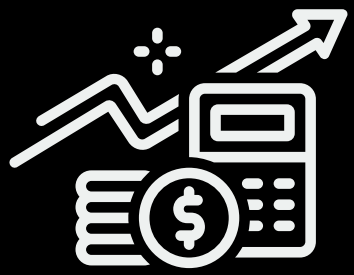
Precise cleaning: Selective cleaning of precise positions and precise dimensions can be achieved.

Environmentally friendly: No chemical cleaning solution is required, no consumables, safe and environmentally friendly.

Simple operation: Simple operation—just power on.
(It can be handheld or used with a robot to achieve automated cleaning.)

High efficiency: High cleaning efficiency, saving time.

System stability: The laser cleaning system is stable and almost maintenance-free.



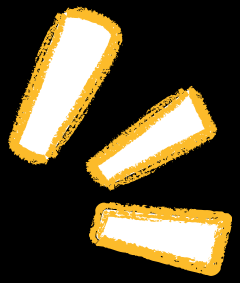
Why Robotic Laser Welding Changes the Economics of Welding

One robotic laser welding cell can deliver the **seam output of ~8–10 manual MIG welders**

Manual MIG → 300–400 mm/min (with filler wire)

Robotic MIG → 500–600 mm/min (limited gain over manual MIG)

Robotic Laser → 3,000 mm/min (5–10x faster)



Robotic laser multiplies productivity.

Produces ~ 8-10 times the seam than a manual MIG welder

In a market with scarce skilled welders, laser welding automation dramatically increases productivity

ORY | WELD

Robotic Laser Welding

Welding Penetration	Maximum Welding Speed	Wire Feeding Range
0.1 - 12 mm	100 mm/min	0.8 - 1.6 mm

ORY|WELD laser welding systems are designed for seamless integration with robotic arms and Special Purpose Machines. While manual laser welding is possible, the full advantages of laser welding—speed, precision, repeatability, and controlled penetration—are realized primarily through automated execution. ORY|WELD provides system integration and solution development, combining laser sources, optics, motion systems, and process control to deliver application-specific automated welding solutions.

Overview

CoilSplice™ is designed specifically for steel mills - both ferrous and non-ferrous - where sheets must be cut and joined before recoiling. This patent-pending solution combines laser cutting and welding in one operation, eliminating manual intervention and enabling seamless continuous processing.

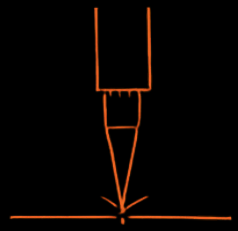
Key Features

Simultaneous Cut & Weld – continuous splicing of steel strips without process interruption.

Laser Precision – burr-free edges, minimal heat distortion, and reliable weld integrity.

High Throughput – designed for the high-volume needs of modern rolling mills.

Automation Ready – integrates easily into mill lines for non-stop coil processing.



ORY | WELD

CoilSplice

CoilSplice™

Laser fusion welding for seamless coil splicing

Patent-pending laser system for continuous sheet-metal cutting and welding in steel mills

Applications

Steel rolling mills
Sheet metal coil joining before recoiling
High-volume metal forming operations

Benefits

Eliminates downtime between coils
Improves mill productivity
Reduces consumables compared to conventional processes
Silent, clean, and operator-safe

Overview

FlowCut™ replaces noisy, grinder-based cutting in pipe production lines with a laser-driven, synchronized cutting system. Its patent-pending design follows the moving pipe during production, delivering faster, cleaner, and more precise cuts.

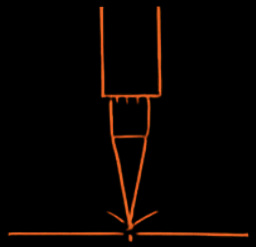
Key Features

Laser Cutting – silent operation with burr-free precision.

Synchronized Tracking – laser head follows the pipe as it is extruded or welded.

High-Speed Processing – significantly faster than grinder-based methods.

Compact Integration – designed for inline use in ERW pipe plants.



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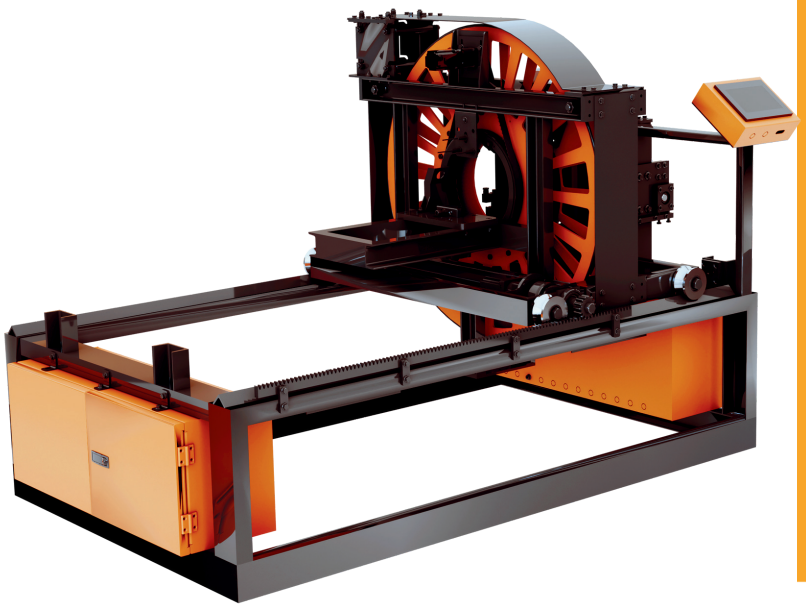
FlowCut



FlowCut™

Synchronized laser cutting for seamless pipe flow

Patent-pending laser cutting system for burr-free, silent, high-speed pipe processing

Applications

ERW pipe manufacturing
Steel tube and pipe production
High-volume fabrication environments

Benefits

Noise-free operation improves work environment
Burr-free finish eliminates costly rework
Boosts productivity and cycle time in ERW plants
Reduces wear and maintenance compared to grinders

NOTES

ORY | WELD

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The **ORY|WELD** Vision

Laser welding is defining the future of metal joining through cleaner welds, higher precision, lower distortion, and repeatable quality.

ORY|WELD goes beyond supplying laser welding systems—we help manufacturers achieve lower total cost of ownership through application-driven laser welding solutions, from manual use to automated robotic and Special Purpose Machine integration.

Developed as a product platform of Redlands Machinery Private Limited, **ORY|WELD** aims to make advanced laser welding accessible, practical, and scalable for manufacturers across India.