rotoweld 3.0

Automated
welding work cell
for pipe spool
prefabrication

tecnar

our sensors, your productivity.

Rotoweld 3.0 brings pipe spool prefabrication into the 21st century

The Rotoweld 3.0 is a fully-automated work cell developed specifically for industrial pipe prefabrication, small pressure vessel manufacturing or other similar 1G welding.

It integrates machine vision, adaptive control and robotic technology in a dedicated package that produces high-quality, full-penetration 1G girth welds five times faster than manual SMAW.

Configured for easy set-up and operation, the work cell can process spools from 3" to 42" in diameter and up to 40’ in length.

Rotoweld 3.0: the vision of the future

The core of the Rotoweld technology is its unique vision-based penetration control system. It enables any operator to perform high-quality girth welds after just a few hours of training.

Like the welder’s eyes and hands, the system continuously analyzes the image of the root weld pool picked up by a video camera integrated into the welding arm. Unique algorithms use this information to adjust welding parameters, such as travel speed, wire feed rate, arc voltage or weaving width.

This constantly adapts the process to varying conditions, such as changes in gap, alignment, root face or temperature. The computer’s fast reaction time means the machine can work at high deposition rates and travel speeds at which weld pool conditions are too critical to be sustained by hand.

The Rotoweld 3.0 twin configurations include two separate work bays and rotators to maximize the work cell’s throughput by allowing one work bay to be re-loaded while welding in the alternate one. The motorized welding carriage travels between work bays along a continuous track system, which also guides the idler rolls to maintain perfect alignment along the full length of the machine

Technical specifications

Average welding time

One dia-inch per minute

Example: 8 min for an 8 in. standard wall pipe

Materials

Carbon steel (including low-temp applications)
Cr-mo steel alloys (may not require preheat)
Duplex stainless steel

Welding processes

Root pass	GMAW (short circuit)
Fill pass	GMAW (spray transfer) FCAW (flux core) SAW (submerged arc)

Rotator

Diameter capacity	75 mm to 1 067 mm/3 in. to 42 in.
Center line clearance to ground	1 605 mm/65 in.
Operation speed range	0.2 to 2 rpm
Load capacity	1 360 kg/3 000 lb.
Maximum torque	3 955 n-m/35 000 lb.-in.

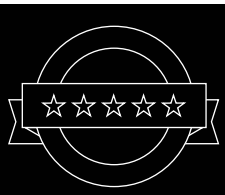
Rails

Shortest configuration length	9.2 m/ 30 ft.
Longest configuration length	23.8 m/ 77 ft.

Idler roll load capacity

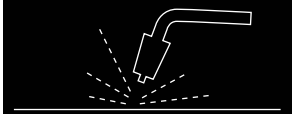
4 535 kg/10 000 lb.

Get the *Rotoweld 3.0* **advantage**:



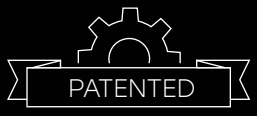
High quality weld–every single time

400% productivity increase

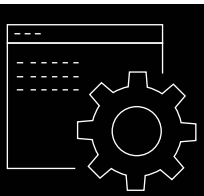


90% Arc-On-Time

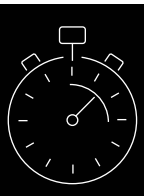
Minimal welding experience necessary



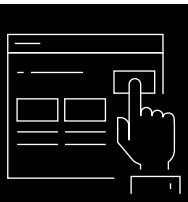
Unique patented technology



Easy set-up and operation

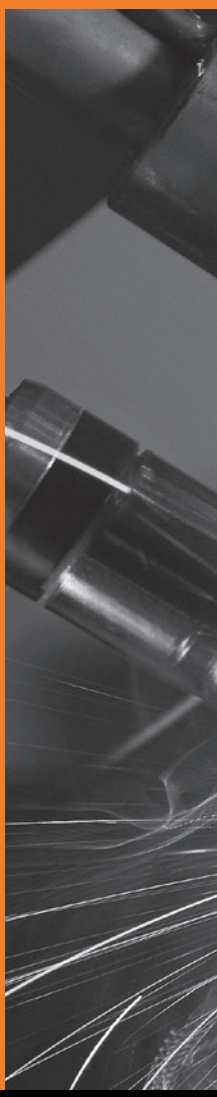


5x faster than manual SMAW or GTAW



Operator-friendly interface

earlier insight changes everything



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References

- Atlantic Construction
- Brent Gedak Welding
- Calefaccion Y Ventilation S.A. De C.V.
- Dearing Compressor & Pump
- Epsilon Industries
- Glenfield Engineering
- Perma-Pipe
- Preferred Energy
- PWC Industries
- US Engineering Company

"We've had Rotowelds in our Lebanon plant for over 15 years... These machines quickly became a vital part of our production operations...Through the years, the Tecnar team delivered excellent response, service and parts delivery and replacement...We purchased Tecnar's latest Rotoweld model, the 3.0. It is a giant leap forward for technical advancement, functionality, performance and up-time. It's been running for over a year now–absolutely trouble-free. Everything was re-engineered, streamlined and, unlike some of the newer technologies, technically intuitive...The new robot manipulator, standard Siemens controls and "off-the-shelf" hardware place the Tecnar Rotoweld exponentially ahead of all their competitors. Tecnar is more than a quality vendor and supplier–they are a direct part of our Perma-Pipe team!"

Gary Renfro
Facilities Director and Chief Engineer
Perma-Pipe Inc.