

rotoweld 3.0®

by tecnar



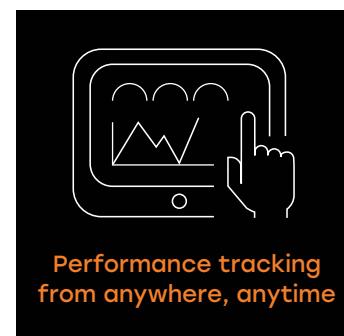
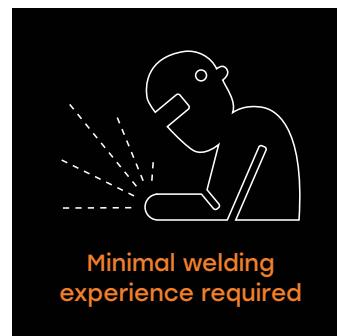
rotoweld.com



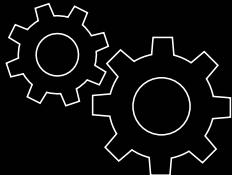
New standard

The **Rotoweld 3.0** is the result of 35 years of experience and evolution. It sets new standards for quality and consistency and offers the ultimate solution to today's labour shortage and short delivery window.

Get the
Rotoweld 3.0
advantage:



Most advanced automated pipe spool welding robot



Customizable
to your reality



High-quality weld every
single time



Tecnar's spirit of innovation began with my father's passion for solving practical challenges with breakthrough technology. Today, Tecnar is still a family-owned company that thrives at the leading edge of our industry. And we still take pride in developing products that deliver value the moment they arrive at our clients' facilities.

The Rotoweld makes automation for spool welding a good decision and a great investment for all of our clients. That's why we have designed an easy-to-use turnkey product that rethinks every inch of the process so operators feel confident, safe and competitive.

Alexandre Nadeau
CEO - Tecnar

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Innovation that sets it apart

The **Rotoweld technology** was first developed and patented at the Canadian Research Council in the 1980s. Today, this vision-based automated control of weld pool penetration is still the most reliable, productive and consistent automated STT process for welding a standard open bevel.

Welding intelligence

PerfectPass-iQ™ delivers true automatic welding

Fully integrated design

Its ease of use guarantees the highest productivity and quality

Prodatalog™

Web-based interface tracks performance from anywhere, anytime

Workflow tracking

The Rotoweld is compatible with MSUITE, STRATUS and PipeServer

User interface

Simple, efficient and easy-to-use operating software

**Imagine...
the best
welder's
best weld.**

**Every.
Single.
Time.**

**And
5 times
faster.**

PerfectPass-iQ

The **PerfectPass-iQ**, Tecnar's latest innovation, consistently tackles the irregularities of real-life fabrication. Developed using a human approach to automate best GMAW practices, it distills 35 years of Tecnar's expertise in automation into a single dependable work cell.

100% hands-off welding

Just press start and watch the PerfectPass-iQ make perfect welds every time. It adjusts the welding parameters in real time, adapting to changes in fitting preparation and overall conditions.

QC insight

The data generated by PerfectPass-iQ is used to create a comprehensive report detailing the pipe preparation and quality of every weld. Each weld is assigned an overall score for a concise performance overview.



- + 5 x faster than manual SMAW or GTAW
- + Patented technology that maintains the arc and weld puddle dynamics in ideal conditions
- + Made to weld typical spool weld preparations
- + Minimal welding experience required
- + Adapts the welding process to varying conditions



Scan QR code to get additional information about PerfectPass-iQ design

Take the rail system advantage to the next level:

The welding robot and the welder are seamlessly carried to a second welding station along the rails, so the Twin Bay model eliminates set-up time and increases productivity.



Fully integrated design

The rails-based design is key to automation since it's the link between the welding robot, the rotators and the support rollers. That's why it's essential to ensure reproducible positioning of the welding torch (stick-out, perpendicularity, angle) and the same welding position every time, regardless of the diameter of the pipe or length of the spool assembly.



Scan QR code to get additional information about fully integrated design

Prodatalog

Prodatalog™ has two main goals: productivity tracking and quality control. This web-based interface gives you access to the Rotoweld 3.0 intelligence and data required to compete in the modern fabricator market.



Scan QR code to get additional information about Prodatalog

Compatible with workflow tracking software

The Rotoweld is compatible with MSUITE, STRATUS and PypeServer, making it a versatile tool for manufacturers who want to streamline their operations and work more efficiently.

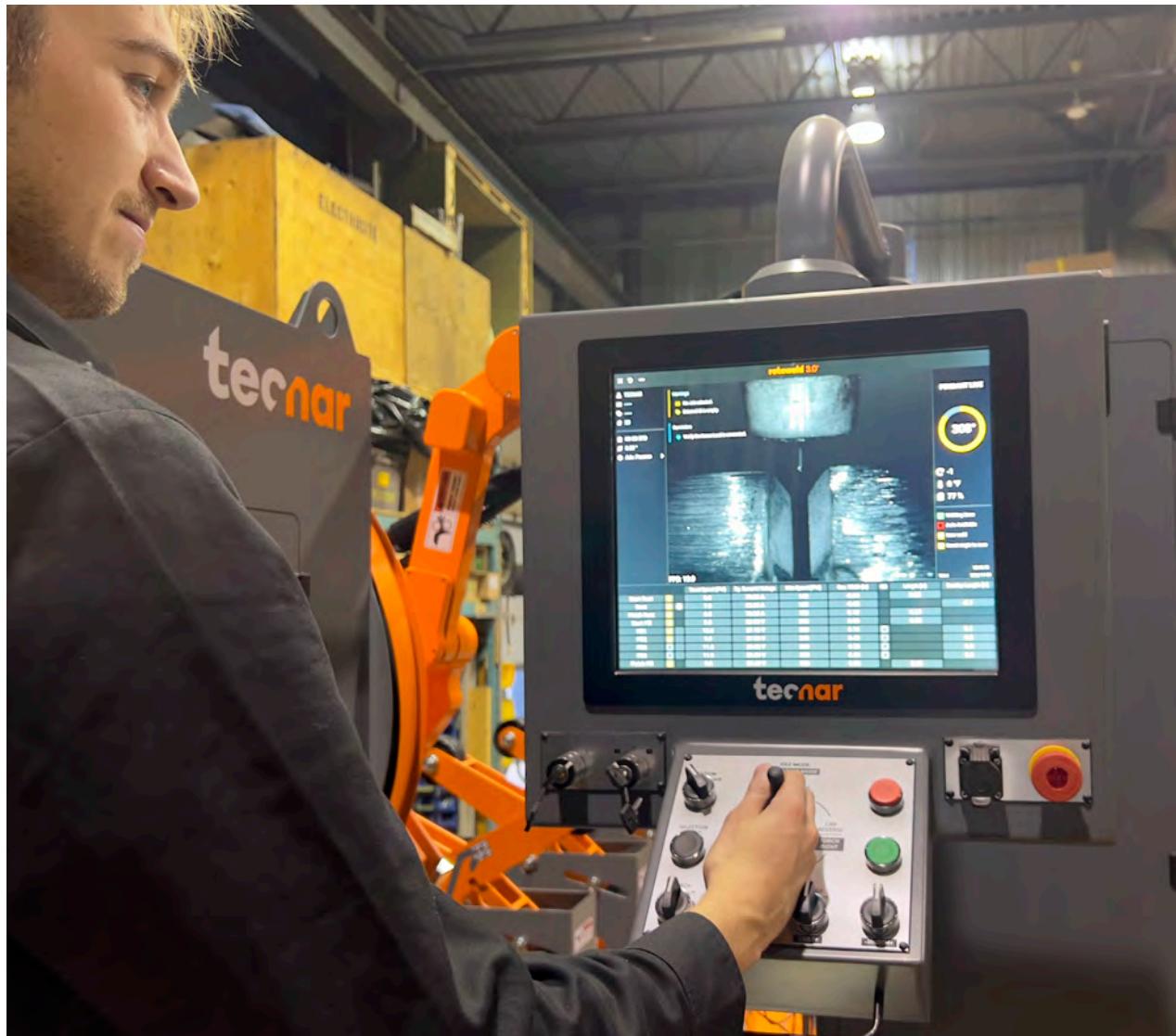
- Easily identifies and pushes the weld ID and information to the Rotoweld software
- Automatically loads the right welding program, if specified
- Links the Prodatalog weld information to the shop's valid weld ID
- Notifies the plant tracking software when the weld is complete
- Sends critical weld information to the weld ID, such as heat input and arc-on-time.



User interface

The Rotoweld user interface is designed with proprietary operating software to be simple, easy to use and efficient. The Rotoweld UI features are:

- Large centred image to ease pre-welding torch positioning using the LED vision system
- Comprehensive welding program architecture to facilitate tracking critical welding settings and uploading new welding programs
- Live display of all welding parameters, including welding current and live heat input
- A simple log-in function so Rotoweld operators can easily enter the ID of the work in progress.



Welding performance

1 min/inch dia

for standard wall
pipes prepared
with 37.5 deg
bevels

1.5 min/inch dia

for heavy wall
pipes prepared
with 37.5 deg
bevels

150+ dia inch

productivity capacity
per shift with
the Rotoweld 3.0
Single Bay

300+ dia inch

productivity capacity
per shift with
the Rotoweld 3.0
Twin Bay

Industry's
highest
productivity
output

Welding programs

The Rotoweld includes a built-in program builder that helps create optimized welding programs for all carbon and stainless-steel pipe sizes. This greatly accelerates WPS qualification. For special alloys and complex welding recipes, our experts can provide remote support to develop customized programs.

Features of the welding programs on the Rotoweld interface:

- User-friendly drop-down menu to load the program based on diameter, material, gauge...
- Step-by-step welding sequences that optimize not only the root, fill and cap but also the start and tie-in of the beads to ensure the highest quality and physical aspect of the weld
- Live cursor during welding that allows the operator to see the progression of the program during welding.

Welding programs in the Rotoweld Prodatalog :

- All the welding programs can be remotely or directly consulted also using the Prodatalog interface
- Back-ups of all the welding programs can be done using the Export To File function from within the Prodatalog
- In the Prodatalog's Weld Inspection page, each logged joint has a complete copy of the welding program used at the time so it makes quality investigation or back-tracking easier for plan managers and operators.

Build Welding Program

To build a program, fill-in the options. If your material, gas or wire is not supported, choose the closest option. You can contact the service team to help you fine-tune your parameters afterwards.

1. Pipe Options

Material: Carbon Steel
Nominal Diameter: 8.00 "
Schedule: STD
Thickness: 0.322 "
Bevel Type: 37.5°

2. Program Options

Root: GMAW STT | 0.045 " Solid | 100% CO2
Fill: GMAW CV | 0.045 " Solid | 92% Ar / 8% CO2
Program Name: 08 CS STD_01

BUILD ✓

Models

**Rotoweld 3.0
Single Bay**

**Rotoweld 3.0
Twin Bay**

**Rotoweld 3.0
Single Bay HD**

**Rotoweld 3.0
Twin Bay HD**

**Welding
torches and
wire feeder**

Manipulator

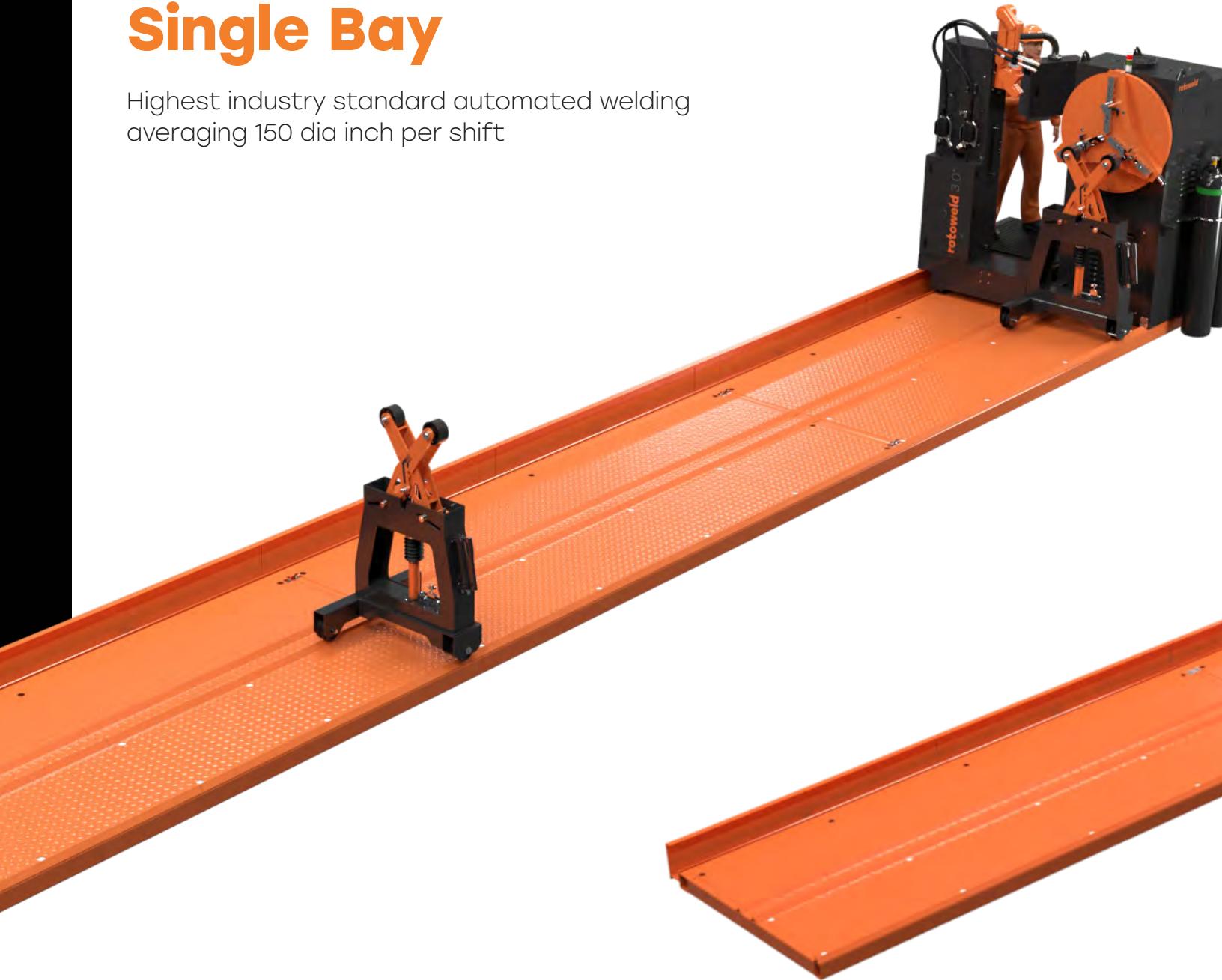
**Proprietary
designed rail**

**Heavy-duty
pipe stands**

**High-torque
rotators**

Rotoweld 3.0 Single Bay

Highest industry standard automated welding
averaging 150 dia inch per shift



Specs

Diameter capacity	3 in. to 42 in. / 75 mm to 1065 mm
Pipe stands capacity	10,000 lbs. / 4,535 kg per pair
Productivity per shift	150+ dia inch



Scan QR code to get
additional information

Rotoweld 3.0 Twin Bay

Double your productivity
by averaging 300 dia inch per shift



Specs

Diameter capacity	3 in. to 42 in./75 mm to 1065 mm
Pipe stands capacity	10,000 lbs./4,535 kg per pair
Productivity per shift	300+ dia inch



Scan QR code to get
additional information

Rotoweld 3.0 Single Bay HD

Built to work hard with exceptional heavy-duty performance and capability



Specs

Diameter capacity	3 in. to 48 in. / 75 mm to 1219 mm
Pipe stands capacity	20,000 lbs./9,072 kg per pair
Productivity per shift	150+ dia inch



Scan QR code to get additional information

Rotoweld 3.0 Twin Bay HD

Superior performance to do
bigger jobs better and faster



Specs

Diameter capacity	3 in. to 48 in./75 mm to 1219 mm
Pipe stands capacity	20,000 lbs./9,072 kg per pair
Productivity per shift	300+ dia inch



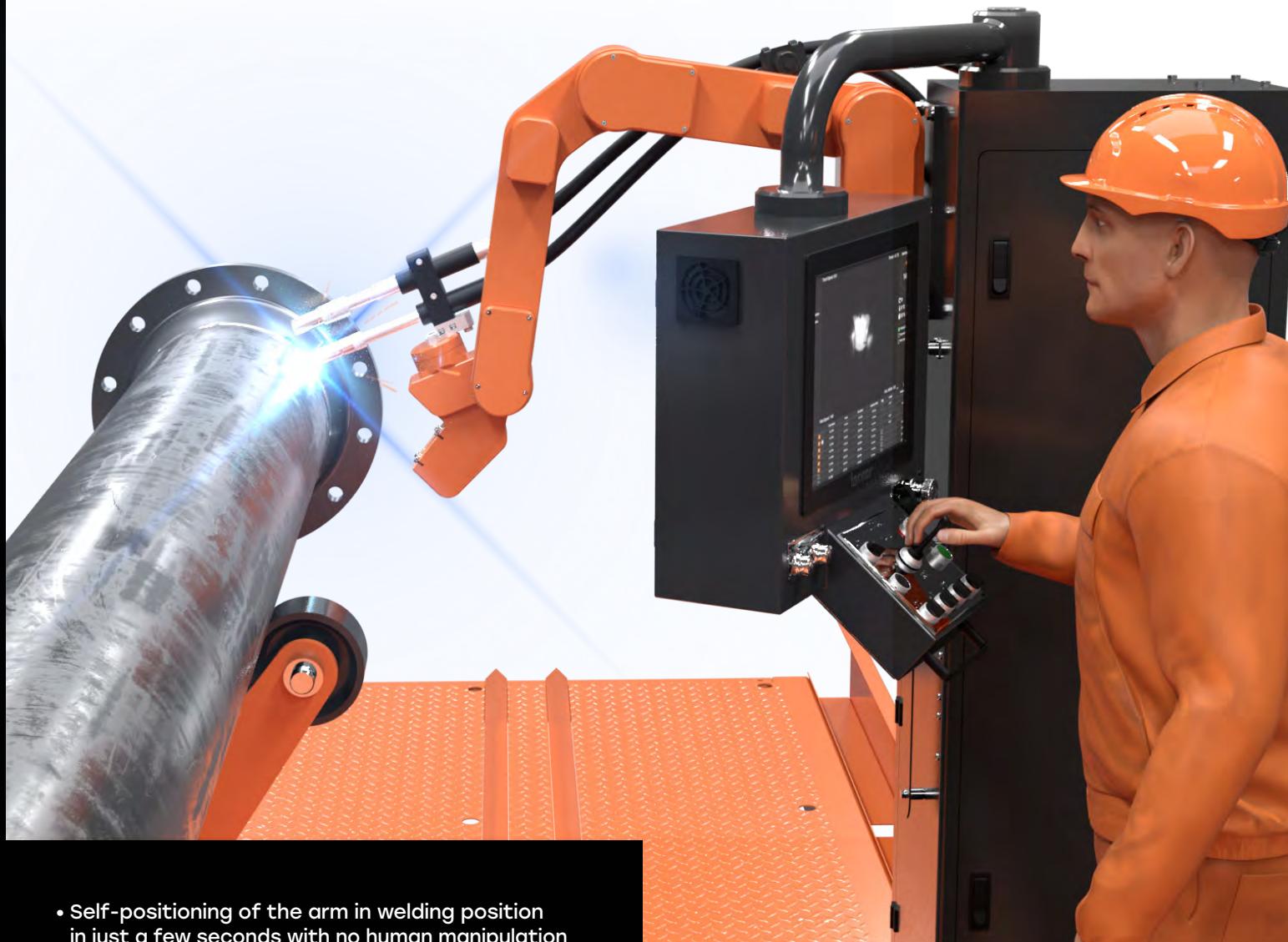
Scan QR code to get
additional information

Welding torches and wire feeder



- Designed with 2 welding torches:
one to perform open-root-pass butt welds
and the other for filling passes
- Each torch has its own wire spools
 - Root pass is done in GMAW
 - Choices for fill passes: GMAW, FCAW, MCAW
- Torches can be easily switched
 - Optional SAW
- Separate gas shielding system for each torch
- Robotized torch manipulator for fast
and repeatable torch positioning on selected
pipe diameter.

Manipulator



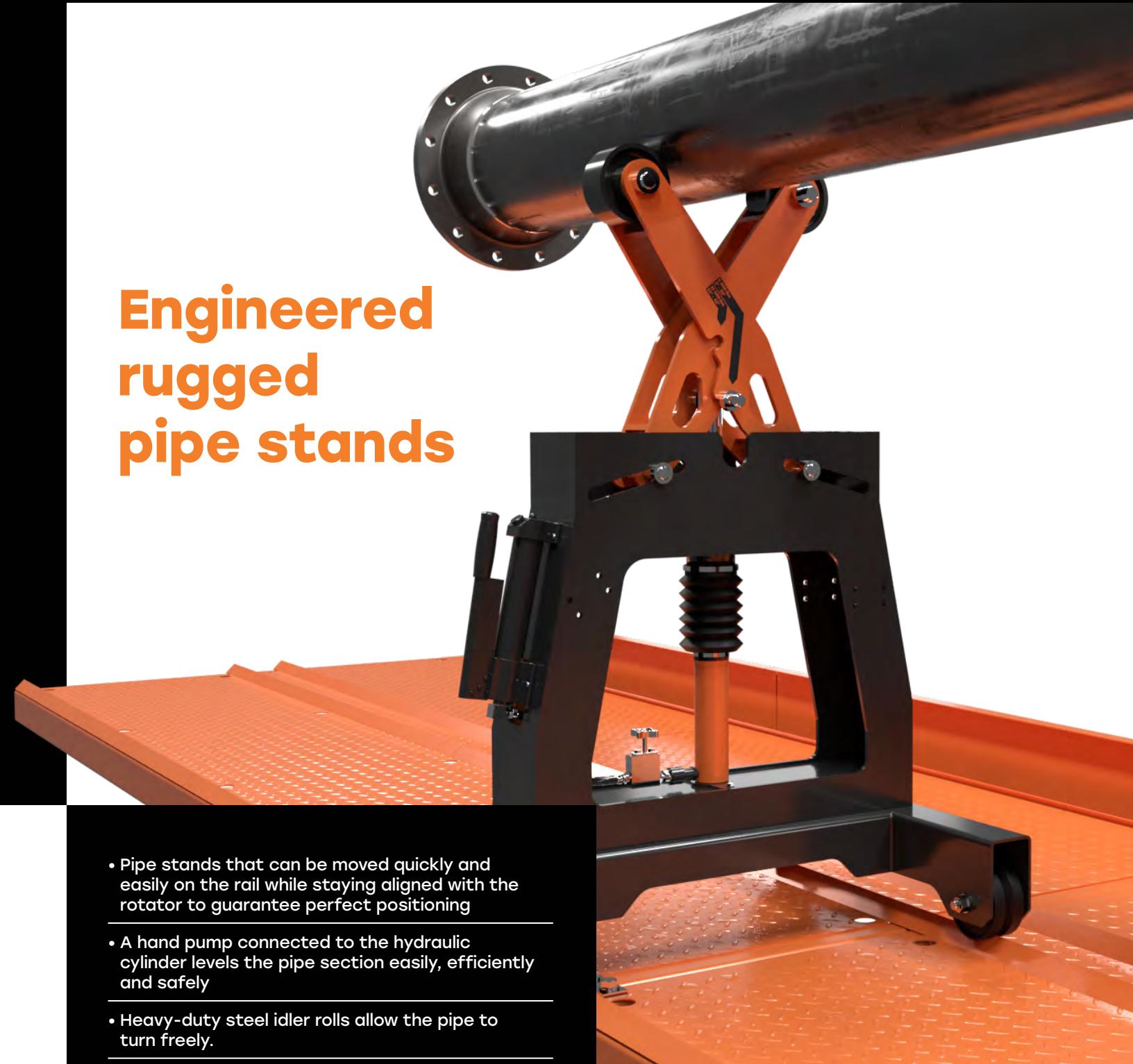
- Self-positioning of the arm in welding position in just a few seconds with no human manipulation
- Welding vision system controls the puddle penetration and adapts welding parameters in real time
- Embedded LED lighting allows the welder to easily align the torch in the bevel before starting to weld.

Proprietary designed rail system



- Rails are the backbone of the Rotoweld 3.0 and can be leveled to accommodate any shop floor conditions
- Rails are factory pre-assembled and pre-aligned for maximum on-site precision
- Seamless integration; no wires lying on the ground
- Welding station and optional fume extractor travel on the rails to desired position simply by using the joystick
- Length
 - Single Bay comes with 2 rails for a total length of 32 ft. (9.75 m)
 - Twin Bay comes with 5 rails for a total length of 80 ft. (24.4 m)

Engineered rugged pipe stands



- Pipe stands that can be moved quickly and easily on the rail while staying aligned with the rotator to guarantee perfect positioning
- A hand pump connected to the hydraulic cylinder levels the pipe section easily, efficiently and safely
- Heavy-duty steel idler rolls allow the pipe to turn freely.
- Diameter range:
 - 3 in. to 42 in./75 mm to 1,065 mm
 - 3 in. to 48 in./75 mm to 1,219 mm (HD models)
- Load capacity per pair:
 - 10,000 lbs./4,535 kg
 - 20,000 lbs./9,072 kg (HD models)

High-torque rotators



- Minimal set-up time required due to its self-aligned design
- Diameter capacity:
 - 3 in. to 42 in./75 mm to 1,065 mm
 - 3 in. to 48 in./75 mm to 1,219 mm (on HD models)

Centre line clearance to ground:

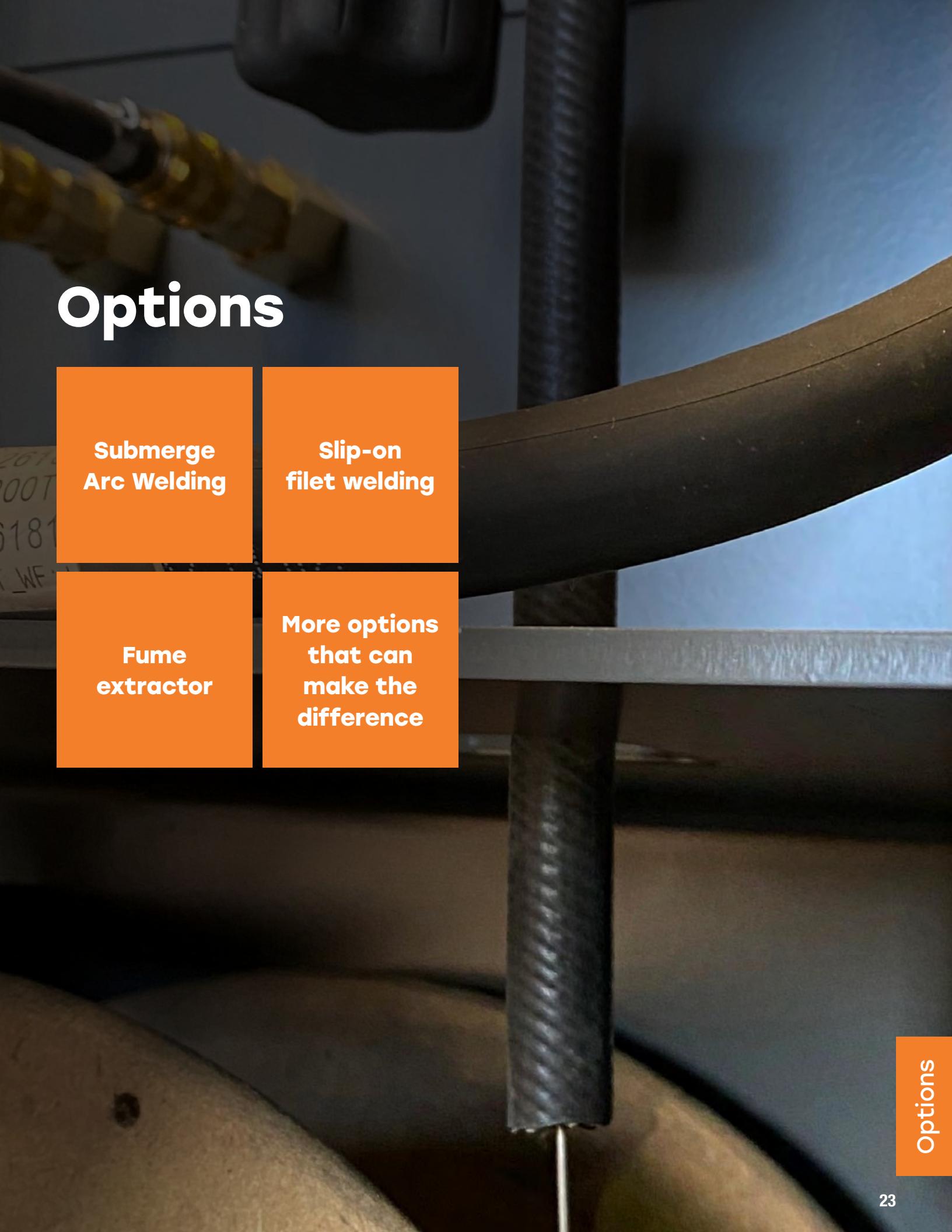
- 65 in./1,605 mm
- 71 in./1,803 mm (on HD models)

Operation speed range: 0.2 to 1.9 rpm

Load capacity: 3,000 lbs./1,360 kg

Maximum torque: 50,000 lbs.-in./5,649 n-m

Optional stainless steel grippers.



Options

**Submerge
Arc Welding**

**Slip-on
fillet welding**

**Fume
extractor**

**More options
that can
make the
difference**

Submerge Arc Welding

Get the advantage of achieving your root pass and SAW filling on the same machine while reducing the handling time, simplifying the shop operations and improving productivity.



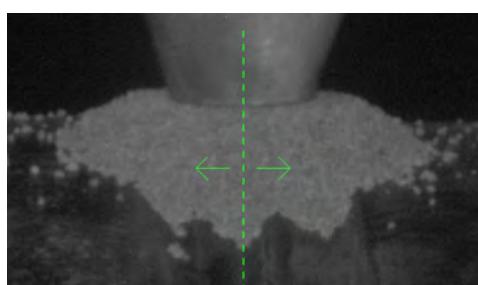
Dedicated twin torch holder

The SAW option features a dedicated twin torch holder with the MIG root pass torch and SAW torch kit for 3/32 wire. It takes less than 20 minutes to change from the MIG-MIG to the MIG-SAW configuration.



Recovery bins

Flux recovery bins, engineered to be easily emptied, are a great advantage of the SAW option. They are mounted directly on the idler rolls so they can be easily placed under the joints and swapped from one side of the idler roll to the other.



Adapted vision system

The Rotoweld's LED vision system allows the SAW torch to be positioned on top of the pipe while safely staying on the welding carriage. The SAW vision mode also provides a linear guide as an overlay on the screen to help the welder create a smooth surface finish between passes.

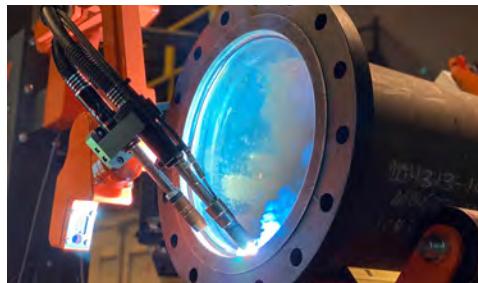


Power source

The SAW option comes with a Lincoln Flextec 650 power source and the Lincoln Power Wave® S500, plus a 100 pound flux pressure feed tank.

Slip-on filet welding

To optimize the number of joints that can be automatically welded in a fabrication shop, Tecnar has designed a Rotoweld 3.0 option to perform filet welds on slip-on flanges.



Seamless integration

This option is a seamless enhancement of the Rotoweld's manipulator in order to rotate the welding torches sideways, anywhere from 0 to 58 degrees, for both exterior and interior filet welds.



100% reproducibility

The torch angle and welding angle are adjustable on the welding program for absolute reproducibility and ease of use.

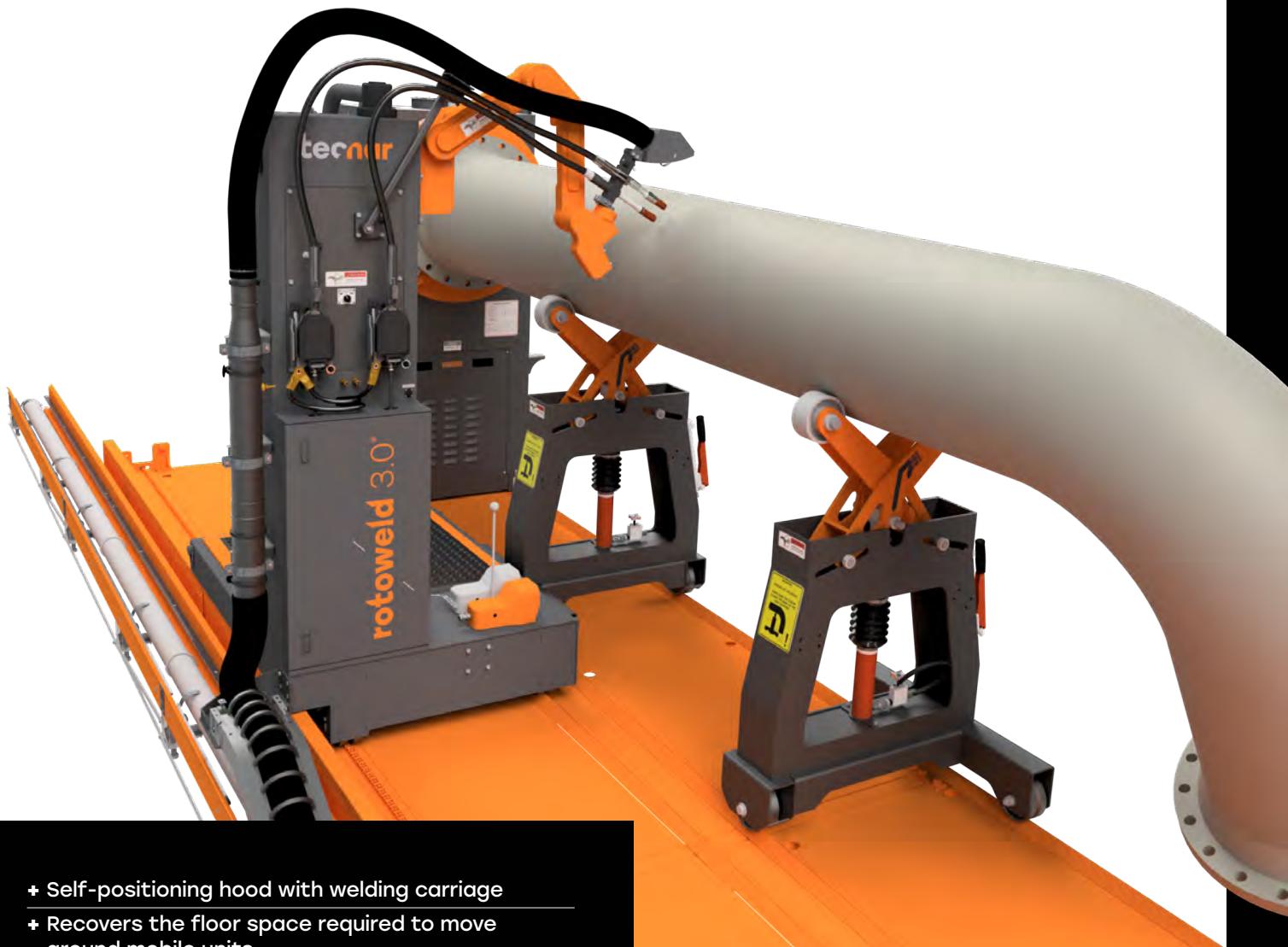


Fully automated positioning

The filet weld options come with a secondary remote control unit that can be displaced anywhere around the spool so operators can always keep an eye on the process.

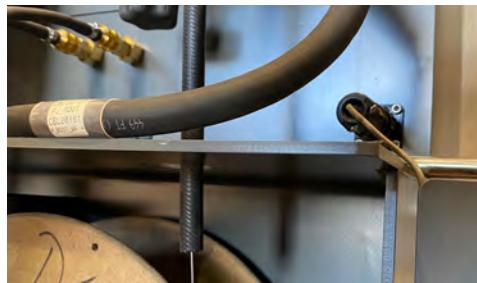
Fume extractor

Welding fumes can be a threat to the welder's health and they can make the shop environment an uncomfortable workspace. And with the labour crisis in most developed economies, providing a safe work environment has become mandatory.



- + Self-positioning hood with welding carriage
- + Recovers the floor space required to move around mobile units
- + Easy-to-access pump and filters
- + Silent operation at the welding station
- + Easy to install and more affordable than wall-mounted systems
- + More environmentally friendly than wall-mounted systems

More options that can make the difference



FCAW (flux core)

Your Rotoweld 3.0 can easily be switched to FCAW since all you need are adapted feeder rolls. Get them on your initial order and be ready in no time, when needed, at minimal cost.



Stainless steel grippers

If you dedicate a Rotoweld for stainless steel operations, then it's best to go for the highest standard and have all the grippers changed to stainless steel too.



Extra pipe stands

Enhance your Rotoweld setup with optional extra pipe stands. Add more stands to handle multiple spools, maintain perfect alignment with the rotator, and ensure consistent, high-quality welds while improving efficiency and saving time.

- 
- Before it starts
 - Step-by-step installation
 - Training
 - Ongoing support and warranty

Installation and training

The Rotoweld 3.0 integrated design ensures that installation and training can be completed in less than a week: 2 days for installation and testing and 3 days for operator training.

Recommended personnel during the training period

- 1 to 2 qualified or experienced welders
- Shop superintendent and/or plant manager
- Quality control manager and/or inspection manager

Before it starts

+ 5 crates will be delivered to your facilities

+ To unload the equipment you'll need a 5-ton capacity forklift truck

+ The shop area that needs to be cleared out for installation is min 240 sqft and max of 600 sqft depending on the model you will be installing

+ Minimum requirements for commissioning

- Gas cylinders (c/w regulators):

- 1x 100%CO - CGA 320 (root)
- 1x 92%Ar.-8%CO - CGA 580 (fill)
- Wire:

- 3 x (20-kg spool) Lincoln SuperGlide® AWS: ER70S-6 wire, 0.045"

+ Recommended inventory for production

- Gas cylinders (c/w regulators):

- 5x 100%CO (root)
- 10x 92%Ar.-8%CO (fill)
- Wire:

- 8x (20-kg spool) Lincoln SuperGlide® AWS: ER70S-6 wire, 0.045"

+ Coupons* for testing and procedure adjustments

- 4x SCH 40 - 6" dia

- 4x SCH 40 - 8" dia

- 4x SCH 40 - 10" dia

- 4x SCH 40 - 12" dia.

- 4x SCH 160 - 10" dia.

+ Access to miscellaneous equipments

- Cutting: flame, plasma, saw, or lathe

- Tacking: GMAW manual welding machine

- Grinding: power grinder c/w six (6) 1/8" thick (3 mm) disks



Step-by-step installation

Step 1

Rails installation

4 to 6 hours

Step 2

Nylatube & intrack installation

2 hours

Step 3

Master positioner installation

1 hour

Step 4

Slave positioner installation

1 hour

Step 5

Welding carriage installation

1 hour

Step 6

Pipe support installation

30 minutes

Step 7

Nylatube protector installation

2 hours

Step 8

Start-up & Ethernet connection

1 hour



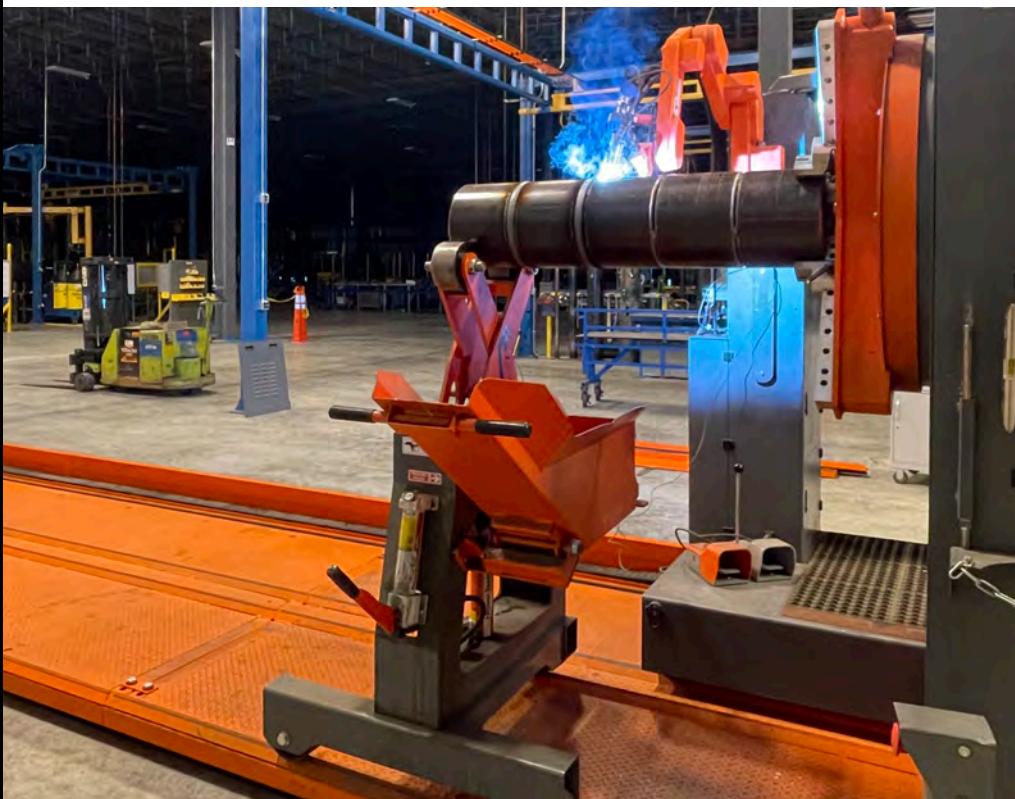
Training

On-site training

With a five-day plan for any Rotoweld installation, two days are dedicated to installation and start-up and three days focused on training. Clients can also do most of the installation themselves by following the Rotoweld's self-installation guide. It means that start-up is completed on the first day, leaving four days for training.

Over-your-shoulder assistance

Through our dashboard, we monitor every Rotoweld and alert you to red flags before they become problems. Our automated data analysis detects trends in tack, gap, and preparation quality, preventing costly rework. When needed, our experts deliver in-depth welding data analysis on demand. With PerfectPass-iQ and cloud-based monitoring, you gain higher productivity and consistent weld quality.

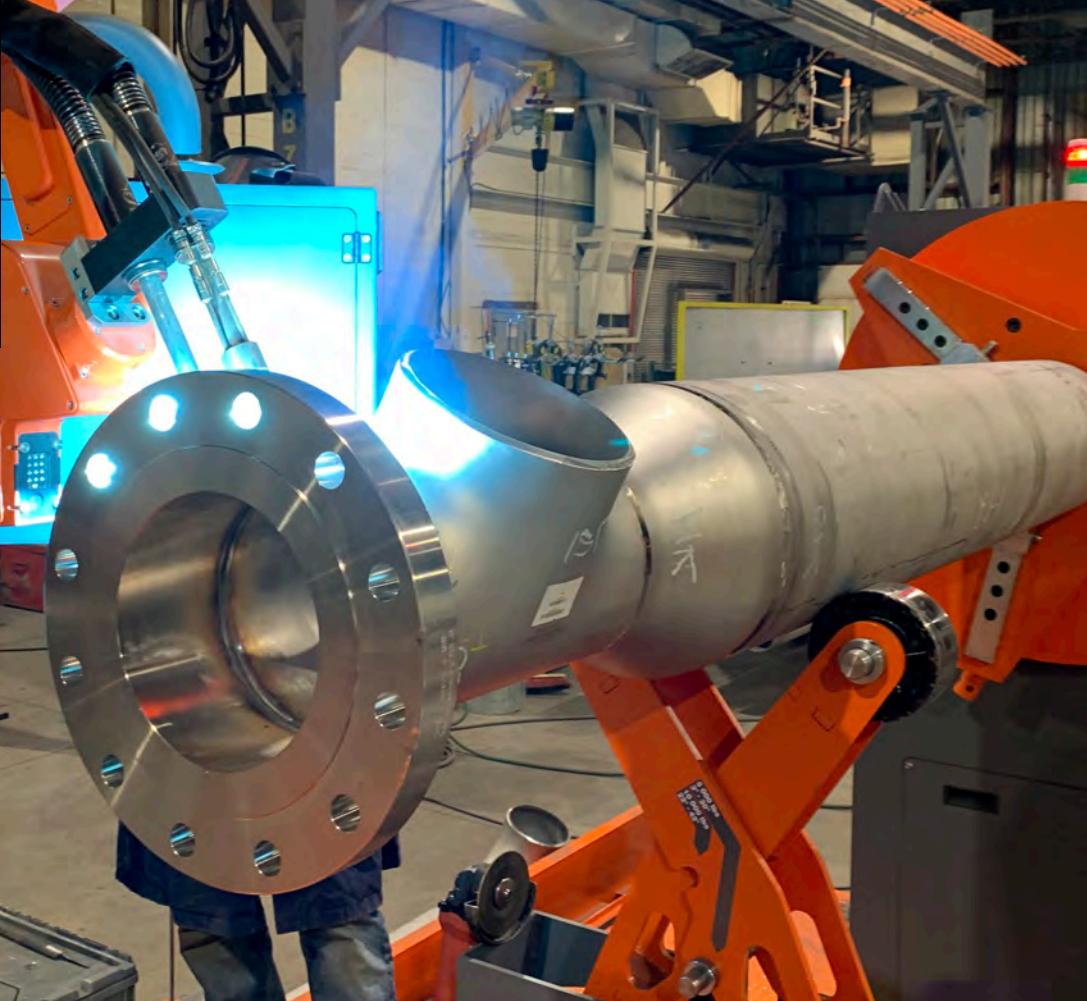


« The Rotoweld 3.0 is a mature product and we like it a lot. But I think we like the support team at Tecnar even better. »

Jason Haskin - Perma-Pipe
Facility Engineering

Ongoing support and warranty

Tecnar brings together nearly 100 professionals across service, engineering, production, and marketing. We stay closely connected with every Rotoweld client, ensuring a response within 24 hours. All Rotoweld parts are kept in stock at Tecnar and can be shipped overnight worldwide. Through our cloud services, our experts can quickly analyze problematic welds and provide free assistance backed by years of hands-on experience.



Score Reviews

4.8/5

9 review



Testimonials

Satisfied
clients

Ragan
Mechanical

PWC
Industries

Perma-Pipe

Testimonials

Satisfied clients

A recognized technology, fully proven by 35 years of experience in automated welding and hundreds commissioned Rotowelds around the world.

Hundreds of

Rotowelds at work around the world



Ragan Mechanical

Ragan Mechanical is a mechanical contractor in residential, commercial and industrial sectors. In 2016, they invested in their first Rotoweld 3.0 Single Bay. Three years later, they decided to invest in a second unit so machines could be dedicated to different metallurgical groups, if necessary. Today, they know that they can count on the Rotoweld 3.0 Single Bay to deliver high-quality work, every single day.

99.7%

X-Ray pass

90%

of spools are welded with
the Rotoweld

2X

Rotoweld Single Bays:
Carbon steel/Stainless steel



Key to addressing the shortage in the welding workforce

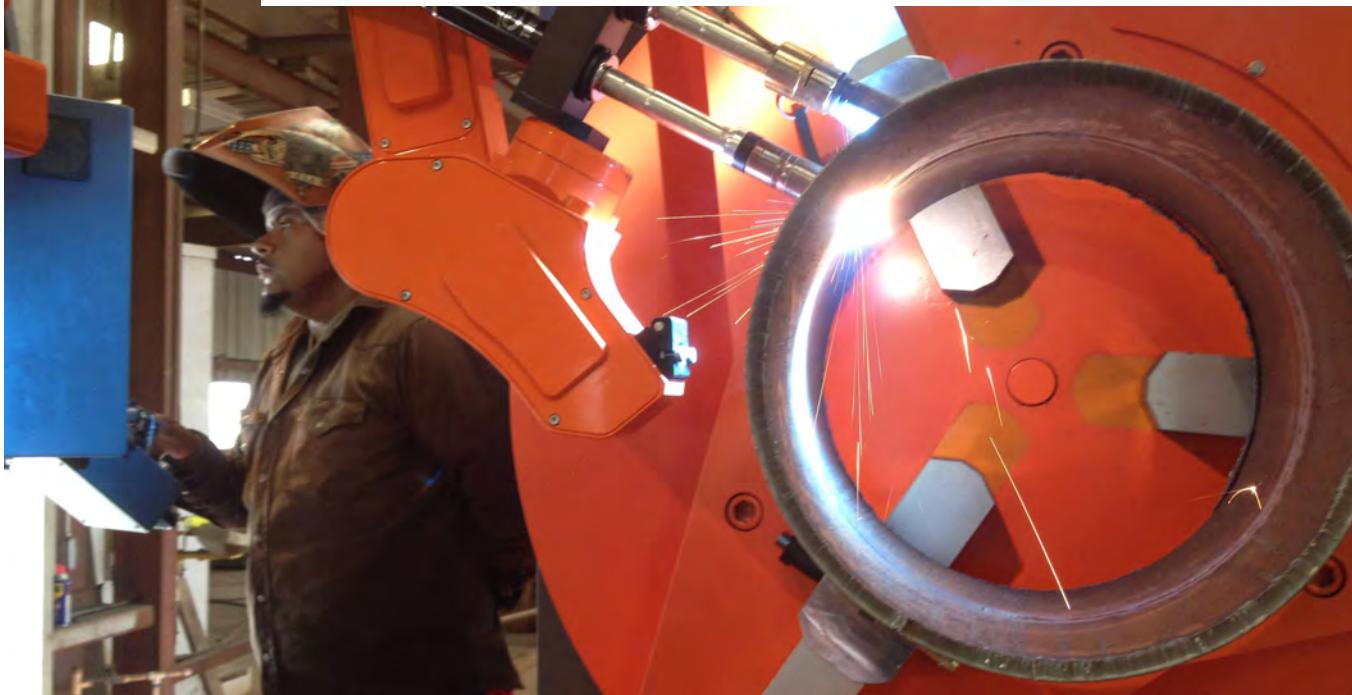


PWC Industries

PWC industries was a typical small family-owned business that jumped into welding automation in 2003 and since then they renewed their Rotoweld for the 3.0 Twin Bay in 2015. The main goal was to run with minimum employees for maximum throughput, without affecting the quality and consistency. This strategy has never been more appropriate since, according to the American Welding Society, the industry will face a shortage of about 400,000 welding operators by 2024.

“We like our Rotoweld 3.0 because it reduces the challenge of labour and allows us to deliver a job in record time.”

PWC's investment in technology gives them the competitive advantage of building steel systems in less time than many other steel manufacturing businesses. This increased productivity is passed on to our customers in the form of decreased costs.



Perma-Pipe

Tecnar has enjoyed a long and prosperous partnership with Perma-Pipe. Over the years, they have purchased 3 Rotowelds - their last was a Rotoweld 3.0 Twin Bay model in 2014. In their experience, this model has reached the level of maturity that makes it both easy to use and highly productive. On a busy day, they can weld an average of 25 joints on 12-inch diameter pipes in a 10-hour shift. As Jason Haskin, Facility Engineering Manager, says, "When you get used to a low rework rate like we have with the Rotoweld, you can't go back."

300 dia in

on a busy day

5★

Tecnar service team
approval rating

top level

of Rotoweld 3.0 product maturity



Materials

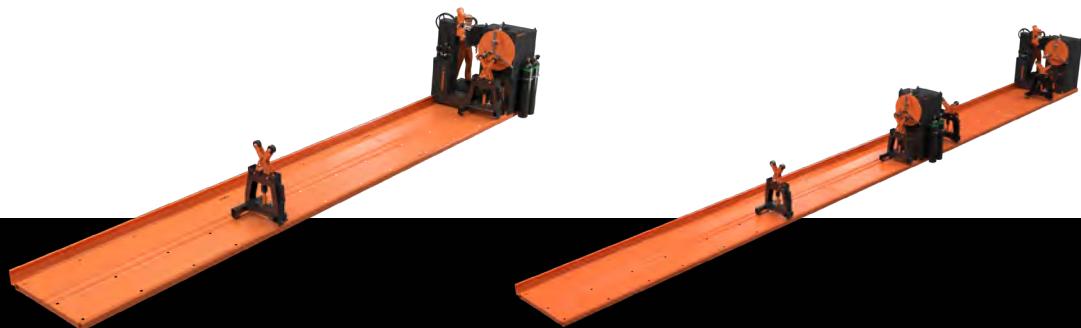
Carbon steel
(including A333 Gr. 6)

Stainless steel
(304, 316 and similar)

Cr-Mo steel alloys

Duplex stainless steel

Technical specifications



Rotoweld 3.0 Single Bay

Rotoweld 3.0 Twin Bay

Welding processes

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

Rotator

Number of rotator	1	2
Diameter capacity	3 in. to 42 in. / 75 mm to 1,065 mm	3 in. to 42 in. / 75 mm to 1,065 mm
Centre line clearance to ground	65 in. / 1,605 mm	65 in. / 1,605 mm
Operation speed range	0.2 to 1.9 rpm	0.2 to 1.9 rpm
Load capacity	3,000 lbs. / 1,360 kg	3,000 lbs. / 1,360 kg
Maximum torque	50,000 lbs.-in. / 5,649 n-m	50,000 lbs.-in. / 5,649 n-m

Pipe stand

Number of pipe stands	2	4
Number of foot pedals	2	3
Load capacity	10,000 lbs. / 4,535 kg per pair	10,000 lbs. / 4,535 kg per pair

Dimensions

Width	7.5 ft. / 2.3 m	7.5 ft. / 2.3 m
Height	9.2 ft. / 2.8 m	9.2 ft. / 2.8 m
Length	32 ft. / 9.75 m	80 ft. / 24.4 m

Welding source

Root pass - STT	Lincoln Power Wave® S500	Lincoln Power Wave® S500
Fill Pass - GMAW	Lincoln Power Wave® S500	Lincoln Power Wave® S500
Fill Pass - SAW	Lincoln Flextec 650 (option)	Lincoln Flextec 650 (option)

Materials

Carbon steel
(including A333 Gr. 6)

Stainless steel
(304, 316 and similar)

Cr-Mo steel alloys

Duplex stainless steel

Technical specifications



Rotoweld 3.0 Single Bay HD

Rotoweld 3.0 Twin Bay HD

Welding processes

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

Rotator

Number of rotator	1	2
Diameter capacity	3 in. to 48 in. / 75 mm to 1,219 mm	3 in. to 48 in. / 75 mm to 1,219 mm
Centre line clearance to ground	71 in. / 1,803 mm	71 in. / 1,803 mm
Operation speed range	0.2 to 1.9 rpm	0.2 to 1.9 rpm
Load capacity	3,000 lbs. / 1,360 kg	3,000 lbs. / 1,360 kg
Maximum torque	50,000 lbs.-in. / 5,649 n-m	50,000 lbs.-in. / 5,649 n-m

Pipe stand

Number of pipe stands	2	4
Number of foot pedals	2	3
Load capacity	20,000 lbs. / 9,072 kg per pair	20,000 lbs. / 9,072 kg per pair

Dimensions

Width	7.5 ft. / 2.3 m	7.5 ft. / 2.3 m
Height	11.5 ft. / 3.5 m	11.5 ft. / 3.5 m
Length	32 ft. / 9.75 m	80 ft. / 24.4 m

Welding source

Root pass - STT	Lincoln Power Wave® S500	Lincoln Power Wave® S500
Fill Pass - GMAW	Lincoln Power Wave® S500	Lincoln Power Wave® S500
Fill Pass - SAW	Lincoln Flextec 650	Lincoln Flextec 650

Rotoweld's configuration

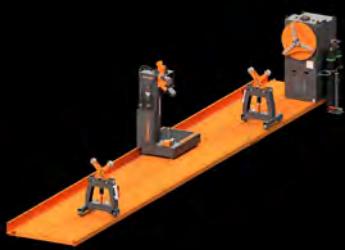
Rotoweld offers a range of configurations to meet the unique needs of your production and the space constraints of your shop. Our specialists can assist you in choosing the best configuration to optimize your welding process.

Rotoweld Single Bay

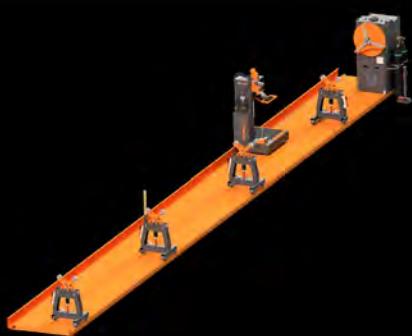
Rotoweld Single Bay 32 ft.



Rotoweld Single Bay 48 ft.



Rotoweld Single Bay 80 ft.



Rotoweld Twin Bay

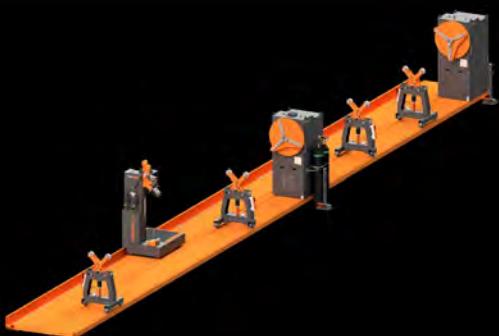
Rotoweld Twin Bay 48 ft.



Rotoweld Twin Bay 64 ft.



Rotoweld Twin Bay 80 ft.

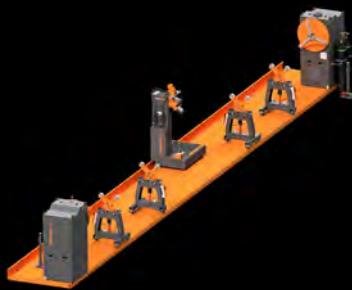


Rotoweld Twin Bay - Face to Face

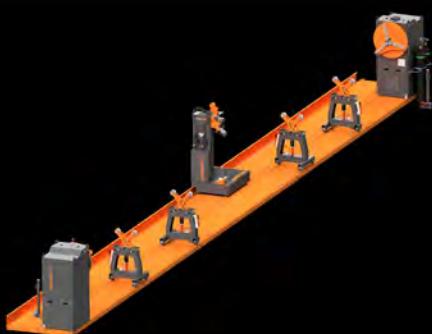
Rotoweld Twin Bay - Face to Face 48 ft.



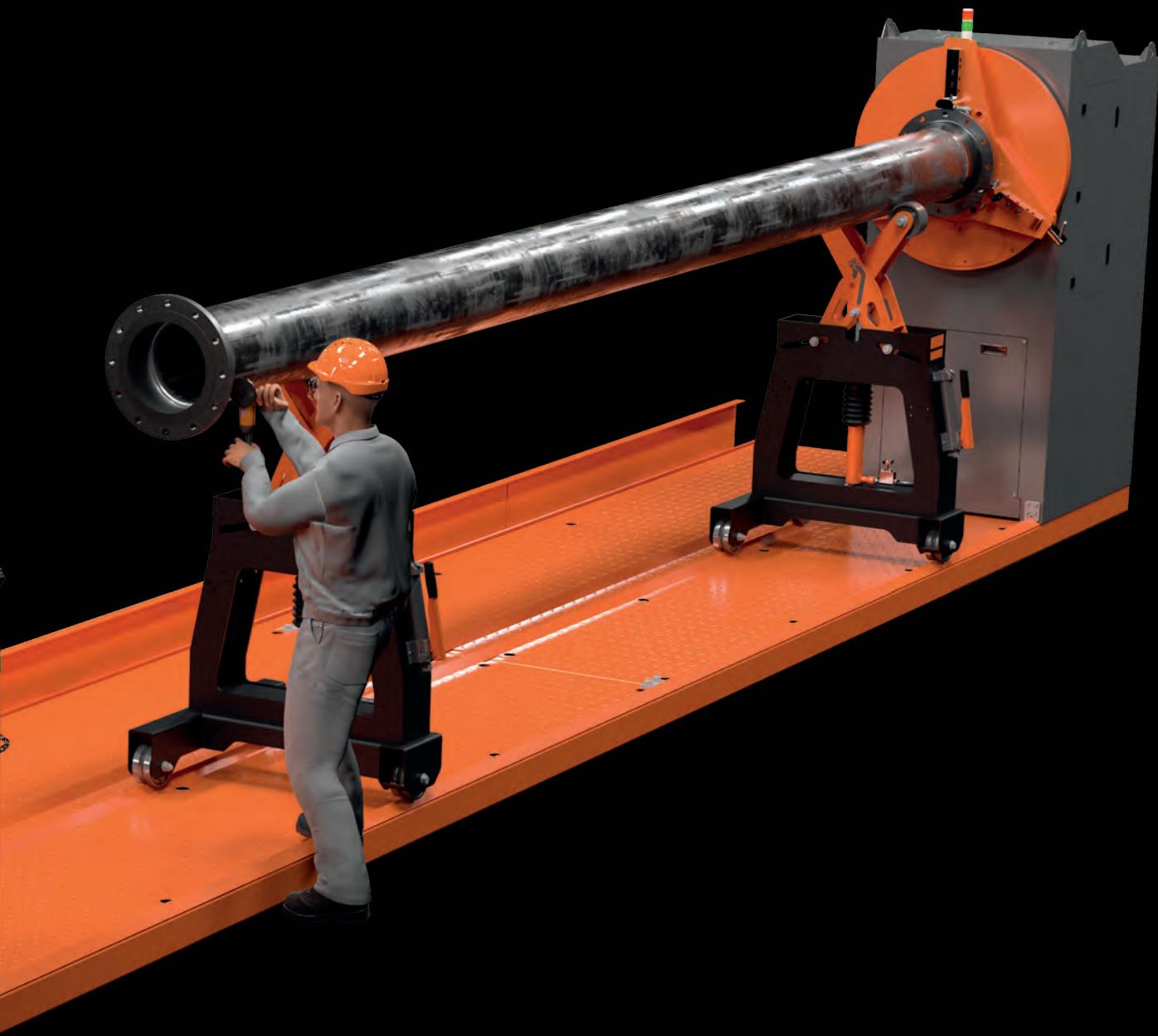
Rotoweld Twin Bay - Face to Face 64 ft.



Rotoweld Twin Bay - Face to Face 80 ft.







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