

Innovative tank building system



We develop, design and produce an innovative system for onsite construction of welded steel tanks. We offer both sales and rental of tank construction equipment around the world. Our innovative technology is suitable for a wide range of tank types and materials.

Using the Nordweld Tank Building System reduces on-site costs and offers numerous benefits such as fewer production hours, improved working conditions, increased safety and better quality. We provide experienced supervisors who help and train customers in the optimal use of our equipment.

+35 years of experience in the tank building sector

50 % reduced costs compared to traditional methods

50 meters in diameter

700 tons of weight

1 container 20 ft = equipment to Ø14m tank

The information contained in this advertising material is provided for informational purposes only. The product specification should be checked against the technical documentation provided by the manufacturer.



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- Wheel Trolley
- Weld Gap Adjusting Jack
- Tank Rotator
- Roller Bed
- Tack Weld Stand
- Weld Stand
- Weld Stand - MIG/MAG
- Weld Stand Arc Tig / Plasma
- Weld Stand SAW
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- Vertical Plate Bending Machine + Decoiler
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General information

OUR TECHNOLOGY - DESIGNED BY A TANK BUILDER FOR TANK-BUILDERS

Nordweld Tank Building System has been awarded for the innovative technology for onsite tank fabrication. The system is flexible and modular, allowing it to be configured based on the tank's size, type, and material. Our equipment allows you to build tanks from pre-rolled plates, coils, or flat materials. We can cover a range of diameters from 7-50m and up to 700T. The maximum height of the tank depends on the ratio between the diameter, height and lifting weight. Our innovative system utilizes a top-down method, enabling all work to be conducted safely at ground level. Starting the construction with the roof ensures weather protection and maintains the tank's roundness during lifting operations. All welding can be mechanized and performed using various processes, including MIG/MAG, SAW, Plasma, or Arc TIG, from a single point. Additionally, all non-destructive testing (NDT) can be conducted from one location at different levels. All components are stored and transported in 20ft HC shipping containers equipped with specialized pull-out racks. The equipment features dedicated lifting points to ensure efficient and safe handling.

MAIN ADVANTAGES

- Reduced production hours,
- Mechanized welding,
- Cost reduction for cranes, NDT and scaffolding,
- All material assembled from one location,
- Rotating the entire tank, advantage when the space on site is limited,
- Safety - all work is done from one location at ground level,
- Possibility to roll the shell material on site,
- Designed to work in harsh environmental conditions,
- High quality of our products,
- Logistical efficiency.

COST SAVING

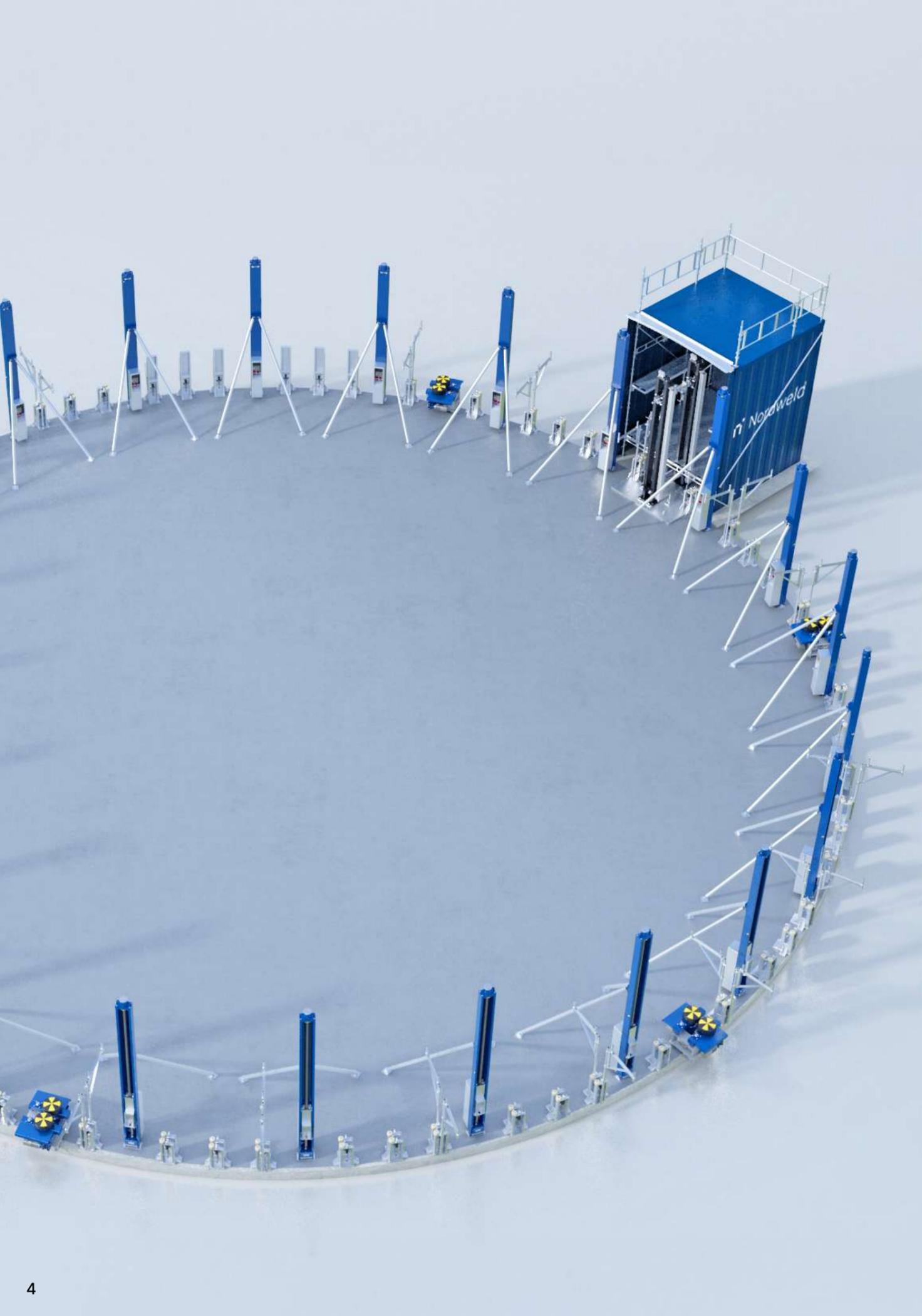
Regardless of which configuration you choose, the advantages are significant.

30-40%
savings

Standard system
with Roller Beds
Pre-roller plates,
mechanized welding

40-60%
savings

Advanced system
with Wheel Trolley & Bending
Machine + Decoiler / Plate Track
More efficient, mechanized welding,
rolling the shell material onsite, using
coil or flat plates



Features of our equipment

Our system utilizes top-down construction technology with electromechanical Lift Jacks, which can be operated individually or simultaneously monitored from a central control system. The entire tank is rotated using Tank Rotators, with the process monitored via remote control, allowing for adjustable speed. To rotate the tank, materials such as roof segments, shell plates, stiffening rings, and nozzles can be assembled from a single location. All welding can be mechanized and performed within a weatherproof welding station. The Nordweld system is an ideal solution for limited space on the construction site.

Nordweld offers two different equipment configurations:

- **The Standard System** – Roller beds assembled on the bottom. The tank is rolling upon the roller beds and pre-rolled plates can be used. This is an all-around system, suitable for various type of tanks. This configuration can manage thicker and heavier tanks. Temporary welded shell attachment lifting beams are required. Additionally, the Standard System can be combined with a vertical bending machine and either a de-coiler or a plate track for flat materials in this configuration.
- **The Advanced System** - Wheel Trolley assembled on the Lift Jack. With the wheel trolley system, the entire tank is supported and rolled on top of the wheel trolley. This setup requires a vertical bending machine along with a de-coiler or a plate track for flat materials. During the bending and feeding of the sheets, alignment and tack-welding of the horizontal joints are performed using the tack weld stand. No welded lifting beams are needed for this process. This system is particularly well-suited for constructing large stainless-steel tanks.

Both configurations can be equipped with an internal scaffolding system positioned between the jacks, which can be installed in two levels. Additional equipment includes a Tack Weld Stand for aligning horizontal joints and fitting stiffening rings on the tank wall, as well as a Weld Stand for various mechanized welding configurations.

+ no prior investment required - you can rent it

a complete system can be rented and delivered to the site, fully operational and ready for use

+ working environment

all work from ground level, mechanized welding and fit up work performed from one location

+ quality control

mechanized welding with different welding processes improve overall quality

+ develop by a tank builder

innovative technology developed from 35 years of experience in the tank building industry

+ logistical advantages

roll all shell material on site allows for more flexibility, customization and efficient construction process

+ Non-Destructive Testing (NDT) from a single position

reduce the time and cost associated, maximized effectiveness and ensuring comprehensive inspections

Gold winner of the Innovative Technology category at the

TANK STORAGE AWARDS



Lift Jack 9T and Lift Jack 15T

TECHNICAL DATA SUMMARY

Electromechanical Lift Jacks used to lift the tanks with top-down method.

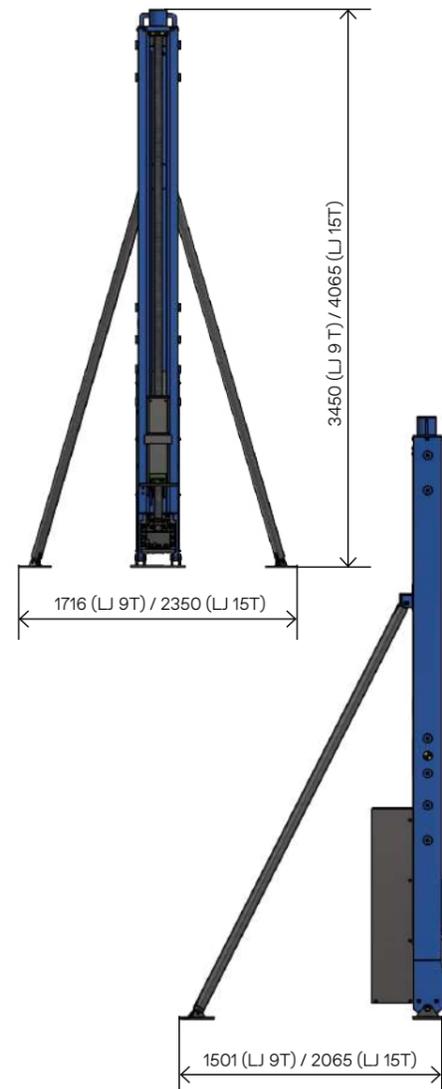
We have two type of lift Jacks:

- 9T capacity with 2100mm lifting stroke
- 15T capacity with 2600mm lifting stroke.

Both Lift Jacks are CE marked and tested with 50% safety margin (dynamic load).

The unique characteristics of our Lift Jacks:

- Electrically operated - easy to maneuver both simultaneously and individually
- Uses a smooth continuously lifting mechanism
- Limit switches in upper and lower position
- Main central with homing function, lifting height settings and a safety control system of each Lift Jack
- Mechanical rotation indicator in the top for an easy overview that all Jacks are running
- No oil spills or leakage when compared to hydraulic systems
- Self-locking, which ensures the highest operating safety conditions
- Faster Operating Times – Approx. 16 minutes to raise or lower 2100 mm (LJ 9T)
- Faster Operating Times – Approx. 25 minutes to raise or lower 2600 mm (LJ 15T)
- Easy and quick assembly of the entire system
- Easy to dismantle from the tank - comes supplied with a specially designed dismantling device which enables to remove the jacks through the manhole after job completion.

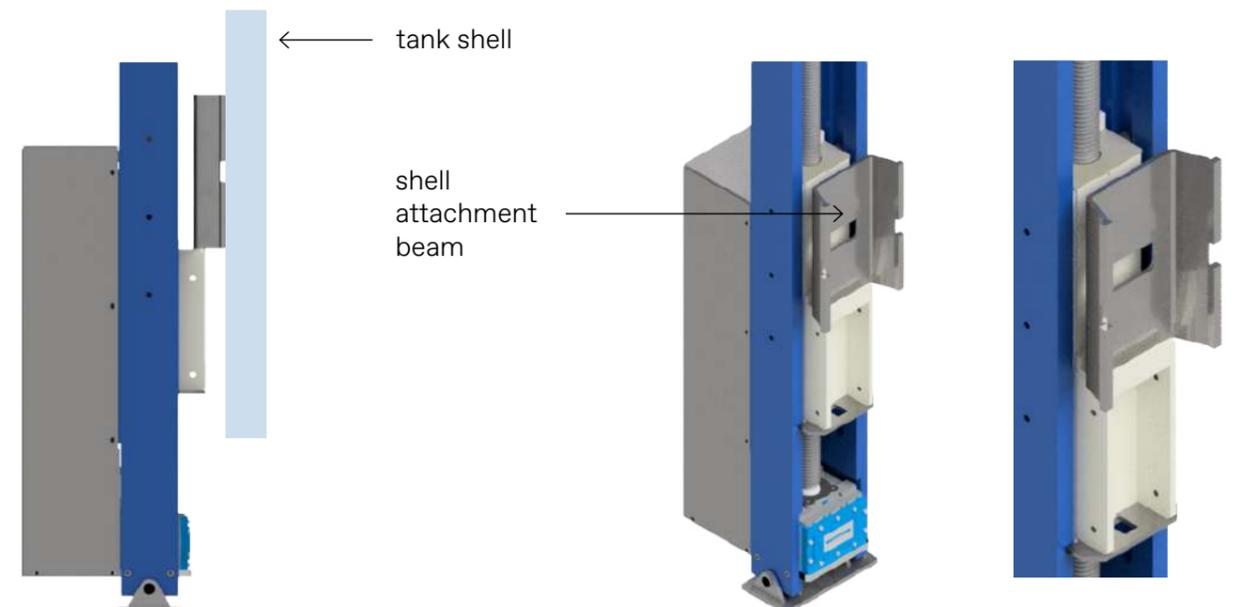


Shell attachment beam

The shell attachment beam is placed on the carriage of the lift jack and then welded to the shell according to the welding specifications outlined in our operating manual (typically 25-100mm on each side, depending on the lifting weight).

In the **Standard System**, beams are used in each course to lift or lower the tank. After the lifting operation, the beams are removed from the shell. Each beam features openings on both long sides to accommodate heavy-duty wedges, facilitating easy removal from the shell.

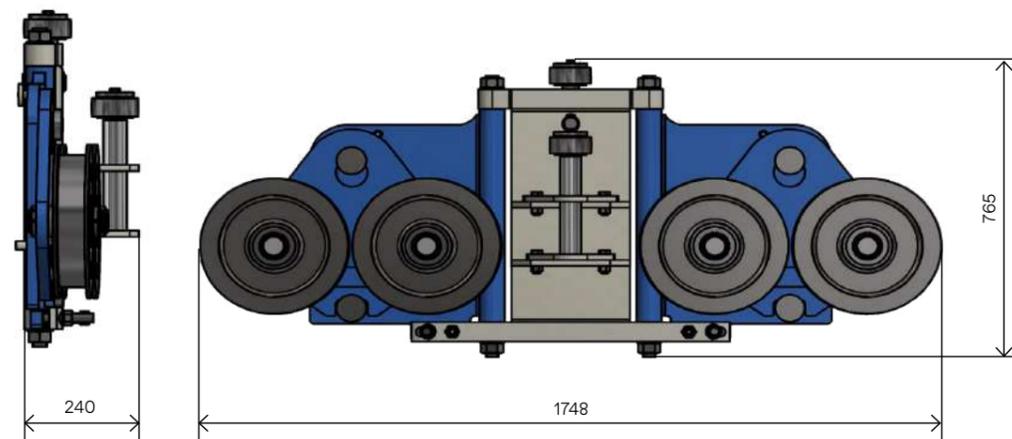
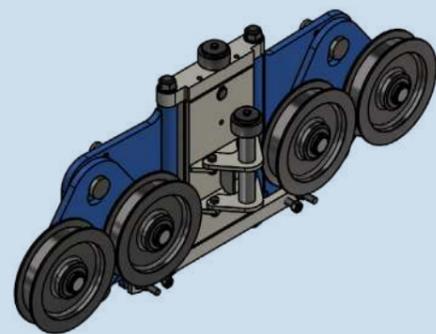
In the **Advanced System (with Wheel Trolley)**, the beams are only used during the final stage of construction, when the wheel trolley is removed, and the tank is lowered to the ground.



Wheel Trolley

TECHNICAL DATA SUMMARY

The Wheel Trolley is a component of our Advanced System and is installed on the lift jack. The entire tank rolls on top of the Wheel Trolley. During the sheet feeding process, the trolleys are lowered individually from their elevated position (shell height) to the lower position using a dedicated high-speed button on the jacks. The Advanced System also requires a bending machine, with the option to include a de-coiler for direct processing from steel coils or to use our Plate Track for flat steel plates.



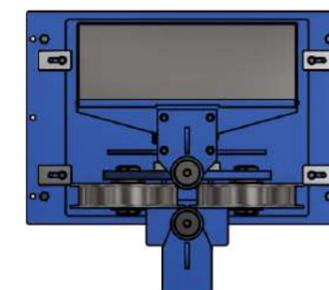
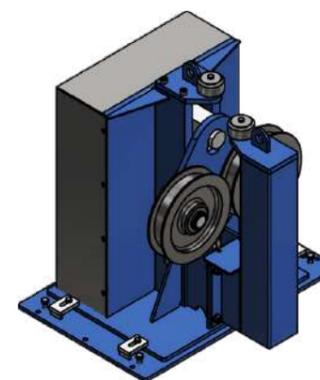
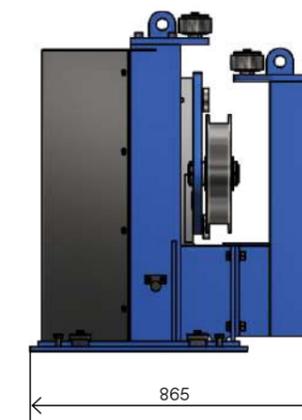
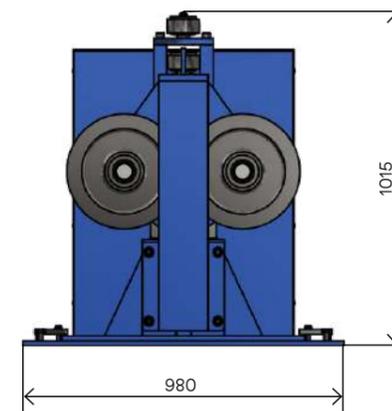
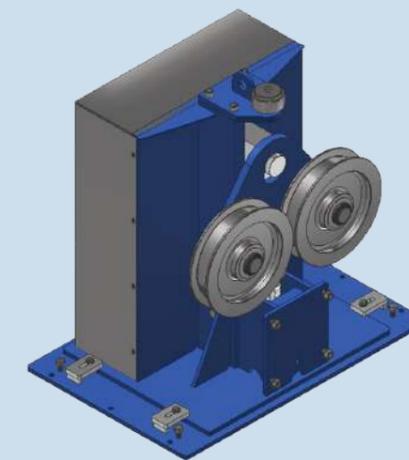
A special wagon facilitates the easy dismantling and transport of the trolley around the tank. Alternatively, the wheel trolley can be disassembled using a telehandler or crane. We provide a specially designed lifting bracket to ensure safe lifting and proper alignment of the wheel trolley during removal.



Weld Gap Adjusting Jack

TECHNICAL DATA SUMMARY

Adjust the weld gap during sheet feeding from the bending machine using the weld gap adjusting jack. This jack, which features a 6,000 kg lifting capacity and a 75 mm lifting stroke, operates via remote control. It is used in our advanced system between the bending machine and the feeding point.



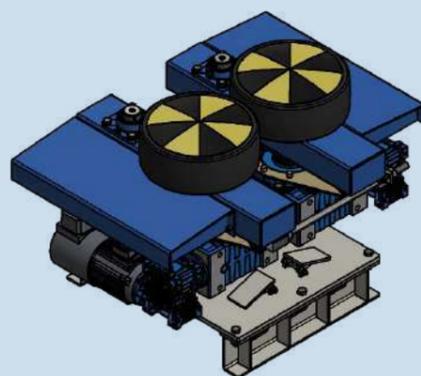
Tank Rotator

TECHNICAL DATA SUMMARY

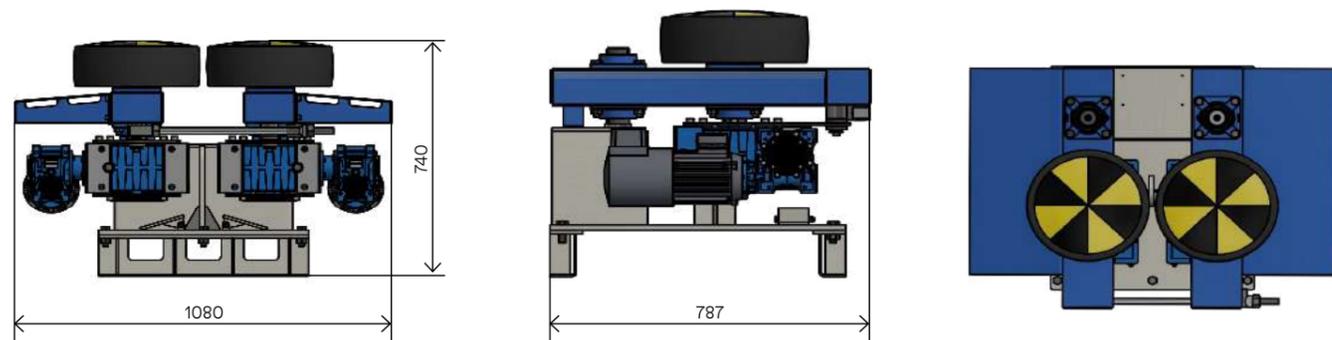
Our specially designed Tank Rotating System, unique in the tank building industry, ensures a fast and efficient construction process. The rotator operates directly from the main base of the tank in a continuous motion, enabling the following construction tasks to be performed safely:

- rotation of installed shell plates/sections during welding of the circumferential seam joints;
- rotate the tank while welding the circumferential seam joints.

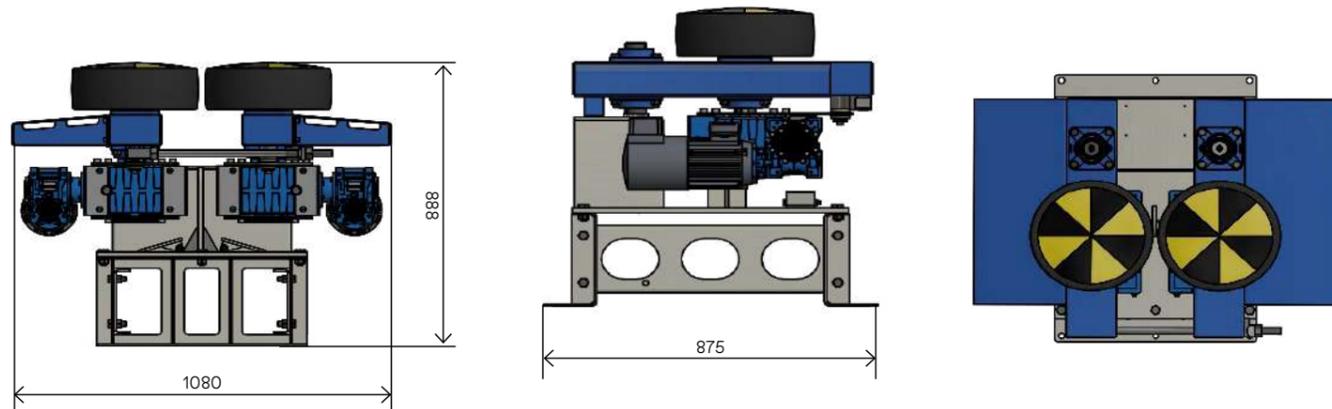
Adjustable rotation speed ranges from 130 to 1,600 mm/min (5 to 63 in/min), controlled via remote.



Base component used in the Standard System



Base component used in the Advanced System



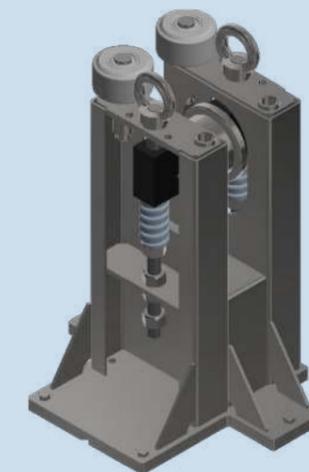
Roller Bed

TECHNICAL DATA SUMMARY

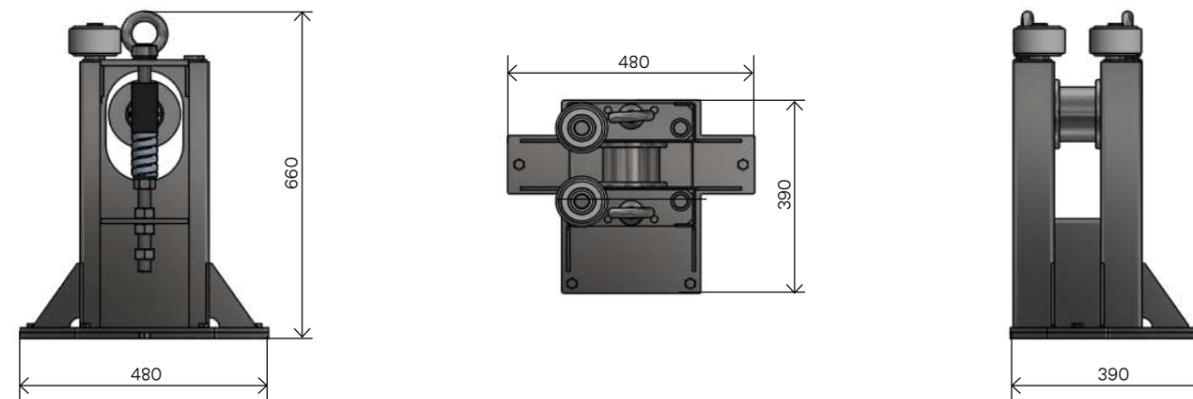
The Roller Beds are positioned around the perimeter of the tank bottom. A flat bar ring is placed on the wheels of the roller beds to distribute the load of the entire tank. As the tank rolls, it moves along with the support ring. Additionally, a special scaffolding pipe can be attached to the roller beds, allowing for the installation of scaffolding consoles to create exterior or interior working platforms.

We offer:

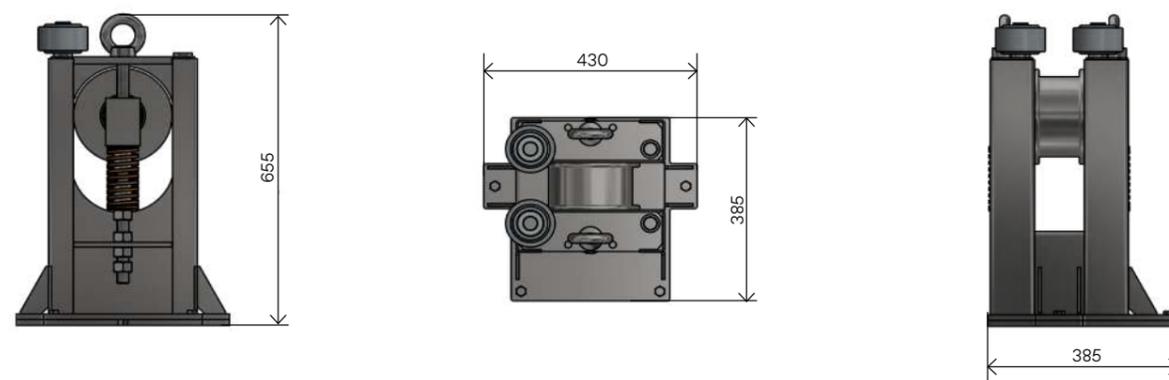
- Roller Bed Standard - max. load: 4T
- Roller Bed Heavy Duty - max. load: 6T



Roller Bed Standard



Roller Bed Heavy Duty



Tack Weld Stand

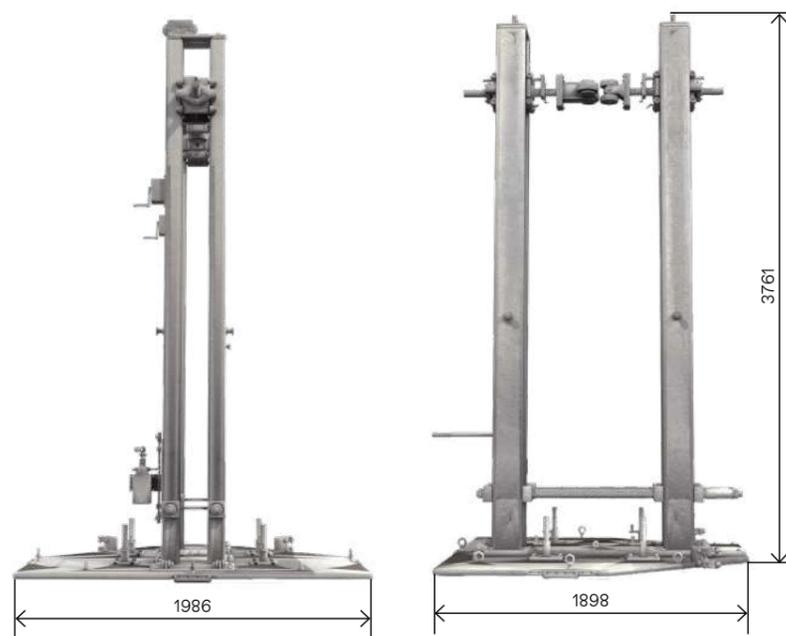
TECHNICAL DATA SUMMARY

Tack Weld configuration

The horizontal joint is aligned as the tank rotates continuously. Tack welding is performed from a single location, making the process simple, fast, and cost-effective. When attaching stiffening rings to the tank wall, the stand can compress each ring segment securely against the tank wall.

Weld configuration

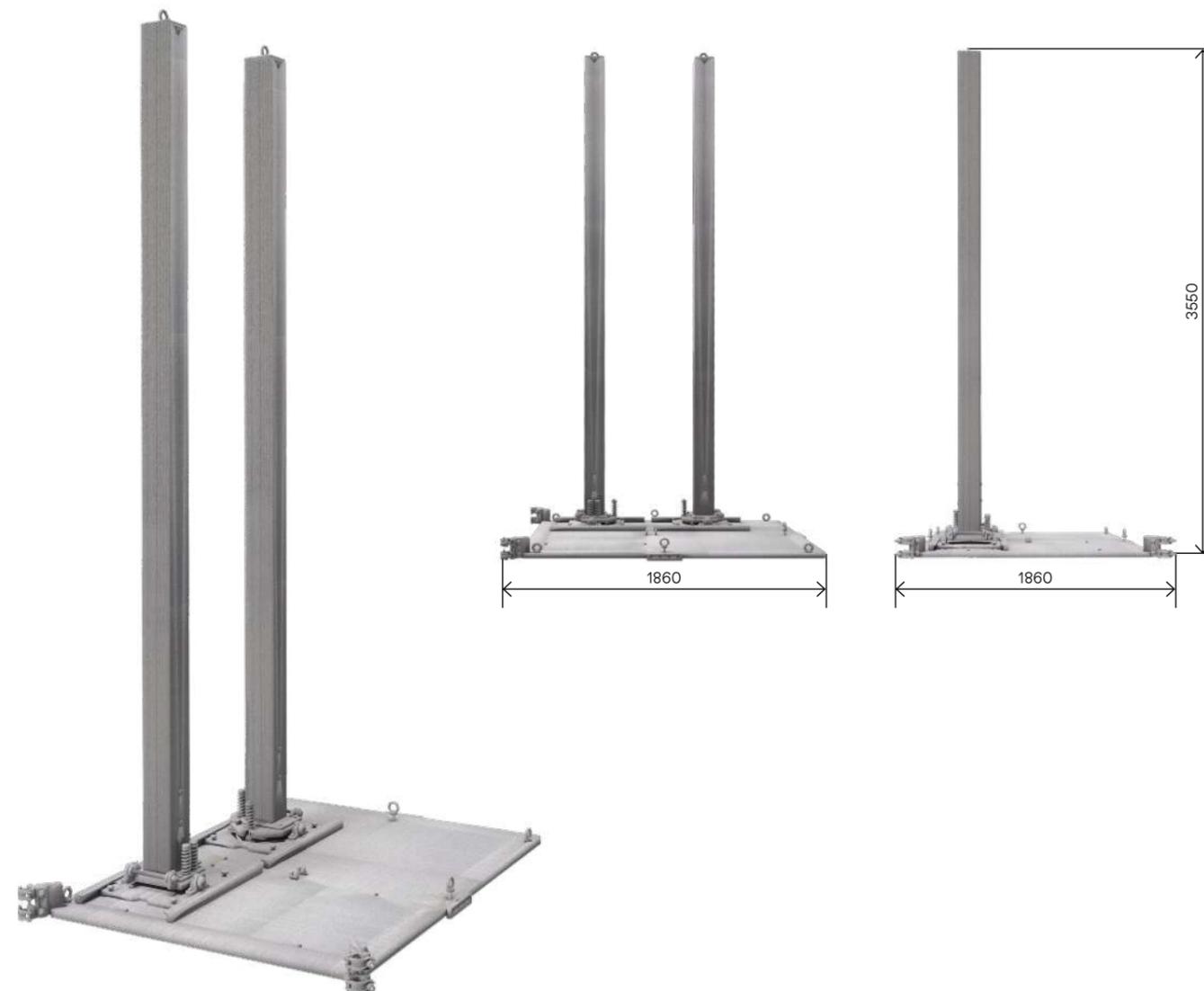
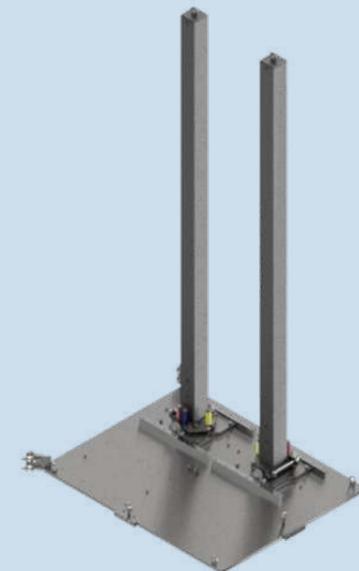
The stand can be fitted with a rail track, allowing for the use of a welding tractor for mechanized vertical welding. This setup also facilitates mechanized circumferential welding. Additionally, with a special attachment, it enables the execution of fillet welds on stiffening rings.



Weld Stand

TECHNICAL DATA SUMMARY

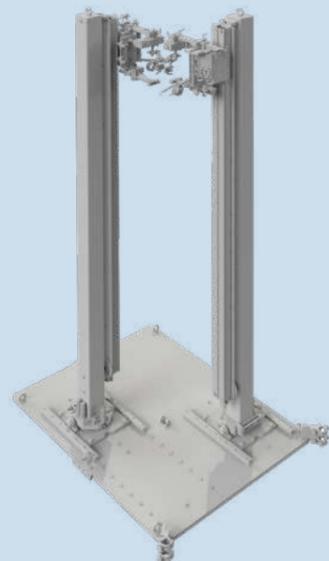
The Weld Stand supports various mechanized welding applications, including MIG/MAG, SAW, Plasma, and Arc TIG. It features a base plate and two spring-loaded columns that continuously move inward toward the shell, ensuring stable and precise welding.



Weld Stand MIG/MAG

TECHNICAL DATA SUMMARY

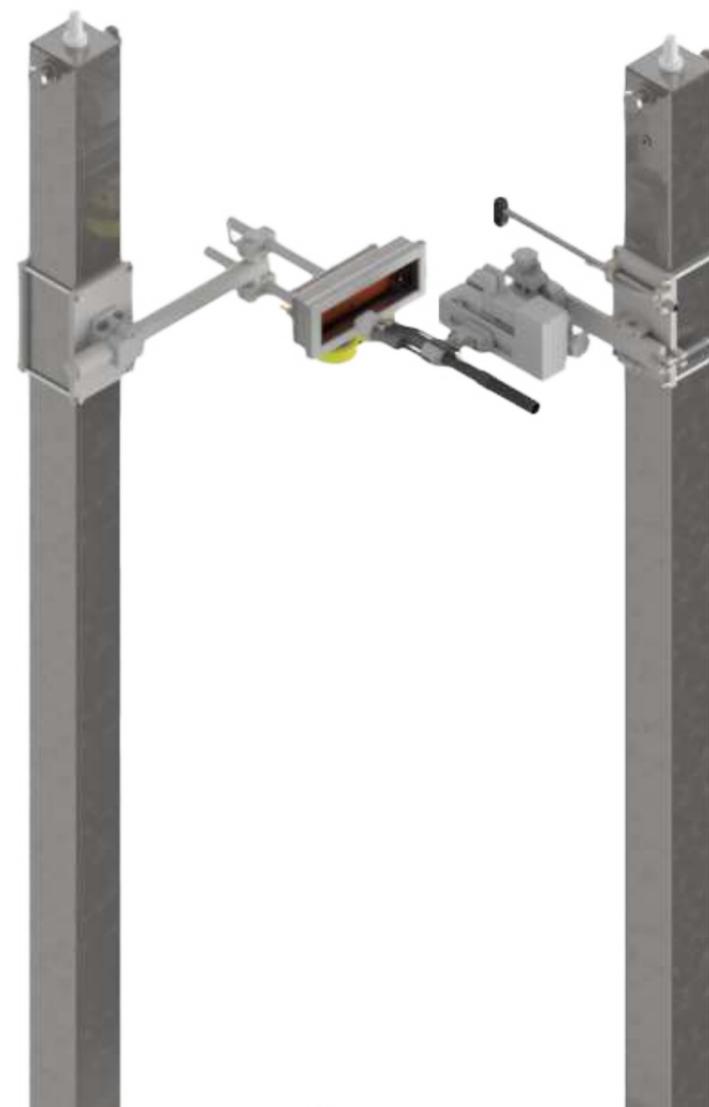
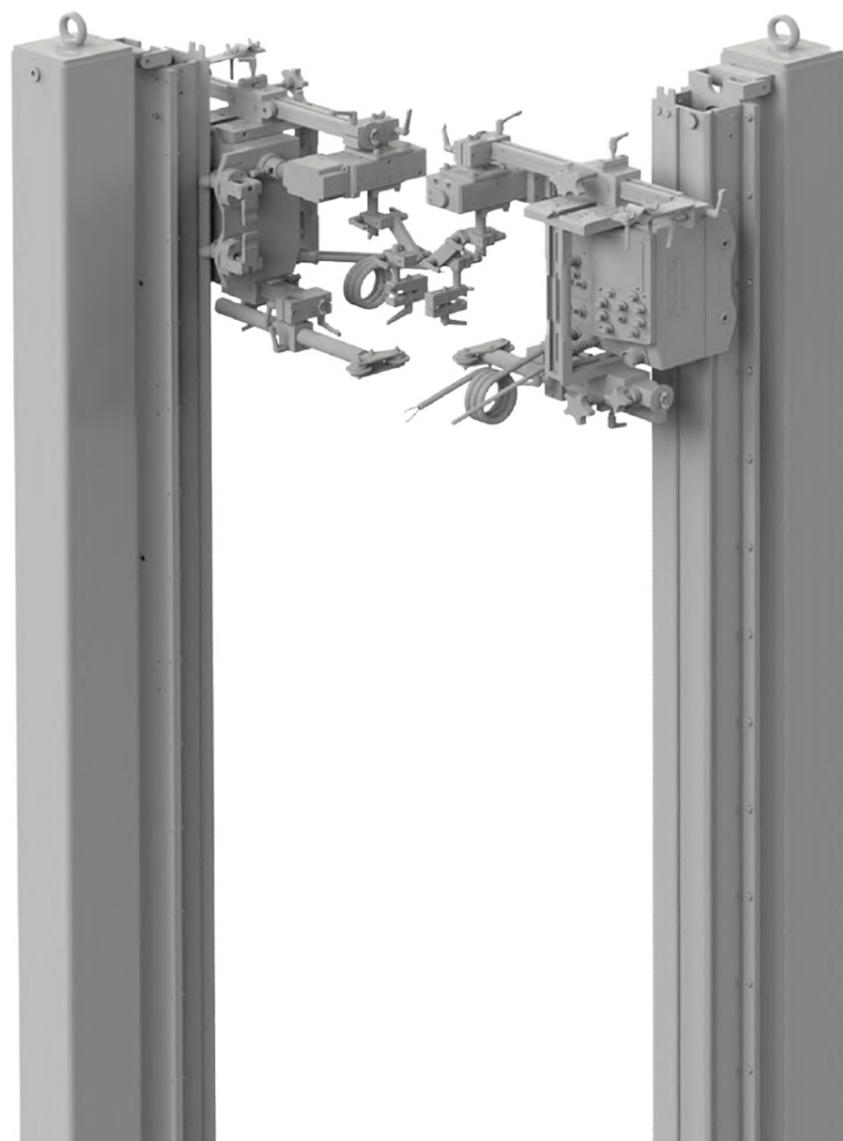
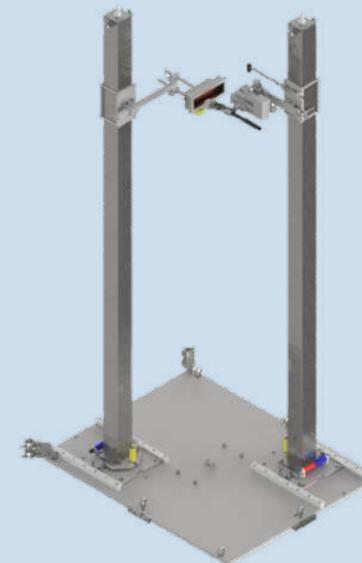
For MIG/MAG welding, the Weld Stand is equipped with a rail track that accommodates a Gullco KAT 300 oscillation welding tractor for mechanized vertical welding. This setup also allows for mechanized circumferential welding. Additionally, with a special attachment, the system can perform fillet welds on stiffening rings. MIG/MAG welding is suitable for a variety of materials.



Weld Stand Arc Tig / Plasma

TECHNICAL DATA SUMMARY

Plasma or Arc TIG welding is primarily used for stainless steel tanks. We offer Fronius configurations for both plasma and Arc TIG welding methods. The torch arc can be controlled using AVC (Arc Voltage Control) or a guiding wheel combined with the spring-loaded column, which adjusts to the shell's movement during tank rotation. Additionally, a water-cooled purge gas system is included to protect the root side of the weld.



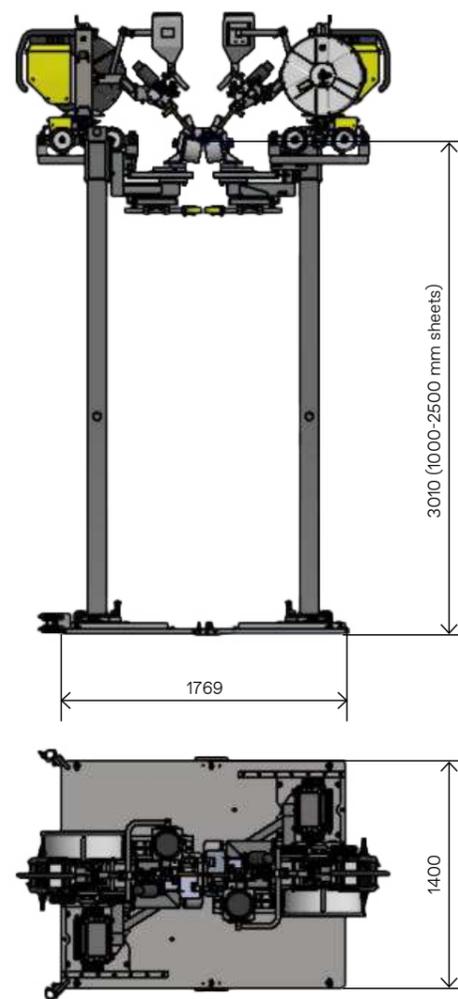
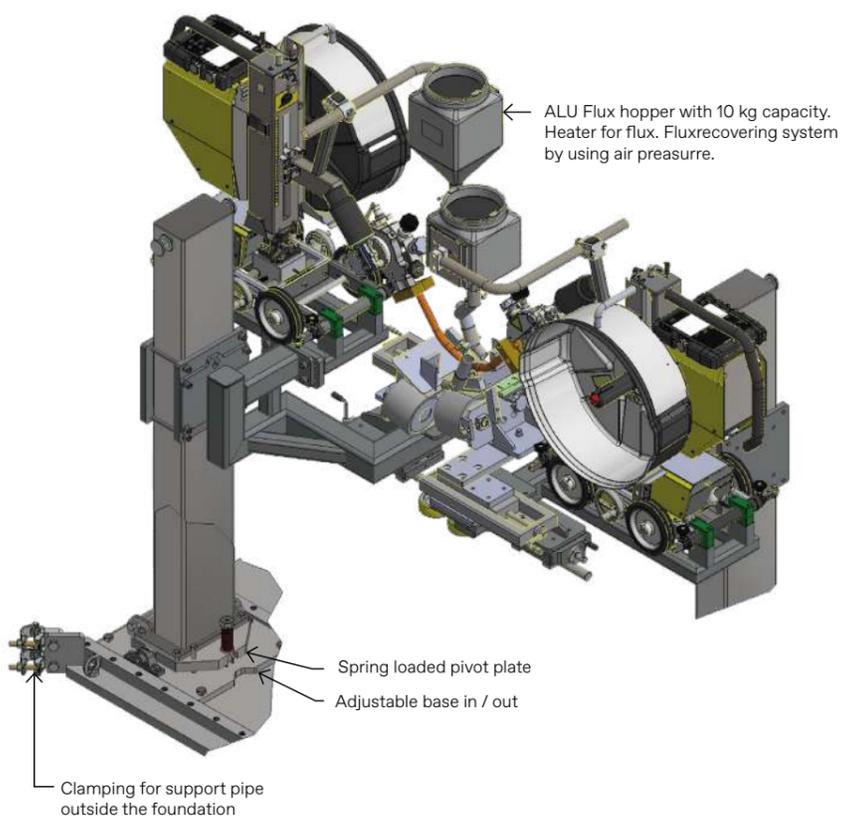
Weld Stand SAW

TECHNICAL DATA SUMMARY

SAW welding is primarily used for large carbon steel tanks.

For **SAW** welding, we offer two configurations, both utilizing a flux conveyor for flux recirculation. These units are mounted on the columns of the Weld Stand. The spring-loaded columns press the conveyor belt against the tank wall, ensuring smooth belt movement as the tank rotates.

The **first option** features the latest ESAB SAW welding tractor, the Versotrack. This machine is versatile, suitable for both vertical and floor welding. The Versotrack is modular and can be easily disassembled into smaller components. It uses air pressure for flux recirculation and includes a flux hopper with a 10 kg capacity. Additionally, it is equipped with a laser pointer to accurately follow the weld joint.

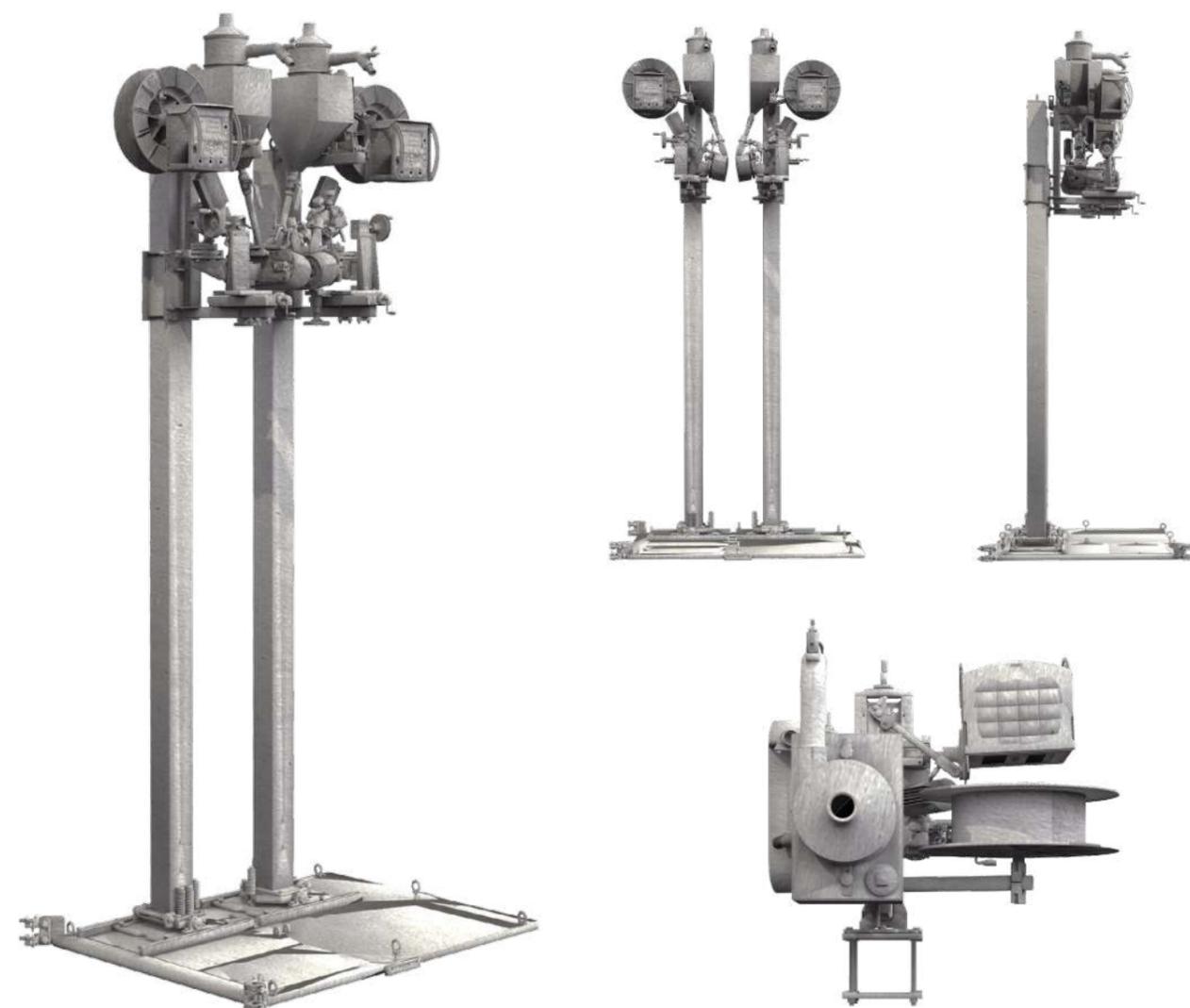
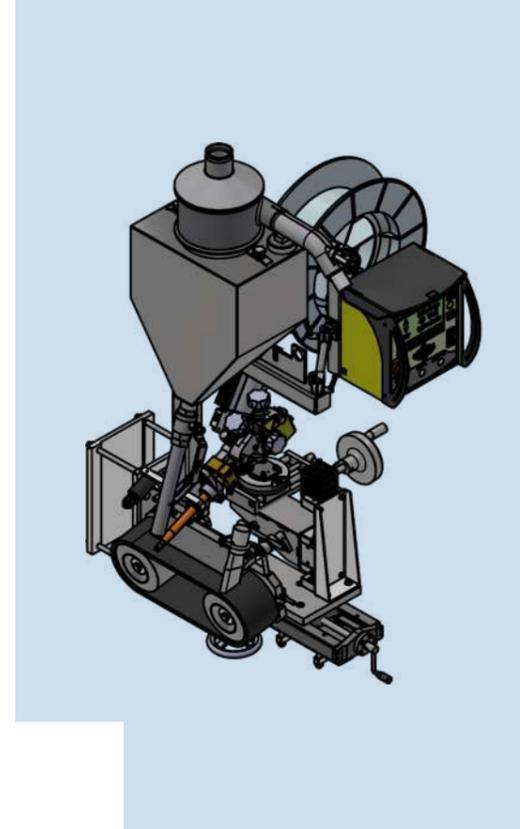


Weld Stand SAW 2.0

TECHNICAL DATA SUMMARY

The **second option** is a new, compact version developed by Nordweld. It features a longer conveyor belt with three adjustable guiding wheels to allow for belt curvature. The flux hopper holds 25 kg of flux, and the flux recirculation system utilizes an electric vacuum unit that can be positioned at the tank bottom. This configuration includes a laser pointer for precise weld joint tracking and is equipped with an ESAB A2 welding head and ESAB LAF 631 power sources. Upon request, we can also install Lincoln welding equipment.

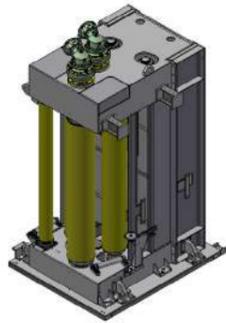
Both SAW configurations come with a special transport rack for ease of handling.



Vertical Plate Bending Machine & Decoiler

TECHNICAL DATA SUMMARY

The vertical plate bending machine is designed for rolling straight plates or material from coils. It can be equipped with either 3, 4, or 7 rolls, and can be customized to accommodate different plate heights and thicknesses. The rolls are covered with urethane to prevent contamination of the rolled material. The machine is connected to a de-coiler for processing material directly from coils, which can be equipped with a hydraulic tilting function for easy loading of new coils. A telescopic arm aids in feeding the coil into the bending machine. Both the vertical bending machine and the de-coiler are operated via remote control.



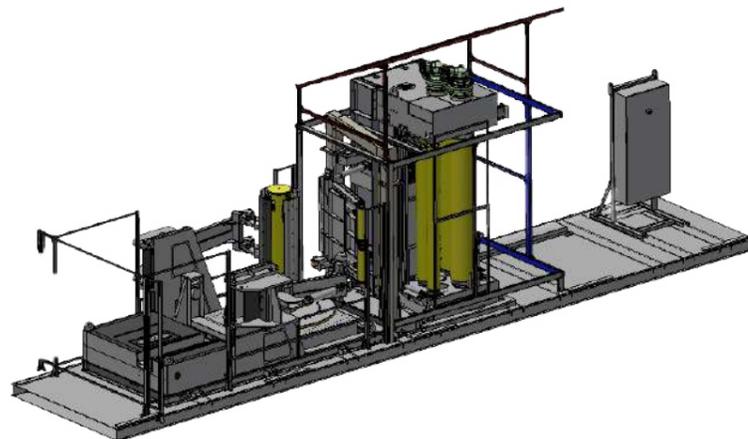
Vertical Plate Bending Machine SHIRV 2000x16 Duplex

- capacity radius: 12000mm
- max thickness: 16 mm Duplex
- max thickness: 25mm Carbon Steel S355
- max plate height: 2000 mm



Decoiler

- power coil holder 2000 x 10 mm
- max height: 2000 mm
- max coil weight 25 T
- hydraulic swing insert arm for coil feeder
- min thickness: 2 mm
- max thickness: 10 mm
- material: Stainless Steel and Carbon Steel



For further info: www.imcar.it

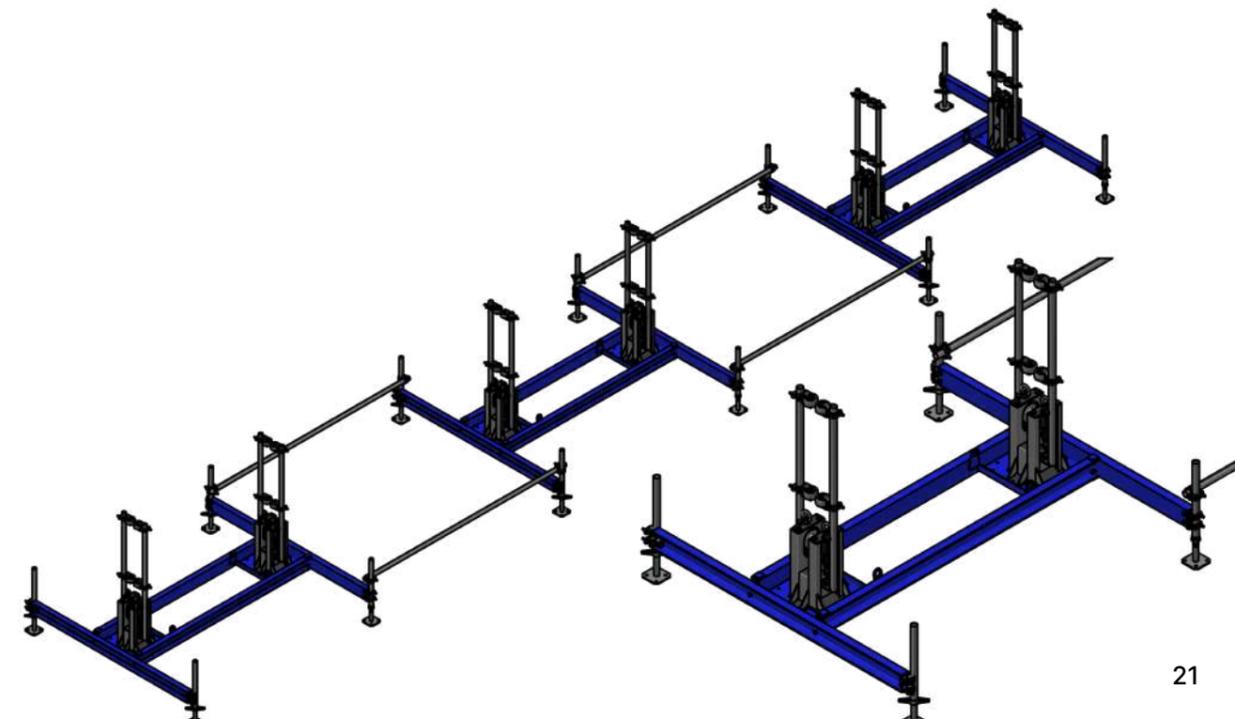
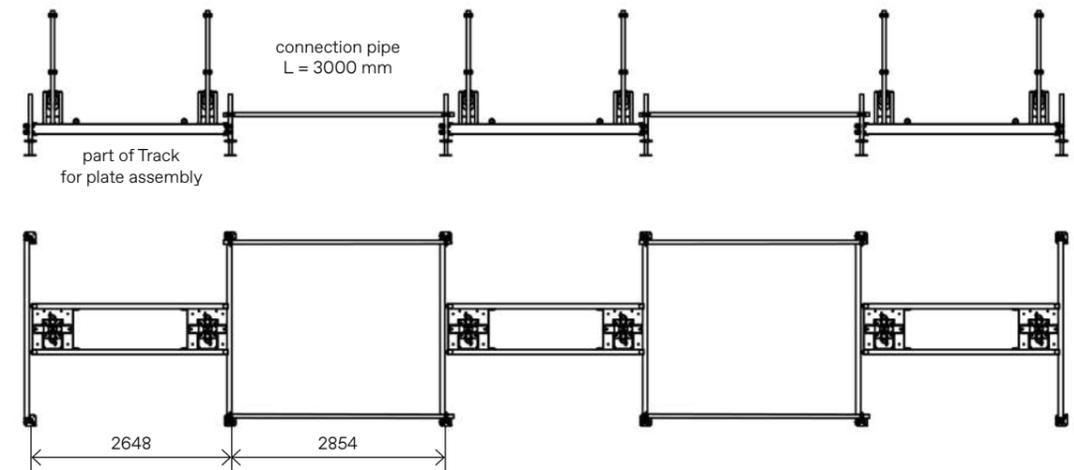
Vertical Plate Bending Machine & Plate Track

TECHNICAL DATA SUMMARY

Used in conjunction with a vertical bending machine, place flat material onto the plate track and weld the vertical seams. Next, roll the long sheet and feed it into the jacking system.

Advantages:

- roll the material onsite
- weld and prepare the sheet meanwhile the circumference on the tank is welded
- easy to mechanize the welding
- better shape of the tank wall



Welding Station

TECHNICAL DATA SUMMARY

The welding station is constructed using standard aluminum scaffolding components and includes sealing at the top and sides. It is covered with top and side curtains to shield both the operator and the welding equipment from adverse weather conditions while working on the exterior of the tank.



Container

TECHNICAL DATA SUMMARY

The system is delivered in a 20ft HC shipping container, where it is securely placed in specially designed interior racks. This setup not only makes transport and delivery cost-effective but also ensures the system arrives ready for immediate use. For efficient and safe handling onsite, the transport rack can be easily pulled out of the container, facilitating faster loading and unloading.



Internal Scaffolding

TECHNICAL DATA SUMMARY

An internal scaffolding system can be assembled between the jacks to create working platforms inside the tank. This system can be configured in one or two levels and comes equipped with railings. The platforms are constructed from 2050mm steel planks, with lower-level railings made from 48mm aluminium pipes and clamps. The upper level includes railing units with a middle bar and kick plates to ensure compliance with safety regulations.



Standard system with Roller Beds

- An all-round system for both SS and CS tanks
- Suitable for larger/heavy CS/SS tanks up to 45 - 50 m in combination with our Heavy Duty Roller Beds
- Build with either pre-rolled plates or use a vertical bending machine + plate track
- Rotate the entire tank during the erection process
- Assemble all material from one location
- Full Mechanized Welding with MIG/MAG or SAW
- All work performed at ground level - no working at height or crane operations required
- Retain the shape of the tank by starting with the roof and jacking the tank to full height - no barrel effect



1. Unload the container.



2. Place the annular and bottom plates at the foundation.



3. Place the equipment at the annular plates and assemble the Lift Jacks.



4. Assemble the 1st course including the top ring. Lift the 1st course, assemble and weld the 2nd course.



5. Assemble the roof construction.



6. Lift the entire tank.



7. Assemble the 3rd course and so on until the tank reaches the final height.



8. All NDT can be performed at ground level from one location.



9. Remove the equipment and place the tank at the bottom and dismantle the Lift Jacks.



10. The tank is ready to use.

Advanced system with Wheel Trolley and Bending Machine + Decoiler / Plate Track

- Perfect for larger SS tanks in duplex materials. Fastest way to built tanks, build from long flat sheets or directly from coil
- Excellent shape of the tank by rolling the plates after welding (using flat sheets)
- Tank is rotating during in-feeding/tack welding of the sheet
- No welded lifting brackets required
- Full Mechanized Welding with Plasma/Arc Tig, MIG/MAG or SAW from one location
- All work performed at ground level - no working at height or crane operations required
- Retain the shape of the tank by starting with the roof and jacking the tank to full height - no barrel effect



1. Place the annular and bottom plates at the foundation. Place the equipment on the annular plates and assemble the Lift Jacks including Wheel Trolleys. Place the vertical bending machine / decoiler / plate track in position.



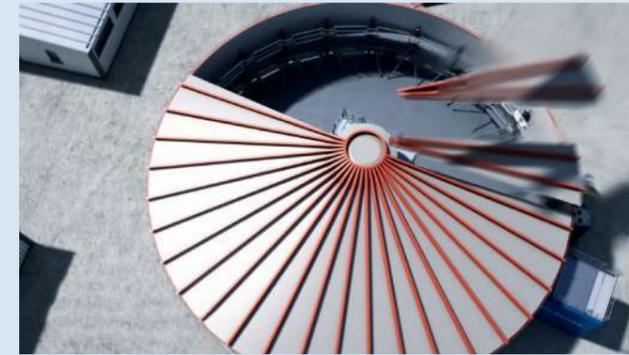
2. Feed in the first course.



3. Lift the 1st course including the top ring.



4. Feed in and tack weld the 2nd course, lower Jack one by one during the infeeding of the sheet.



5. Assemble the roof construction - it is possible to rotate the tank with a rotating shoring tower.



6. Assemble the 3rd course and so on until the tank reaches the final height. All NDT can be performed at ground level from one location. Remove the equipment, lower the tank to the bottom and dismantle the Lift Jacks.

Options to add:

- Using flat sheets in the Plate Track



- Mechanized welding in vertical / horizontal position with different methods





Walkway systems for tanks

The walkway systems for tanks are robust constructions designed to provide roof access and facilitate communication within the tank. Modern solutions and a meticulously engineered fixing system ensure safety and streamlined assembly. With years of expertise in crafting top-tier steel stairs, our team boasts not only highly skilled personnel but also partnerships with reputable suppliers of premium raw materials. The precision and expertise of TLC engineers, coupled with proficient assembly teams, ensure swift and expert completion of orders.



**consultancy
services
on regulations
and standards**



**stairs available
in different
versions (spiral,
curved, staircases)**

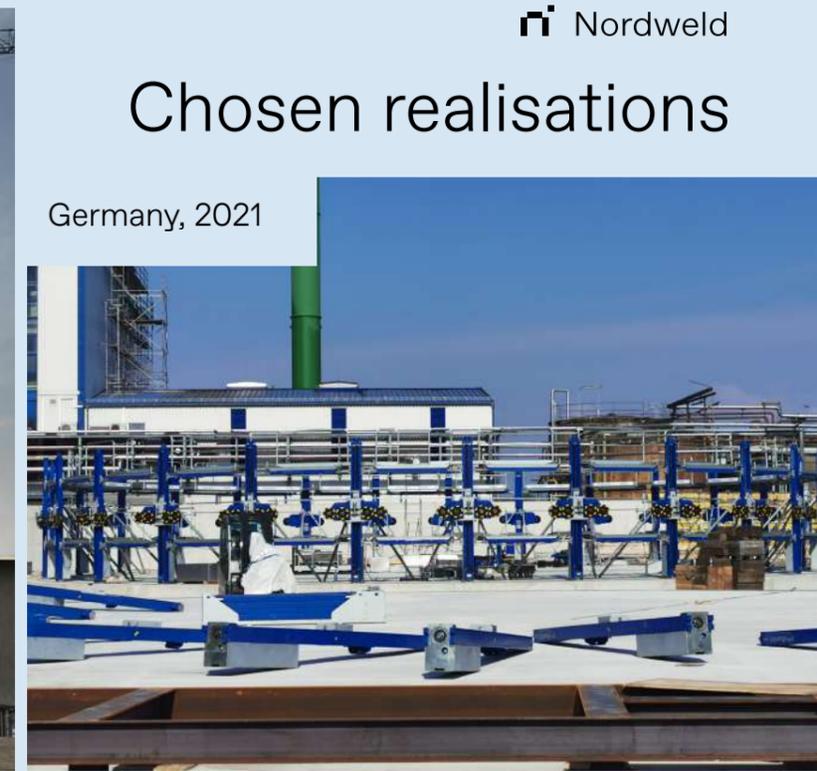


**adherence
to construction
law regulations
and standards**

In addition to steel walkway systems used for silos and large-scale tanks, we offer comprehensive investment services in the field of design, production and assembly of complete communication infrastructure, including steel service and communication platforms. Depending on the needs (access, communication), these platforms can be placed on, around the between the tanks.



Chosen realisations



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About our Group

Nordweld is part of the TLC Group. It is a Swedish-Polish Group specialising in the design and production of solutions for the industrial and construction sectors. It is committed to green solutions and sustainability in its operations. The Group's product range includes steel walkway systems for the industry, temporary construction site protections and an innovative system for the construction of large-size tanks.

TLC started in 2005 as a small company and today it is a Group of companies with projects all over the world. The thousands of realisations that have been completed on various continents confirm the Group's position of a trusted business partner. TLC's key clients include leading companies in the industrial and construction sectors.

