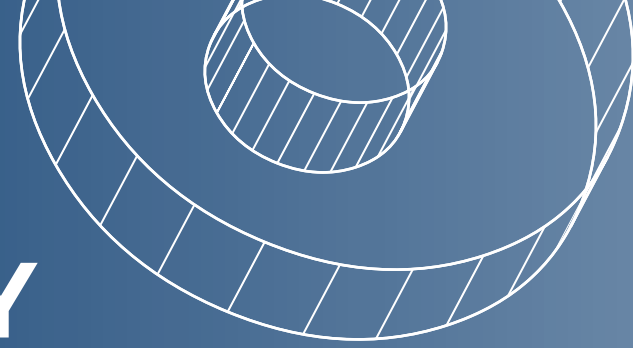




n°rdweld[®]

**AN INNOVATIVE
TANK BUILDING SYSTEM**

ABOUT OUR TECHNOLOGY



Nordweld Tank Building System is a ground-breaking onsite system designed for the erection of large above ground atmospheric and pressured tanks, which enables the construction of tanks with a diameter of 8 to 50 meters and a weight up to 700 tons. The maximum height depends upon the ratio between the diameter, height and lifting weight.

Nordweld Tank Building System is modular and the amount of equipment depends on the size, type and material of the tank. By using the top-down method, you gain stability from the roof and good weather protection during the erection process. The entire tank is rotating during the installation of the sheets and during the welding process. All welding can be mechanized and performed from a single point at ground level.

All components are stored and transported in 20ft HC shipping containers for efficient handling of the equipment.

Main advantages of Nordweld Tank Building System:

- High efficiency – less man hours compared to traditional tank building methods
- Cost reduction – no onsite crane required and scaffolding costs eliminated
- Roll all shell material on site
- Safety - all work is done from one location at ground level and can be performed in limited workspaces
- All parts of the system are made of high-quality materials and components
- Designed to work in tough environmental conditions
- Efficient transportation system in 20ft HC shipping container

What is the cost saving if you use our equipment?

Regardless of which of the two available methods you use, the savings are significant.



No prior investment required

A complete standalone system which can be leased and delivered directly onsite ready to work.

Delivery by an industry leader

Gathered from 30+ years of experience leading innovation in the tank building sector.

Safety first - work safe pays

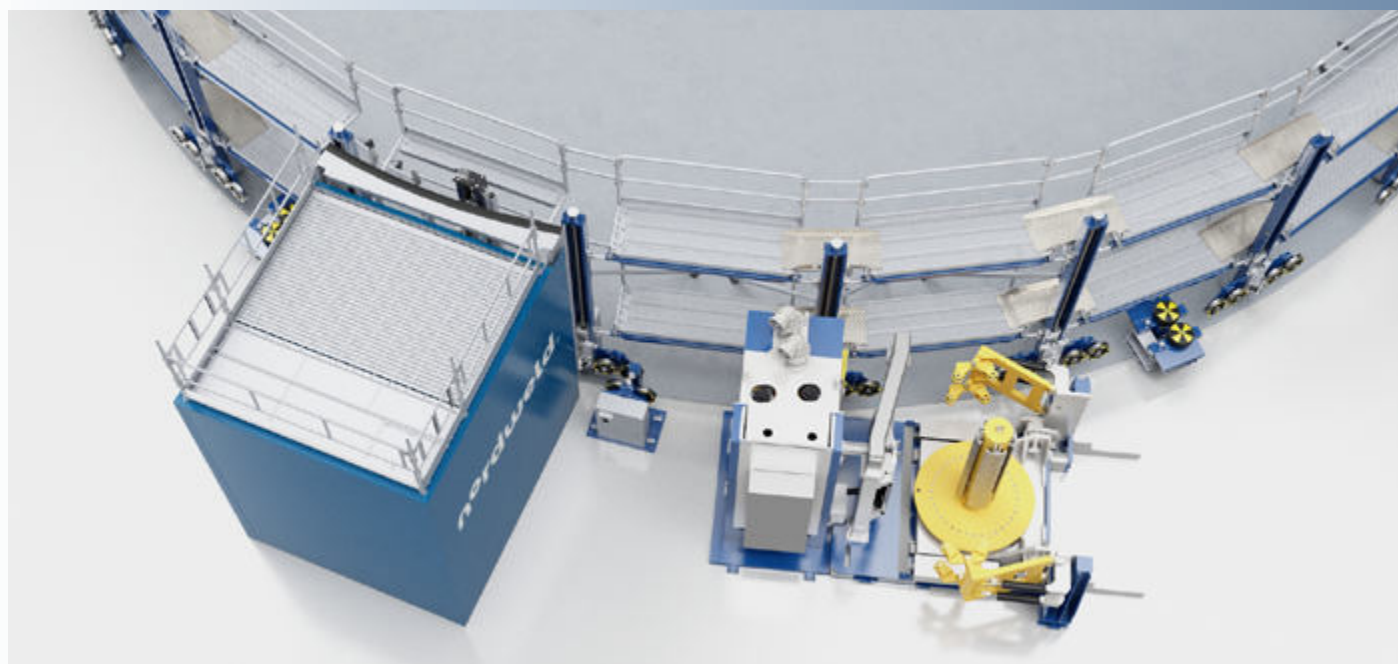
All work performed at ground level and can be operated efficiently in limited workspaces.

Mechanised welding - high quality

A fully mechanised welding process performed from one location. All common welding processes available (SAW, MIG/MAG, PAW).

CHARACTERISTICS OF OUR EQUIPMENT

Nordweld's Automated Tank Building System uses the "Top-Down" method of construction. All shell plates are assembled from one location and rotated around the tank's periphery. The system consists of electro-mechanical Lift Jacks, Roller Beds, Wheel Trolley (optional), Tank Rotators, Welding Station, and a Tack Weld. As the tank is being constructed, it is continually rotated. The system can be enhanced with different mechanized welding processes.



COMPONENTS

Lift Jack

Lift Jacks are used to erect tanks of larger diameter when building in a top-down method. Our electro-mechanical jacks have a capacity of 9T and a lift height of 2100 mm or 15T and 2600 mm. The lift jacks are CE marked and tested with + 50% dynamic load.

The unique characteristics of our Lift Jacks:

- Lifting capacity of 9 000 kg / 15 000 kg
- Fast Operating – 16 / 25 minutes per lifting stroke respectively
- Easy to operate both simultaneously and individually
- Uses a smooth continuously operated lift mechanism
- No oil spills or leakage possible when compared to Hydraulic systems
- Self-locking, which ensures the highest operator safety conditions
- Separate power outlets on each lift jack available
- Two different building methods with the same lifting Jack
- Internal scaffolding system can be assembled between the jacks for one or two levels
- Easy to dismantle with our custom device
- All components can be taken through a 600mm manhole



Lift Jack 9T technical specification

| | |
|---|--|
| Power | 400 V 63Amp 3 - phase, 50/60 Hz, five - wire system with RCD |
| Main central Operating panel | 63 Amp 16 Amp |
| Motor | 1,1 kW 230/400 V IE2 |
| Gear | Lenze |
| Max. lift height | 2 100 mm (6.88 ft) |
| Lift speed | 128 mm/min (0.41 ft/min) |
| Max. load - equipped with Wheel Trolley | 7 000 kg (15 432 lbs) |
| Test lift/tested | 13 500 kg (29 762 lbs) |
| Total height | 3 450 mm (11.31 ft) |
| Width | 275 mm (0.90 ft) |
| Depth | 470 mm (1.54 ft) |
| Weight | 325 kg (716 lbs) |
| Support legs weight | 2 x 20 kg (2 x 44 lbs) |
| Operating temperature | -20°C till + 50°C (-68°F till +122°F) |

Lift Jack 15T technical specification

| | |
|---|--|
| Power | 400 V 63Amp 3 - phase, 50/60 Hz, five - wire system with RCD |
| Main central Operating panel | 63 Amp 16 Amp |
| Motor | 1,1 kW 230/400 V IE3 |
| Gear | Motovario |
| Max. lift height | 2 600 mm (8.53 ft) |
| Lift speed | 100 mm/min (0.32 ft/min) |
| Max. load - equipped with Wheel Trolley | 12 500 kg (27 557 lbs) |
| Test lift/tested | 25 000 kg (55 115 lbs) |
| Total height | 4 065 mm (13.33 ft) |
| Width | 275 mm (0.90 ft) |
| Depth | 460 mm (1.50 ft) |
| Weight | 620 kg (1 366 lbs) |
| Support legs weight | 2 x 35 kg (2 x 77 lbs) |
| Operating temperature | -20°C till + 50°C (-68°F till +122°F) |

*All dimensions are in millimeters (mm).



Dimensions of Lift Jack 9T



Dimensions of Lift Jack 15T

Wheel Trolley

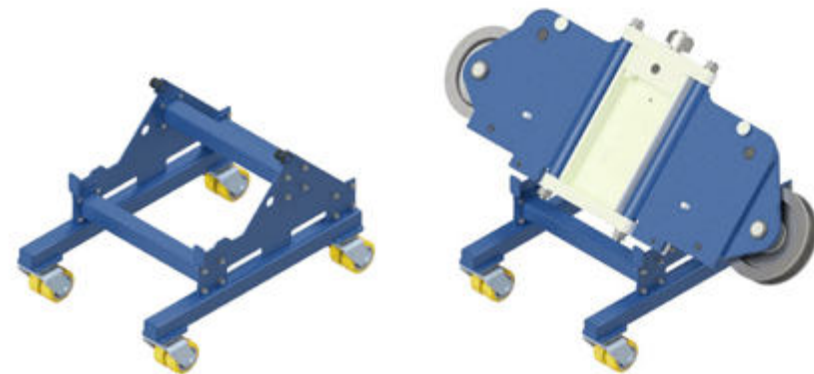
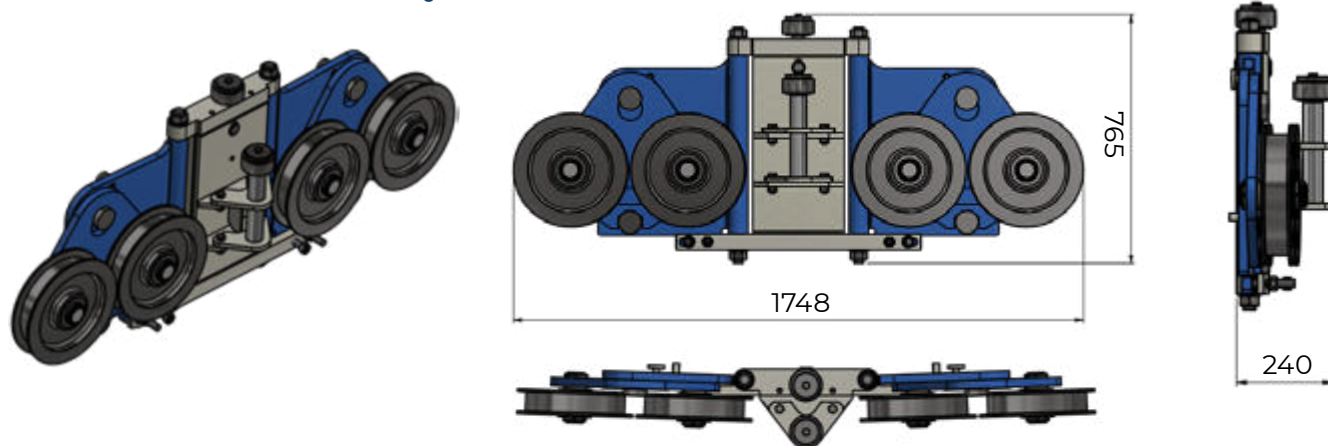
Lift Jacks equipped with a Wheel Trolley are perfect for larger stainless-steel tanks. Tanks can be constructed directly from coil or long flat sheets up to 12m, together with our plate track and vertical bending machine.

Wheel Trolley technical specification

| | |
|----------|--|
| Height | 765 mm (2 ft) |
| Width | 240 mm (9.44 in) |
| Length | 1748 mm (5 ft) |
| Weight | 365 kg (804 lbs) |
| Max load | LJ 15T: 12.5 tones (27557 lbs) LJ 9T: 7 tones (15432 lbs) |



Dimensions of Wheel Trolley



Trolley, used for dismantling and transport. Lifting bracket for easy handling.

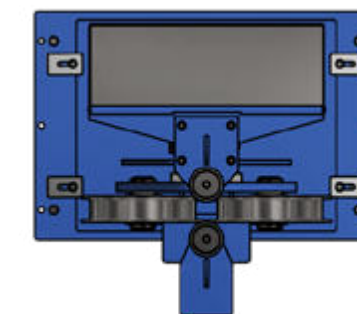
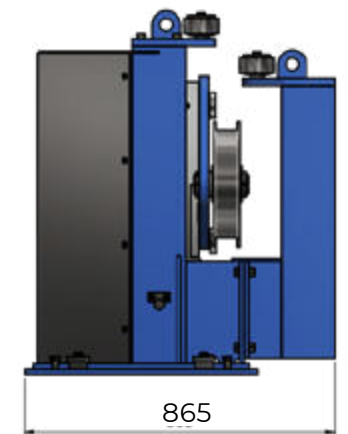
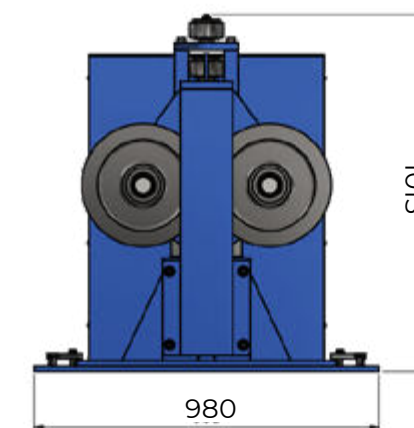
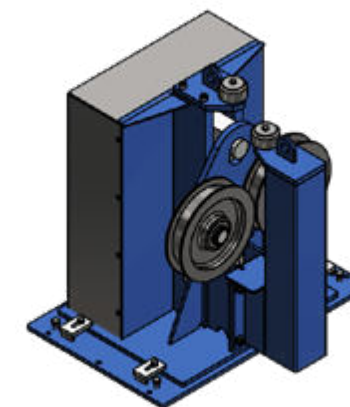
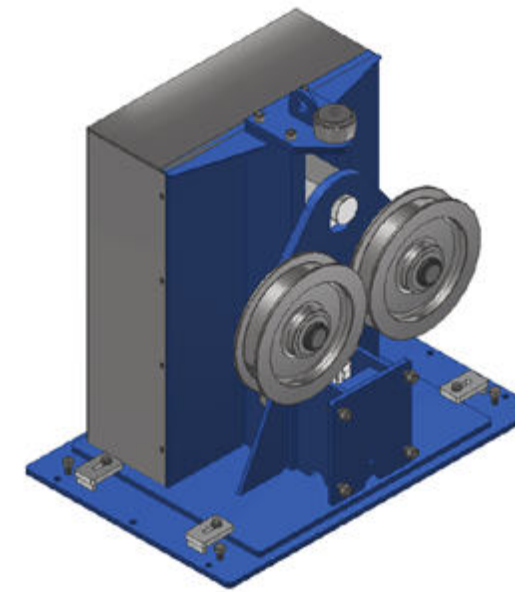
Weld Gap Adjusting Jack

used in our 2nd method:
Advanced system with Wheel Trolley and decoiler / bending machine

Adjust the gap during in-feeding of the sheet from the bending machine. 6000kg lifting capacity. Operates with a remote control.

Weld Gap Adjusting Jack technical specification

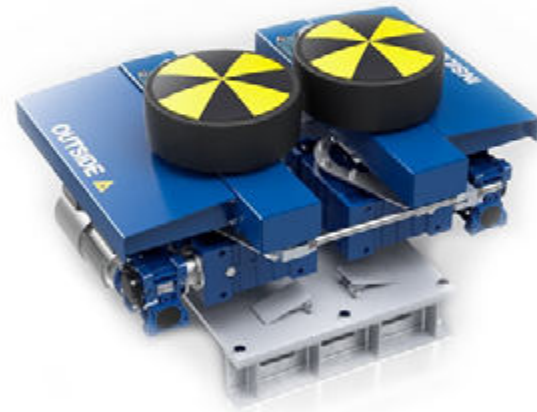
| | |
|----------|------------------------|
| Height | 1015 mm (3.33 ft) |
| Width | 865 mm (2.83 ft) |
| Length | 980 mm (3.21 ft) |
| Weight | 500 kg (1102.3 lbs) |
| Max load | 6 000 kg (13227.8 lbs) |



*All dimensions are in millimeters (mm).

Tank Rotator

Our Tank Rotator system is unique within the tank building industry which ensures a fast and efficient building process. The tank rotators operate directly from the foundation in a continuous motion. Adjust the speed from 100-1600mm/min with a remote control during the welding/assembly progress.



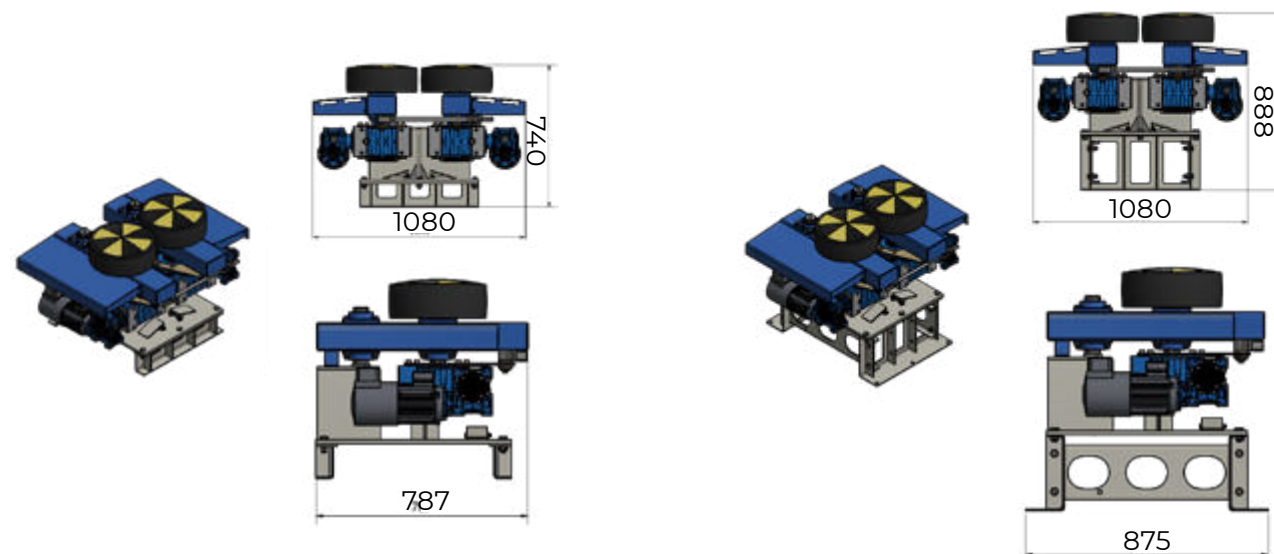
Tank Rotator technical specification

| | | |
|--|---|-------------------|
| Power | 400 V 32Amp 3_phase, 50/60 Hz, five-wire system | |
| Speed control central | 18 kW, EB12428 | |
| Remote control | KTP400F Mobil | |
| Speed | 135 - 1600 mm/min (0.44 - 5.24 ft/min) | |
| Twin - worm Gear | Lenze (see separate document) | |
| Motor | 0,55kW 400V/IEC 80 B-4 | |
| Pulse encoder | HTL, 1024 pulses, 1XP8032-10 | |
| Possibility of working at two different foot heights | | |
| Height | 740 mm (2.42 ft) | 888 mm (2.91 ft) |
| Width | 1080 mm (3.54 ft) | 1080 mm (3.54 ft) |
| Length | 787 mm (2.58 ft) | 875 mm (2.87 ft) |
| Weight | 385 kg (848.77 lbs) | |

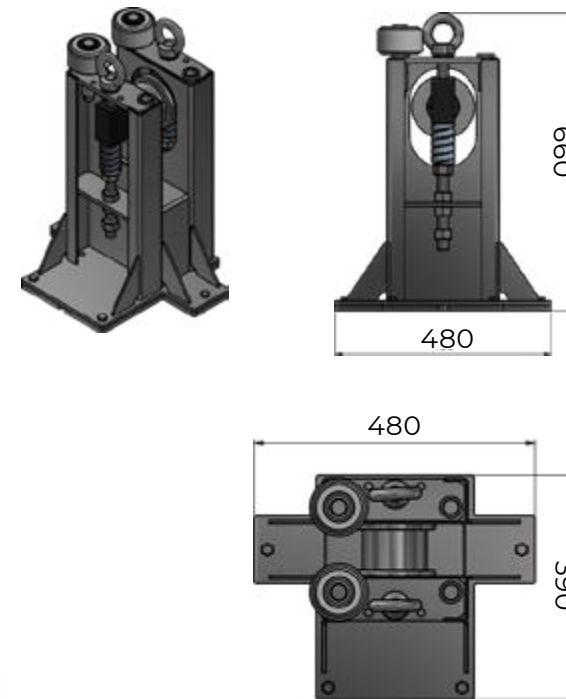
Dimensions of Tank Rotator

Standard model (raiser 130 mm)

High model (raiser 280 mm)



Dimensions of Roller Bed



Roller Bed

The roller bed supports the tank during construction with our standard system. An attachment plate in SS or CS material for easy positioning of the roller bed on the tank bottom. It is also possible to drill the roller bed into a concrete base. A special scaffolding pipe can be attached inside/outside the roller bed to clamp scaffolding consoles.

Roller Bed technical specification

| | |
|----------|-----------------------|
| Height | 660 mm (2.16 ft) |
| Width | 480 mm (1.57 ft) |
| Length | 390 mm (1.27 ft) |
| Weight | 60 kg (132.27 lbs) |
| Max load | 4000 kg (8818.48 lbs) |

Roller Bed Heavy Duty

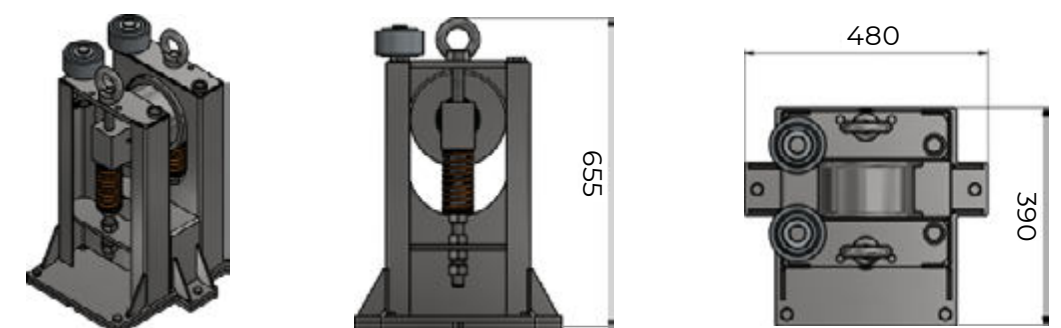
Designed for heavier tank erection.

Roller Bed Heavy Duty technical specification

| | |
|----------|-------------------------------------|
| Height | 655 mm (2.14 ft) |
| Width | 430 mm (1.41 ft) |
| Length | 385 mm (1.26 ft) |
| Weight: | 87 kg (191.80 lbs) |
| Max load | 5500 kg (12125,42 lbs) / Roller bed |



Dimensions of Roller Bed Heavy Duty



*All dimensions are in millimeters (mm).

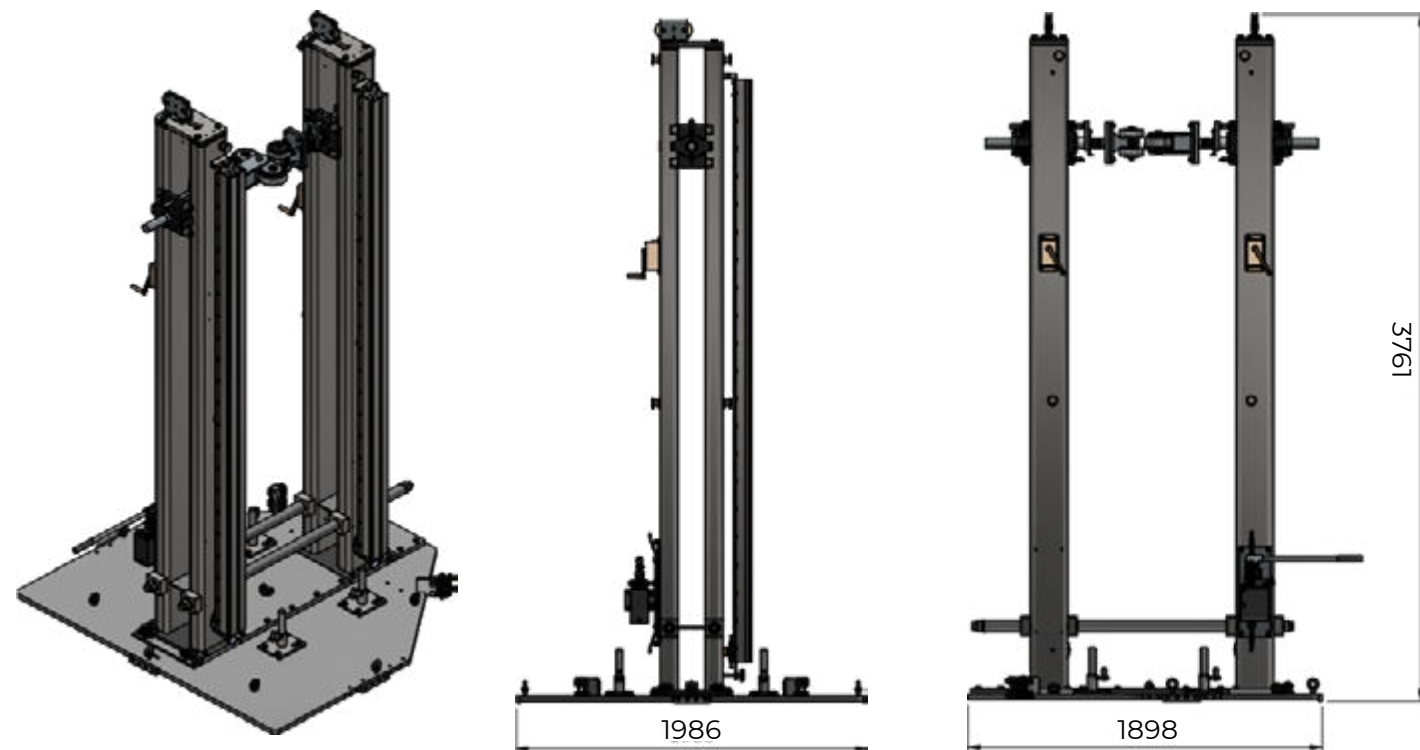
Tack Weld Stand

Tack weld configuration

The horizontal joint is aligned while the tank is rotated. The pivot roll can align equal or different thickness of the sheets. When attaching any required stiffening rings, the stand is also used to fix each individual ring segment to the shell.

Weld configuration

The stand can be equipped with a track which enables the use of mechanized welding process MIG/MAG for both vertical and horizontal weld seams. It is also possible to use this device for fillet welds on required stiffening rings. We also have a solution for keyhole welding (Arc tig or Plasma) including a water-cooled purge gas box.



SAW Weld Stand

with ESAB Versotrac for 2G position

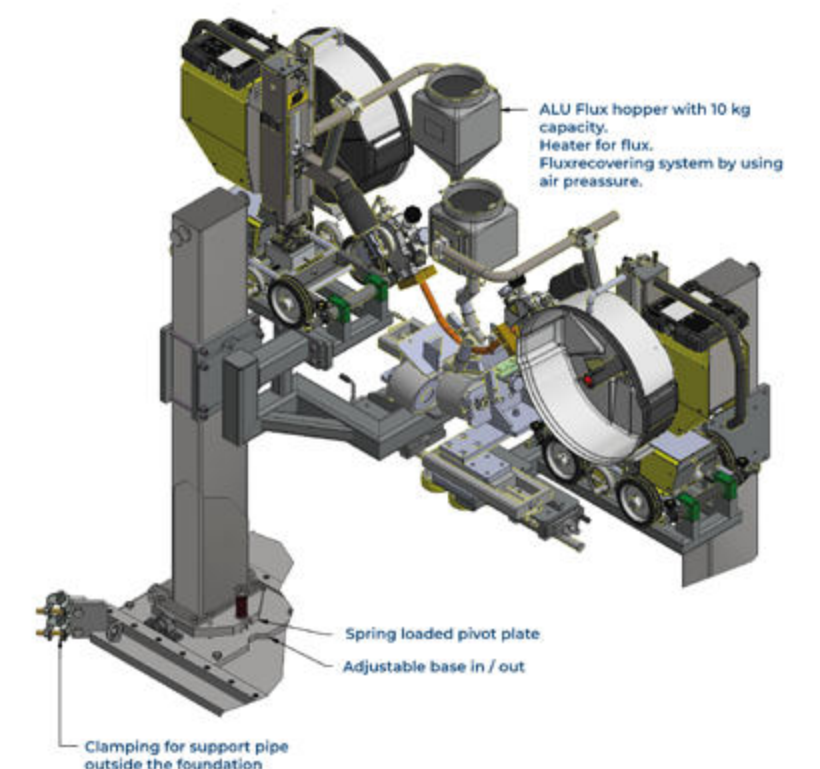
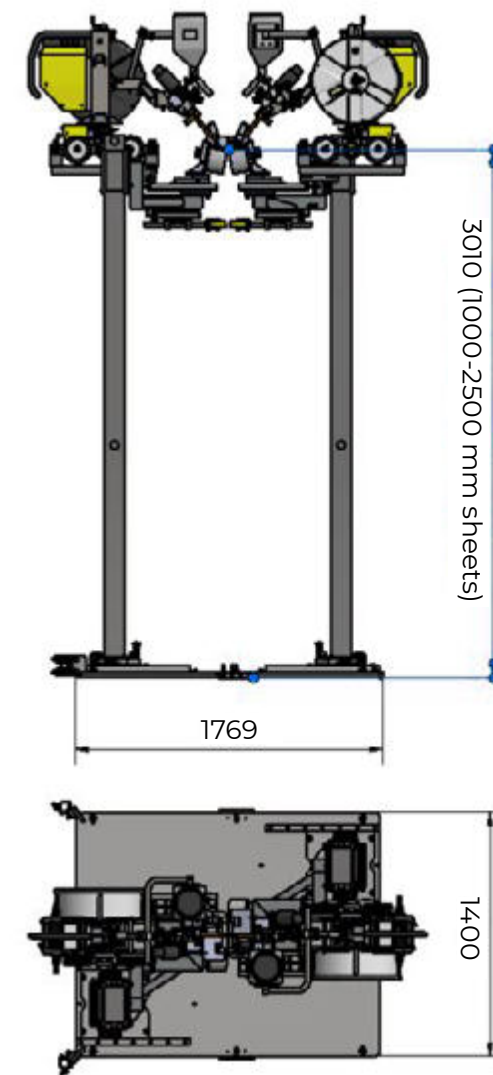
This solution allows to weld both the circumference at the shell, stiffening rings, and the floor with the same equipment. Modularized components can within a few minutes be disassembled into smaller units. The tractor is assembled on a frame with the flux conveyor belt. Spring loaded pillars follow the radial movement of the shell.

SAW Weld Stand technical specification

| | |
|---------------|---------------------------------|
| Base platform | 1 750 x 1 400 mm (5.8 x 4.6 ft) |
| Weight | 800 kg (1763.7 lbs) |
| Pillar height | 3 020 mm (9.9 ft) |
| Weight | 2 x 66 kg (2 x 145.5 lbs) |

Flux conveyor frame

| | |
|-----------------|------------------------|
| Weight | 2 x 60 kg (132.28 lbs) |
| Welding tractor | 2 x Esab Verso trac |
| Power source | 2 x Esab LAF 631 |



*All dimensions are in millimeters (mm).

Align & Welding Unit

n°rdweld. & IMGAR® solution

Welded steel frame equipped by two Telescopic columns with single strong basement. Two bolted heads at the top of columns with pre-alignment kit, align rolls & welding unit with protection gas inside. On one side of columns there is the Pre-Align system with 3 rolls for easy align of bending plate with tank. Inside rolls with box gas for tack welding protection inside. Double rolls outside with predisposition for AVC and automatic tack welding set-up. In the center of column there are two Steel wheel for Alignment / Compression with hydraulic movement, maximum compression power 3,5 tons. In opposite position of pre-align system there is the welding area with inside copper bar for welding protection and outside AVC unit for welding torch control distance. The equipment has vertical telescopic movement 530 mm plus steel section 500 + 500 mm to be able to work from 1 mt to 2,5 mt.

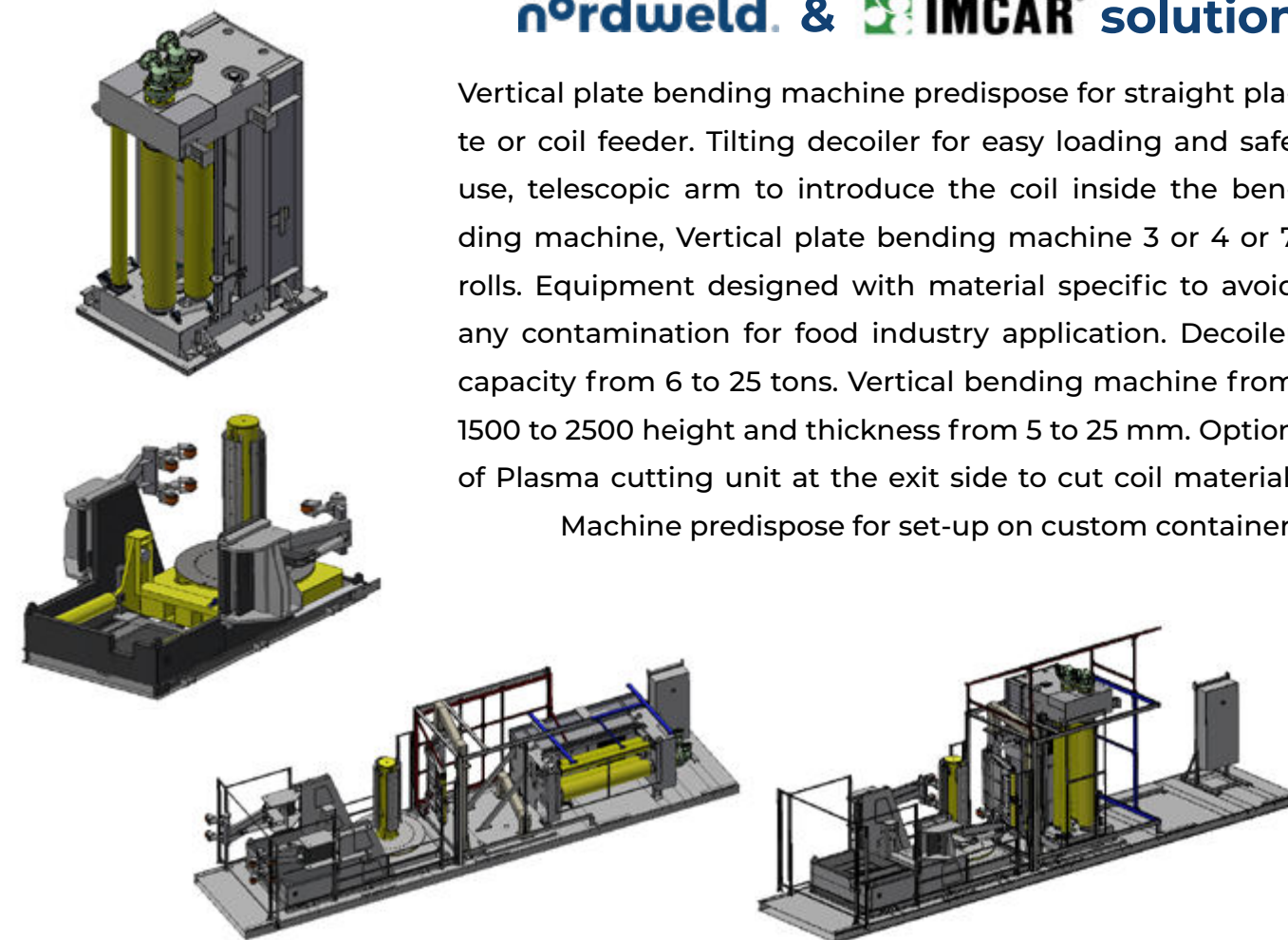


Bending Equipment

n°rdweld. & IMGAR® solution

Vertical plate bending machine predispose for straight plate or coil feeder. Tilting decoiler for easy loading and safe use, telescopic arm to introduce the coil inside the bending machine, Vertical plate bending machine 3 or 4 or 7 rolls. Equipment designed with material specific to avoid any contamination for food industry application. Decoiler capacity from 6 to 25 tons. Vertical bending machine from 1500 to 2500 height and thickness from 5 to 25 mm. Option of Plasma cutting unit at the exit side to cut coil material.

Machine predispose for set-up on custom container.



Circular Cleaning Unit

n°rdweld. & IMGAR® solution

Welded steel frame equipped by two Telescopic Aluminum columns with single basement. Manual vertical movement with safety lock. Set-up of two cleaning unit by disk or belt. Pneumatic cleaning movement with easy pression set-up. Cleaning unit with easy belt change by pneumatic piston for belt tension.



Plasma Cutting Unit

n°rdweld. & IMGAR® solution

Cutting unit to set-up on bending machine in the exit plate side to cut the material from coil. Automatic cutting with variable speed and pneumatic self-alignment for cutting torch. Predispose for different plasma brand.



Welding Station

The welding station is built from the supplied scaffolding components and is covered with top and side panel curtain. It protects both the operator and the welding equipment from hazardous weather conditions when work is being performed on the exterior of the tank.



Container

All equipment is delivered in a 20ft HC transport container. It is placed in specially designed interior racks, which makes the transport and delivery cost-efficient, and ensures the customer receives the system ready to work. For quick and safe handling of the equipment onsite, the transport rack can be pulled directly out of the container ensuring faster loading and unloading.



One container includes components to construct up to an **18 m diameter** and **200 tons** lifting capacity.

TANK ERECTION PROCESS

1st method

Standard system with roller beds

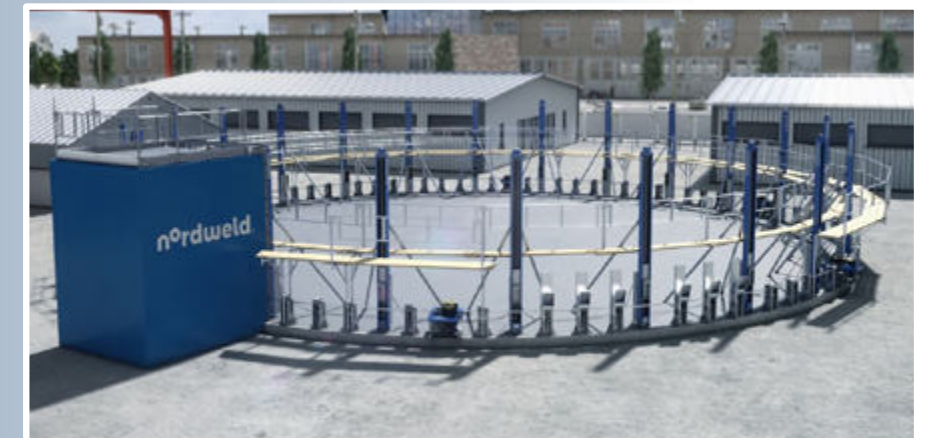
- An all-round system for both SS and CS tanks
- Suitable for larger/heavy CS tanks up to 45 - 50 m in combination with our Heavy Duty Roller Beds
- Build with either pre-rolled plates or use a vertical bending machine + plate track
- Rotate the entire tank during the construction
- Assemble all material 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.

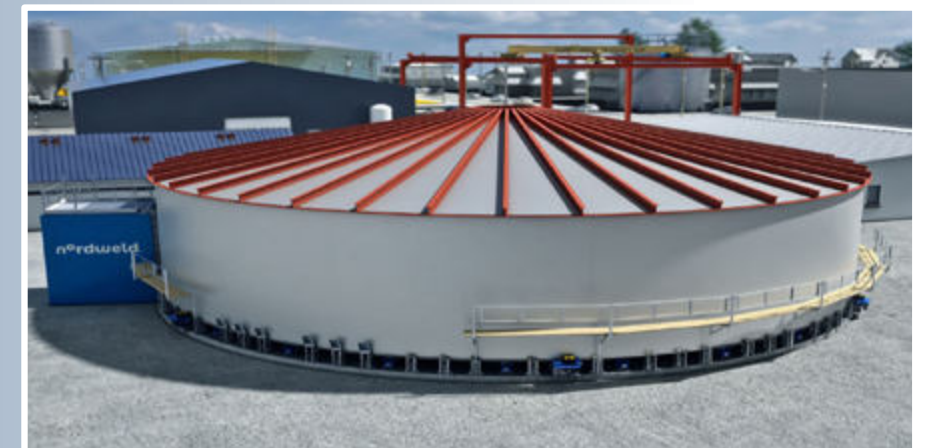
3. Place the equipment at the annular plates and assemble the Lift Jacks.



4. Assemble the 1st course including the top ring.

5. Lift the 1st course and assemble and weld the 2nd course.

6. Assemble the roof construction.



TANK ERECTION PROCESS

2nd method

Advanced system with Wheel Trolley and decoiler / bending machine



7. Lift the entire tank.

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



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

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



- Excellent 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.

2. Place the equipment on the annular plates and assemble the Lift Jacks including Wheel Trolleys.

3. Place the vertical bending machine / decoiler / plate track in position.





4. Feed in the first course.



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

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

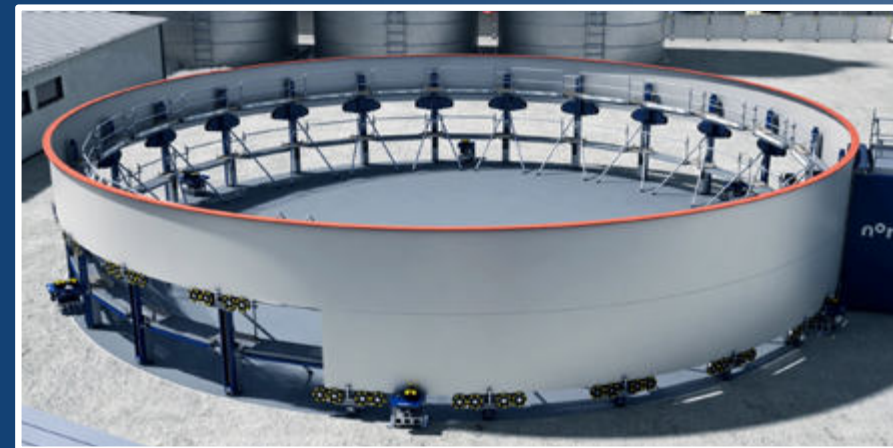
10. Remove the equipment and lower the tank to the bottom and dismantle the Lift Jacks.

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



Options to add:

- Using flat sheets in the Plate Track

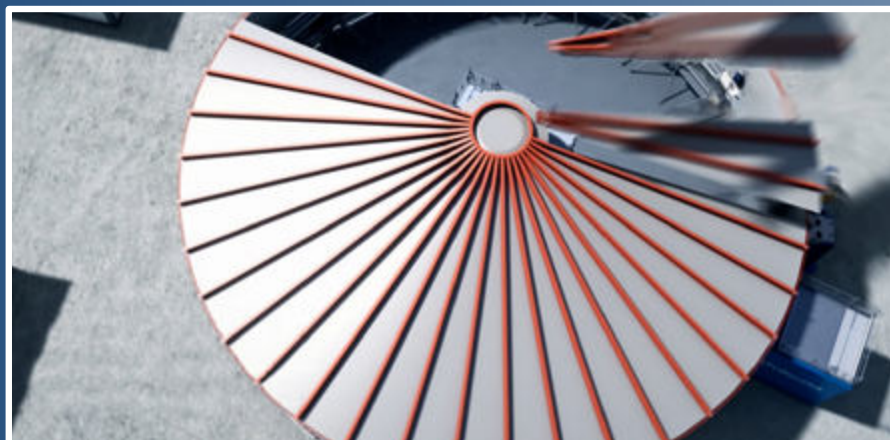


6. Feed in and tack weld the 2nd course, lower Jack one by one during the in-feeding of the sheet.

- Mechanized welding in vertical/horizontal position with different methods

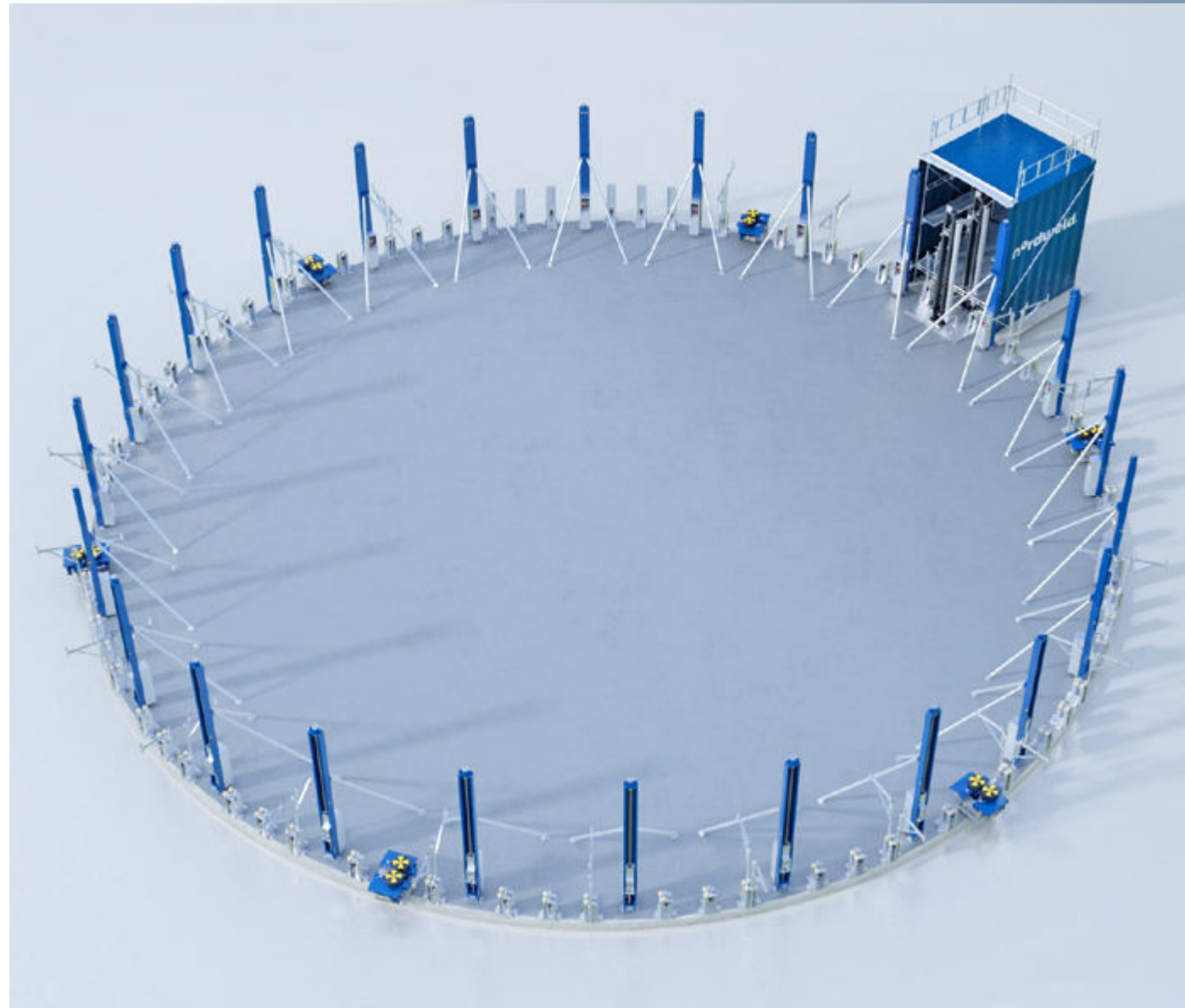


7. Assemble the roof construction - it is possible to rotate the tank with a rotating shoring tower.



OUR STORY

Niklas Nordin has been working with tank building since 1990. When he started using the new generation of MIG/MAG machines to weld tanks instead of traditional stick welding rods, he came up with the idea of rotating the entire tank and mechanised the welding process. In 1998, he designed and developed the 1st generation of the Nordweld equipment. Over the following years, he continued to develop, test and refine the equipment. In 2014, together with Lennart Karlsson, a mechanical design engineer with over 40-year of experience, he developed the 3rd generation and the current edition of the system. They increased the tank capacity, added different building methods, and improved the system's flexibility and feasibility.



OUR QUALITIES

We are focused on delivering high-quality products that not only meet the requirements of our clients but also go beyond current trends. We never cease to search for new solutions. We understand the value of time and money, therefore we provide a complete product that does not require any additional equipment like cranes or scaffoldings. Trustworthy technology, and safe and reliable equipment are a guarantee of our clients' satisfaction and trust which is our top priority.

NORDWELD IN NUMBERS

+30

years of experience within the tank building sector

1

20 ft container includes components to construct up to an 18 m diameter and 200 tons lifting capacity

50%

reduction of production costs compared to traditional construction method

700

tons and 50 meters in diameter maximum capacity

SELECTED PROJECTS

United Kingdom

2017

1 tank (Standard system):

- height: 25 m (82 ft)
- diameter: 16,3 m (53 ft)
- weight: 89 metric tons
- material: LDX
- welding method: MIG/MAG



Brazil

2018

4 tanks: (Wheel Trolley system):

- height: 30 m (98 ft)
- diameter: 21 m (68 ft)
- weight: 210 metric tons
- material: LDX
- welding method: Plasma



Mexico

2019

4 NFC tanks (Wheel Trolley system):

- height: 30 m (98 ft)
- diameter: 19 m (62 ft)
- weight: 153 metric tons
- material: LDX
- welding method: Arc Tig



Belgium

2019

2 tanks (Wheel Trolley system):

- height: 23,2 m (76 ft)
- diameter: 20,2 m (66 ft)
- weight: 125 metric tons
- material: LDX
- welding method: Arc Tig

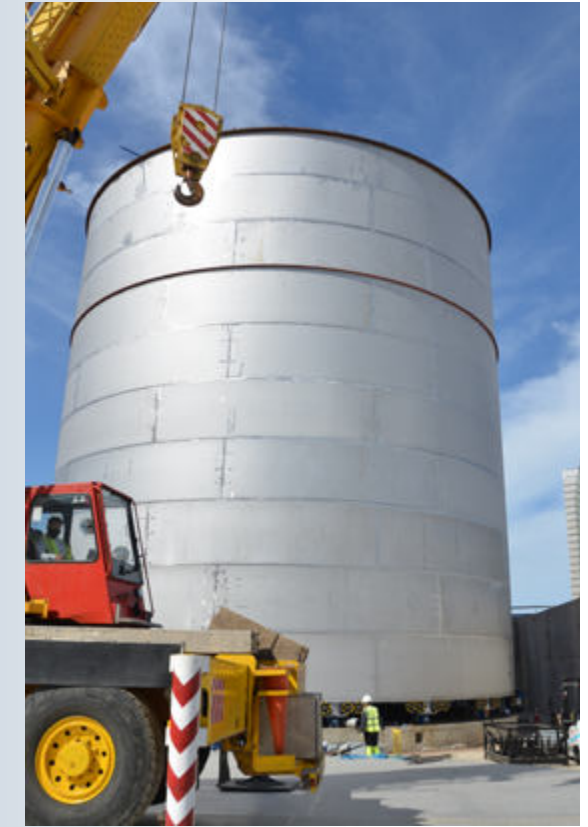


Uruguay

2020 - 2021

11 tanks (Wheel Trolley system):

- 3 tanks Ø 19 m / H 20 m
- 110 T LDX
- welding method: Arc Tig
- 6 x CS tanks Ø 16 - 18 m / H 20 m
- 70 - 90 T S355
- welding method: SAW
- 2 tanks Ø 9 m / H 15 m
- 20 T 316L
- welding method: FCW



Uruguay

2021 - 2022

10 tanks (Wheel Trolley system):

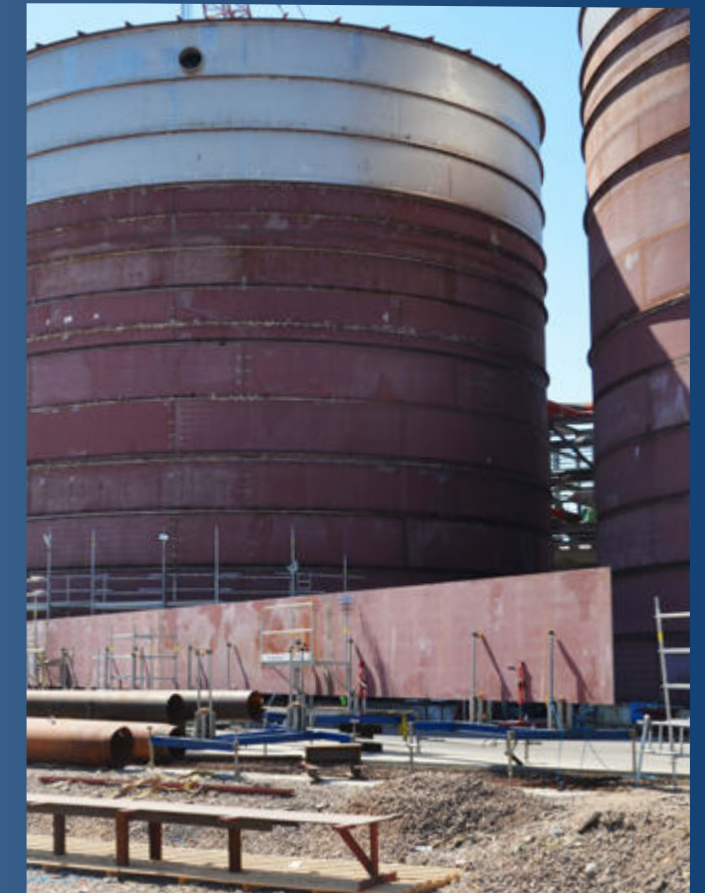
- 2 tanks Ø 26,7 m / H 28 m
- LDX 2101 / CS
- welding method: FCW & SAW

- 1 tank Ø 22,1 m / H 26,85 m
- LDX 2101
- welding method: FCW & Arc Tig

- 1 tank Ø 11 m / H 15,5 m
- 1.4301
- welding method: FCW & Arc Tig

- 1 tank Ø 19 m / H 25,8 m
- LDX 2101
- welding method: FCW & Arc Tig

- 5 tanks Ø 6 - 12 m / H 12 - 40 m
- 1.4301, 1.4362
- welding method: FCW



Germany

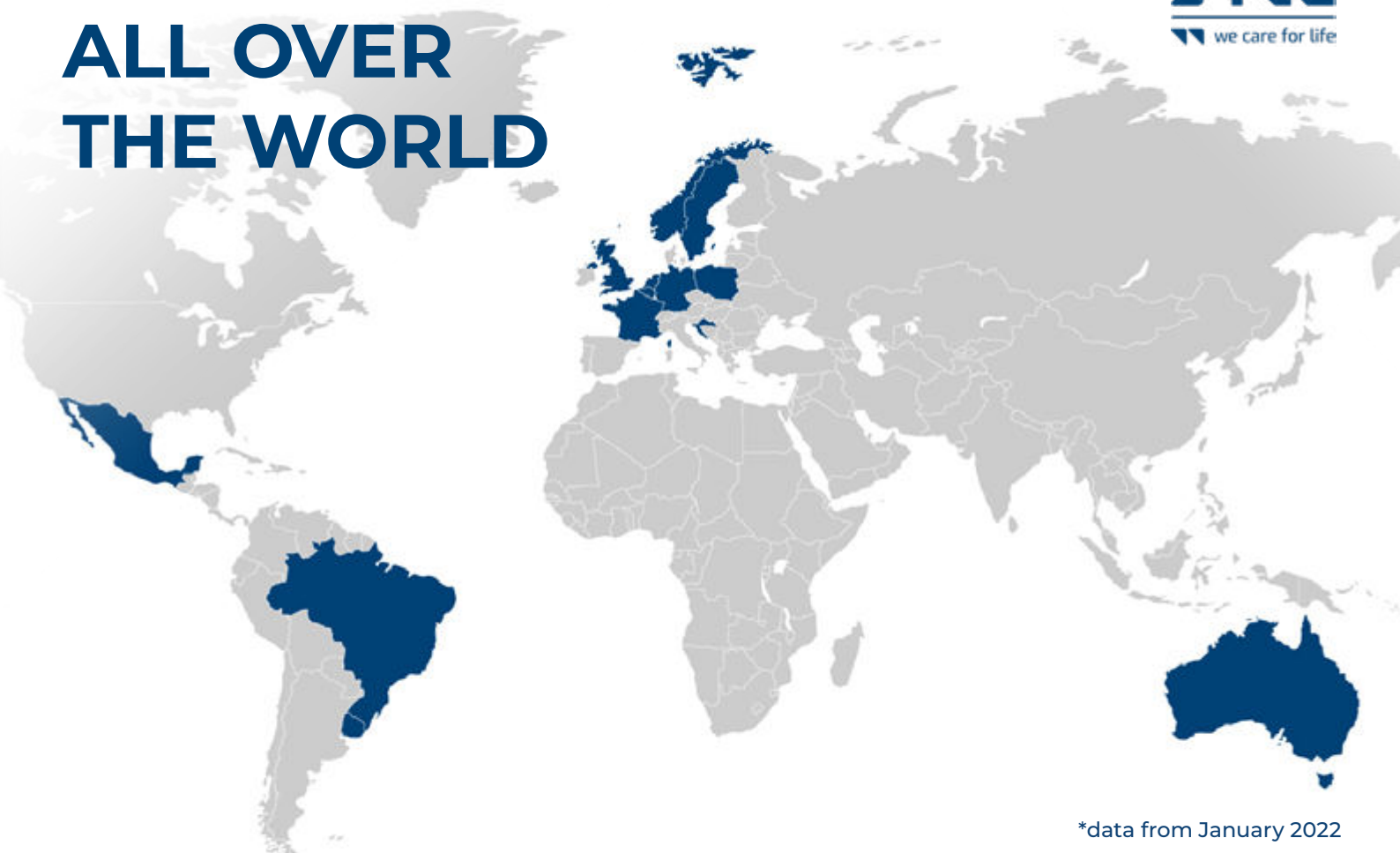
2021

2 tanks (Wheel Trolley system):

- height: 22,7m
- diameter: 26m
- weight: 206T
- material: LDX
- welding method: Arc Tig



WE WORK ALL OVER THE WORLD



*data from January 2022

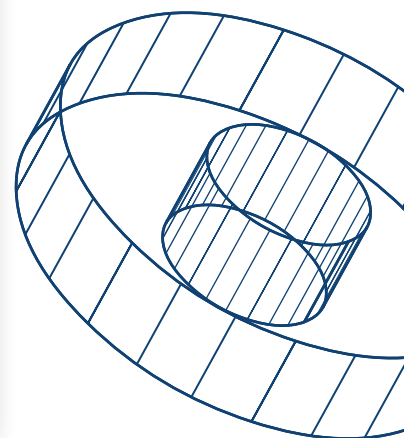
Would you like to start working together?

CONTACT US

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We are member of
TLC Group



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