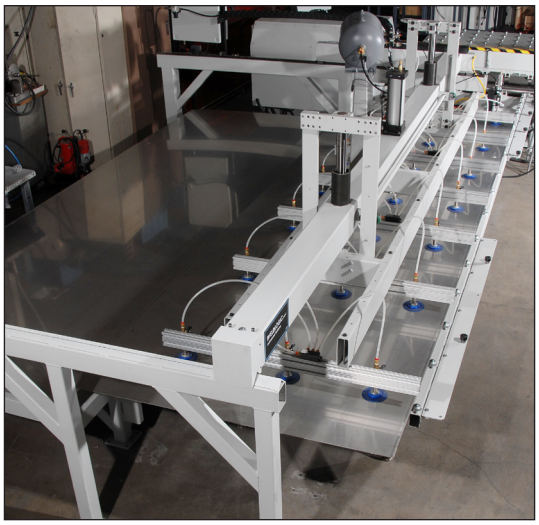
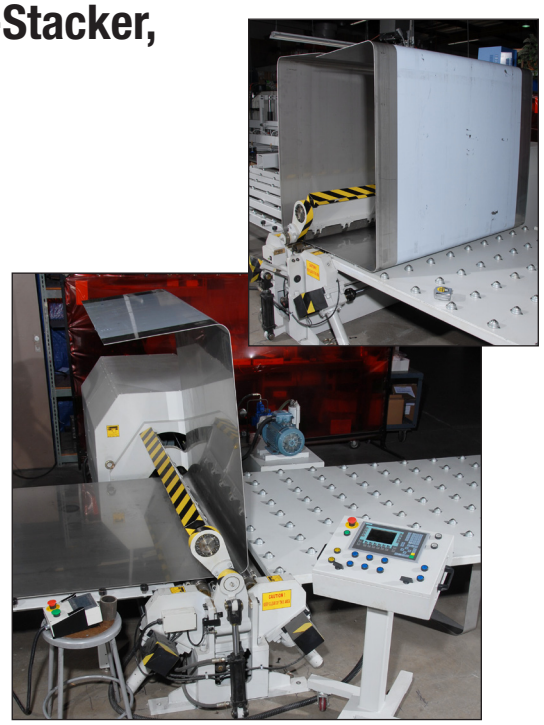
Square Tank Manufacturing Line Sheet Metal De-Stacker, 5 Axis Specialized C.N.C. Plate Roll, Transfer Cart & Elevated Seam Welder with Catwalk

Challenge: Our customer needed to manufacture a range of square tanks at a reduced price in both materials and labor content to compete with offshore tank manufactures.

Solution: Weldlogic developed a specialized 5 axis CNC rolling system to form the square tanks with a 2" radius from a single sheet of S.S., eliminating 2 piece construction, 2 seam welds and lots of part handing. Additional savings were also found in a single sheet of Stainless vs 2 sheets of Stainless required in the past.



S.S. Sheet Metal De-Stacker vacuum lifts 3/16" sheets up to 144" length x 60" width and places on transfer table automatically.

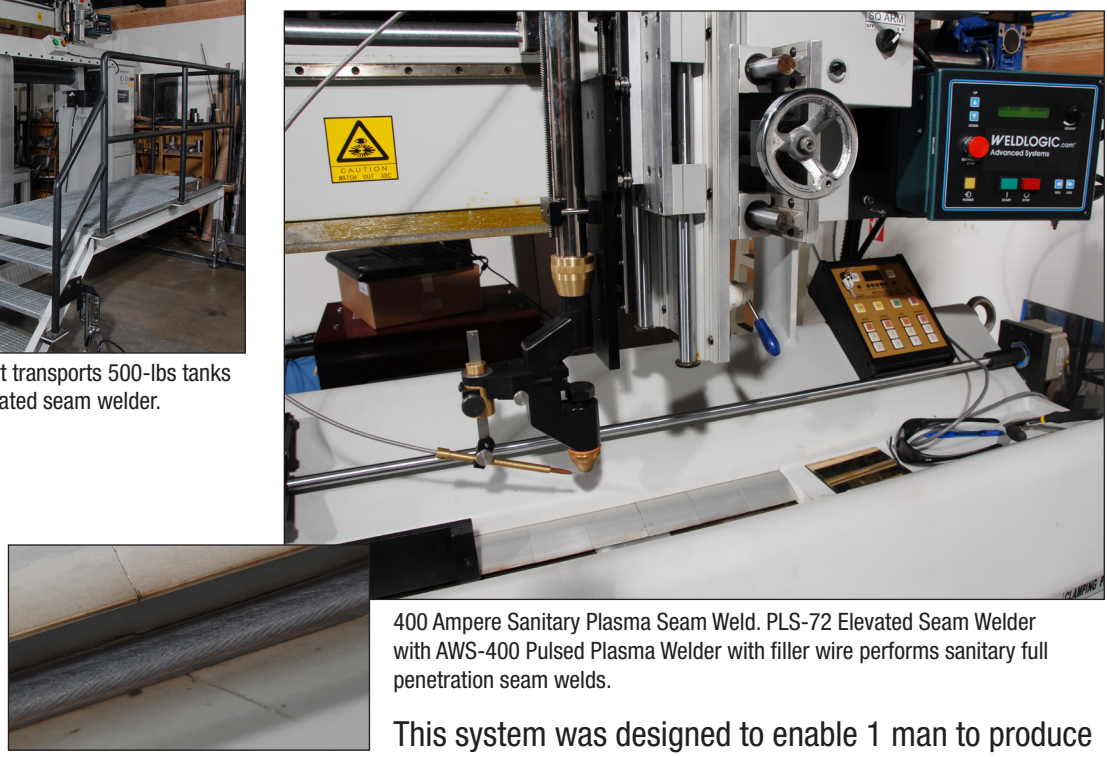


5 Axis C.N.C. Specialized Roll Forming System performs complex forming program to produce a 2" radius square tank in 2-ft / 6-ft squares.



Hydraulically Controlled Transfer Cart transports 500-lbs tanks from forming system to elevated seam welder.





400 Ampere Sanitary Plasma Seam Weld. PLS-72 Elevated Seam Welder with AWS-400 Pulsed Plasma Welder with filler wire performs sanitary full penetration seam welds.

This system was designed to enable 1 man to produce up to 60+ tanks per 10 hour working day vs 3 men to produce 50 tanks in a 10 hour day.

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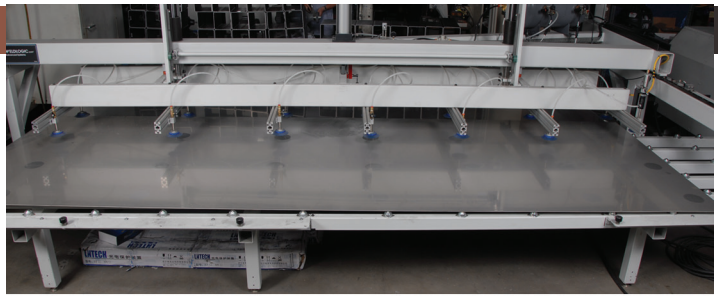
Sheet Metal De-Stacker

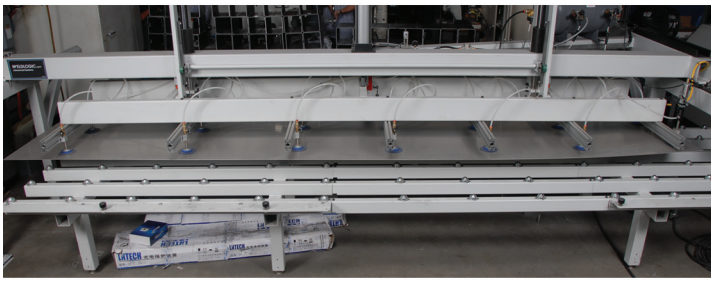
Weldlogic engineers designed a de-stacker to enable material lengths of up to 144” length x up to 60” width with a vacuum lift and sheet transfer system.

A PLC is provided to manage the system and vacuum lift and transfer program. This special engineered machine de-stacks the sheets from pallet without operator labor and delivers the sheet to the C.N.C. roller in feed table.

The automatic De-Stacker accommodates a wide range of lengths and widths with sensors to determine which vacuum cups are actuated.

Features:
- Operator-free material transfer
- Accommodates a wide range of widths and lengths
- PLC controlled
- Lift and position sheets in less than 45 seconds.





5 Axis Specialized C.N.C. Plate Roll

Weldlogic engineers were challenged to produce a 4-roll plate forming system to produce a square tank in 304-Stainless Steel 3/16” thick with 2” radiuses in widths to 60”.

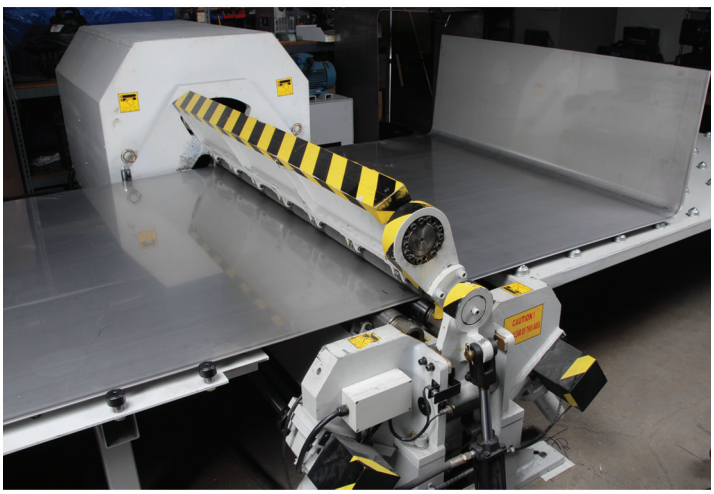
A specialized machine with 5 axis was required to enable the top roll to be small enough in diameter to form such a small radius over a long length.

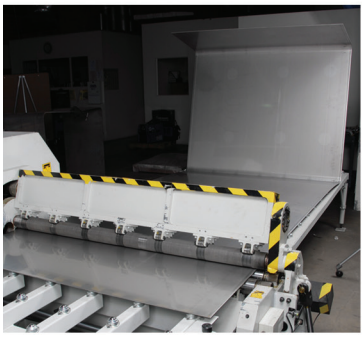
The top roll needed to be small to form such a small radius in the tanks so a deflection beam needed to be designed to eliminate top roll deflection.

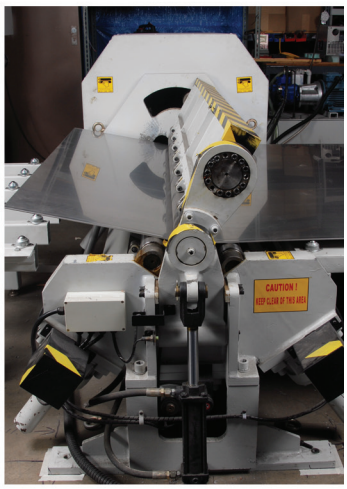
The forces on the top roll and beam structure during roll forming required the beam structure to tilt up to 30 degrees to properly form the tanks.

This 5th axis was provided to enable the deflection beam and top roll be in the proper position for the high forces encountered during forming.

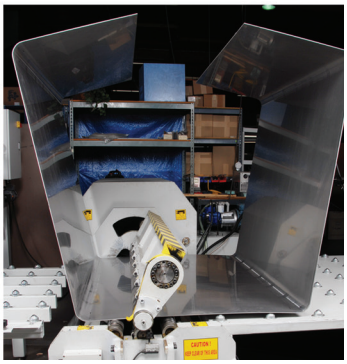
Features:
- 5 Axis Specialized C.N.C.
- Heavy Duty Hydraulic Driven
- Encoder Positioning
- Memory for 100 programs
- Precision Jack Screws
- Hardened Rolls
- Deflection Beam











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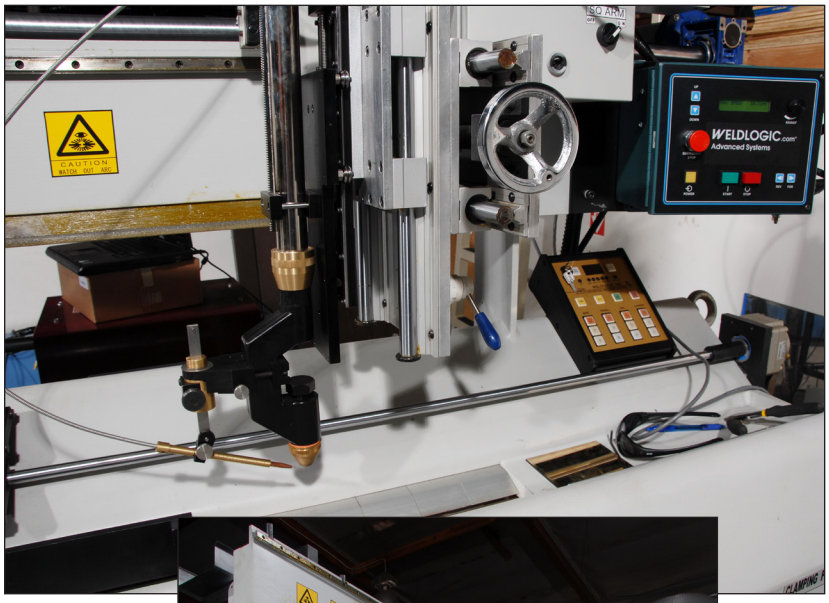
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Transfer Cart



The transfer cart was designed and provided to move the full range of tanks from the roll forming system to the seam welding system. The cart had to accommodate tanks up to 500+ lbs and adjust to the proper seam height depending on the tank size. The cart was hydraulically driven on tracks to move the tanks to and from seam welder as well as the required up and down motion. A joy stick control was provided to move the cart in both required axis.

PLS-72 Elevated Seam Welder with Catwalk



Weldlogic engineering designed an elevated PLS-72" seam welder to accommodate the longest seam weld & largest square tank 60" x 60" square.

The elevating the seam welder required special catwalks on tracks to enable operator access based on tank width.

A 400 ampere Weldlogic AWS-400 Plasma Power Supply was provided with Arc Voltage Control and Wire Feed to produce full length full penetration sanitary tank welds.

The seam welder enabled a low skilled non welder to produce high quality computer controlled seam welds of the highest quality.

Features:

- Computer Controlled seam welding with memory
- Remote clamping sequencer





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