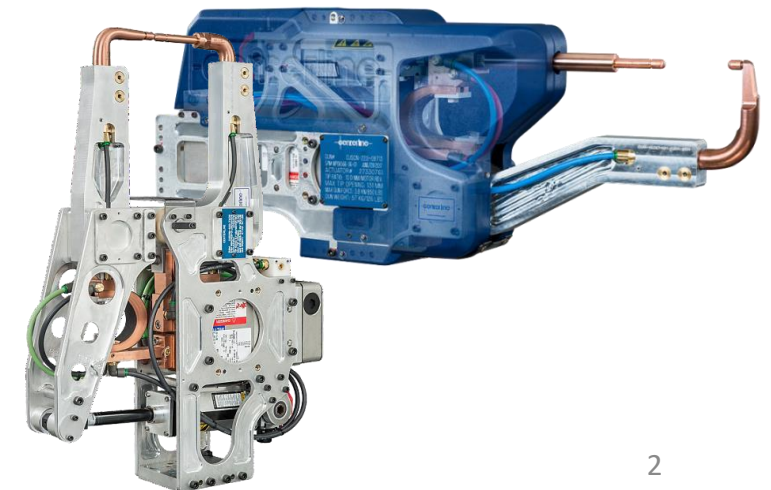
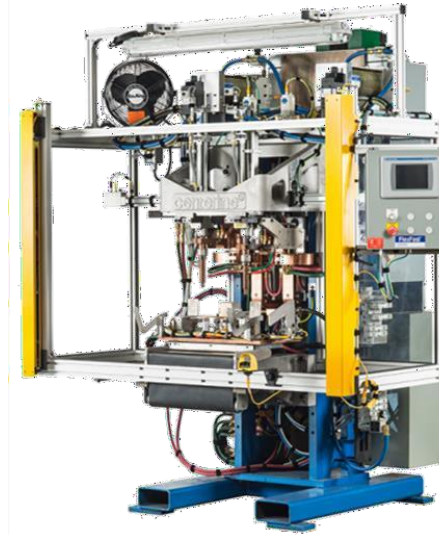


# CenterLine

## European Overview



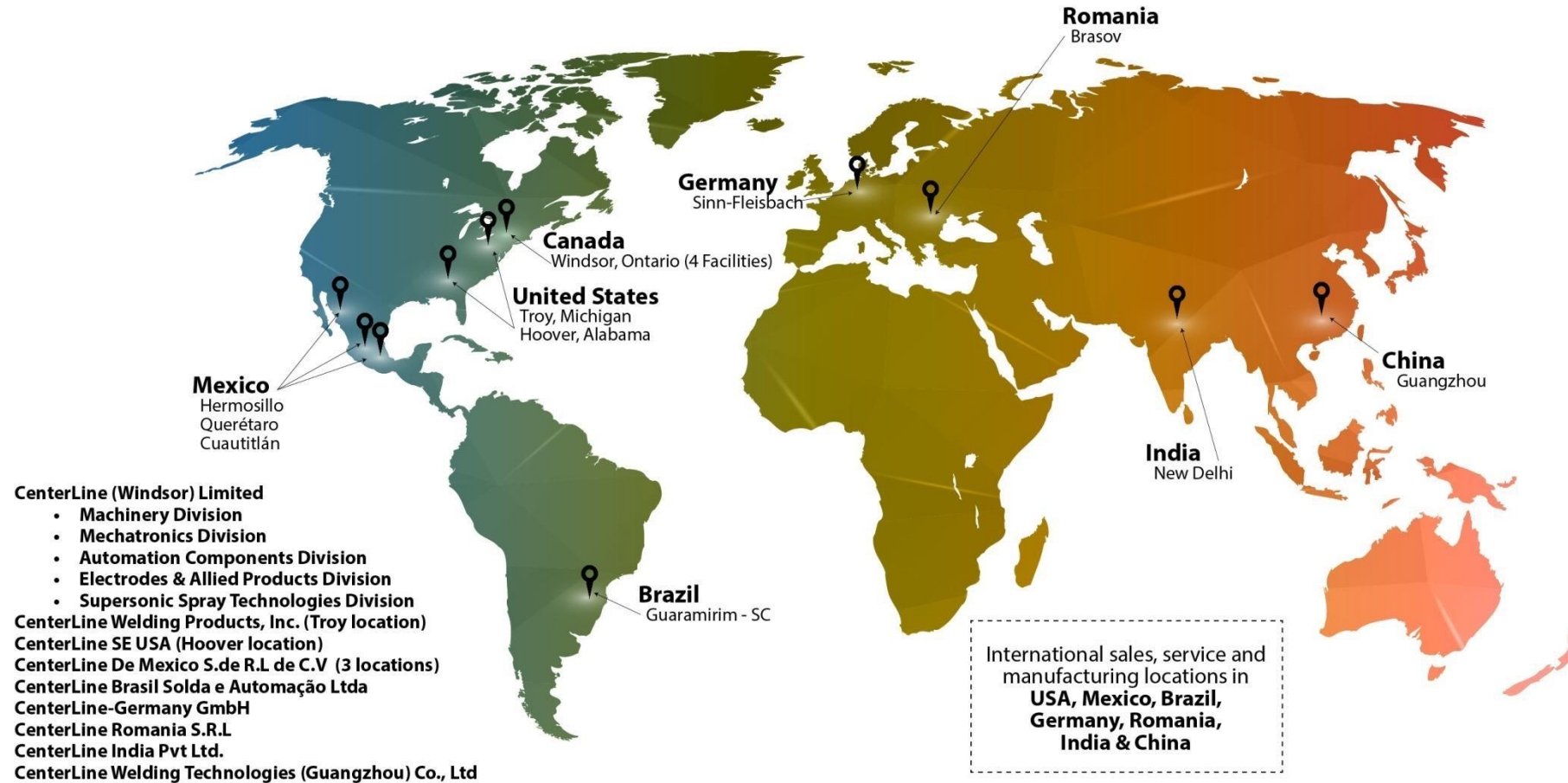
1. CenterLine (Windsor) Limited
2. CenterLine Germany GmbH
3. Customer Overview
4. VeriFast LVDT
5. CenterLine Welding Guns
6. Projection Welding Machines
7. High Speed Welding Cells
8. Potentials





- Privately held company
- Founded in 1957 by the Beneteau family
- Current annual turnover >230 million USD
- More than 44.000 m<sup>2</sup> production area and over 800 employees in Windsor, 1100 worldwide
- Technology leader with numerous patented brand products
- Main customers : Tier 1 & 2 auto part suppliers and automotive OEM's
- One of the largest companies in welding technology with international locations in the USA, Mexico, Brazil, Germany, Romania, India and China







- Privately held company
- Founded in 2004
- Current annual turnover €5 million
- Approx. 1.600 m<sup>2</sup> production area
- 20 employees including 1 trainees
- Design & production of customized solutions
- Project management, process development and service
- Know-how in a variety of processes including:  
Resistance welding, Mechanical assembly,  
Handling systems, ...
- Major customers: Tier 1 & 2 and  
automotive manufacturers
- Certified according to ISO 9001:2015





aiut



TASKOPROJEKT



voestalpine

FANUC

VALIANT TMS

GATZSCH

DAIMLER



ThyssenKrupp

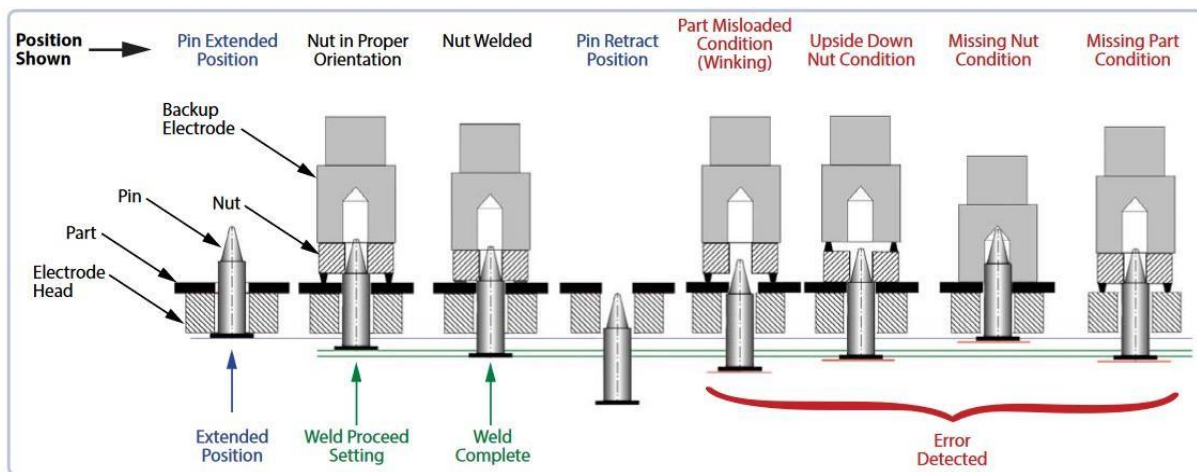
SODECIA



## Fastener Detection

### VeriFast™ LVDT

- Designed to detect if a fastener is present and/or in the correct orientation.
- Extremely accurate to virtually eliminate part quality issues related to incorrect fastener welding.
- Resists application related contaminants to extend mechanical life and reduce maintenance needs. .
- Ideal for nut and stud detection.






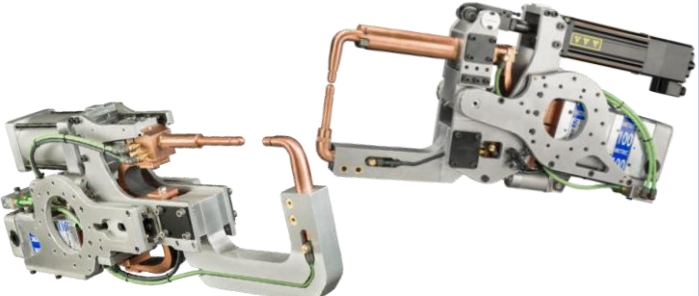
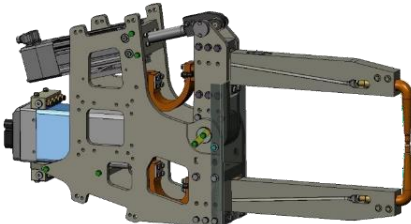
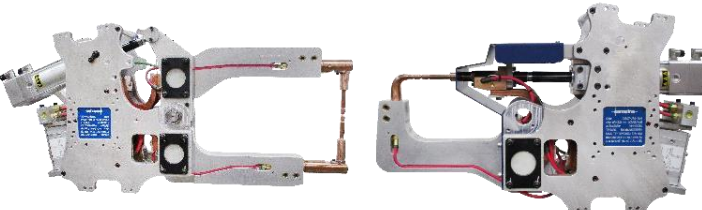
VeriFast™ MicroView

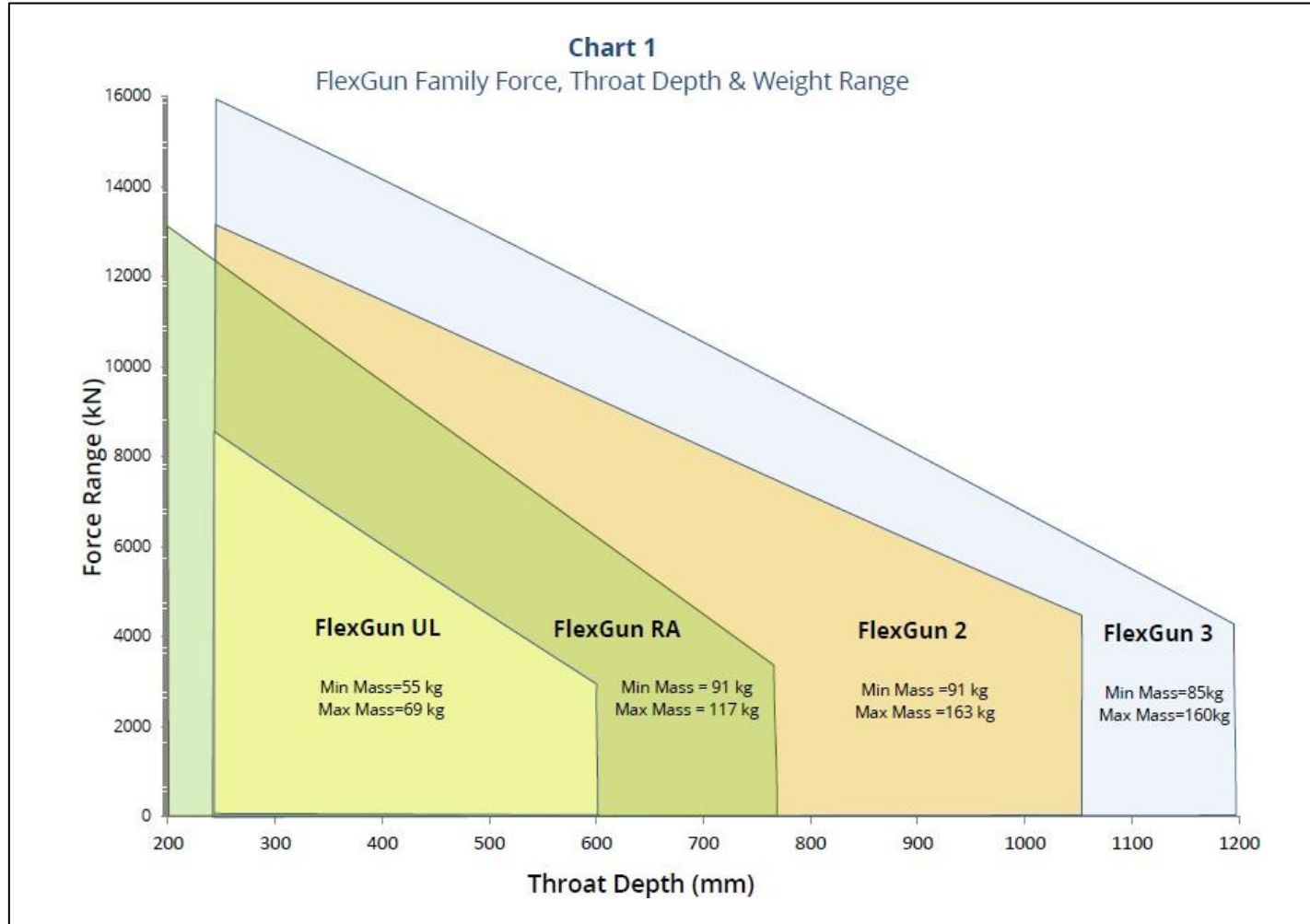






Current main product lines include several weld gun design styles:

<p>FlexGun™ Standard</p>	<p>Voltza™ Transgun</p>	<p>FlexGun™ UL</p>
		
<p>FlexGun™ RA</p>	<p>FlexGun™ 2</p>	<p>FlexGun™ 3 (new)</p>
		



- **The FlexGun™ family is a series of modular gun designs that satisfy the broadest and most common range of spot welding applications.**
- **Each series has a complete library of CAD models available for use in equipment designs.**
- **Custom designs are also possible to address unique application parameters.**

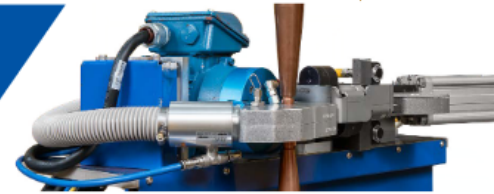
## PedTec™ Stands

- Pre-engineered robust weld gun mounting pedestals.
- Designed to reduce lead times and accommodate CenterLine's family of welding gun styles and tip dressers, cap changers, fastener sensors (VeriFast™ units) and feeders.
- Modular and economical.
- Easily transportable with fork lift holes.
- Customizable with numerous riser heights and mounting angles.





## KapTec™ Cap Maintenance Systems



### IMPROVE UPTIME & REDUCE MAINTENANCE COST

CenterLine's KapTec™ product family is designed to automate the cap servicing operations across a wide variety of applications. It is designed to dress caps and automate the cap removal and replacement process.

CenterLine is the only manufacturer of a self-contained, fully automated cap dressing and cap replacement unit for single ped or dual ped guns.

From robot carried guns to dual ped gun applications, the KapTec system is a solution for all cap servicing needs.

Compared to manual cap changes, KapTec offers improved uptime, reduced maintenance requirements, and improved electrode adapter life.

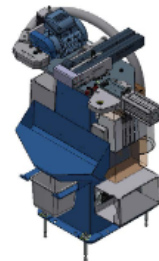
#### STANDARD FEATURES

- Modular design improves serviceability; core components are common across the entire KapTec product line.
- Integrated cap presence detection to verify correct cap removal and installation.
- Extracted cap collection with easy removal.
- Compact design minimizes floor space requirement.
- Available in Dresser-only configuration.
- With optional magazine cover included, caps are protected from expulsion and debris before installation onto electrode adapters.

#### ADVANTAGES

- Dress and change caps on any gun.
- Common core components minimize spare parts inventory.
- Improve machine/cell uptime.
- Minimize operator exposure to inside of cell.
- Better electrode adapter life (no manual cap removal).
- Quick refill with spare magazines.

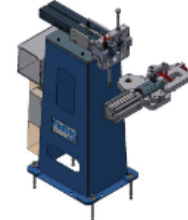
Basic Unit



Carried

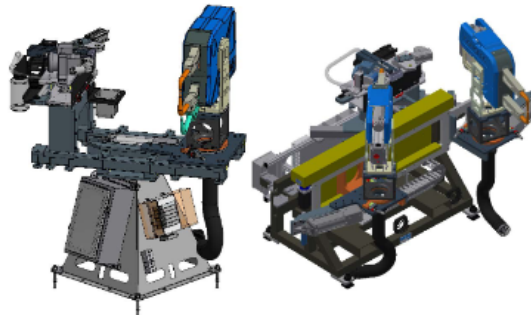


Carried Lite



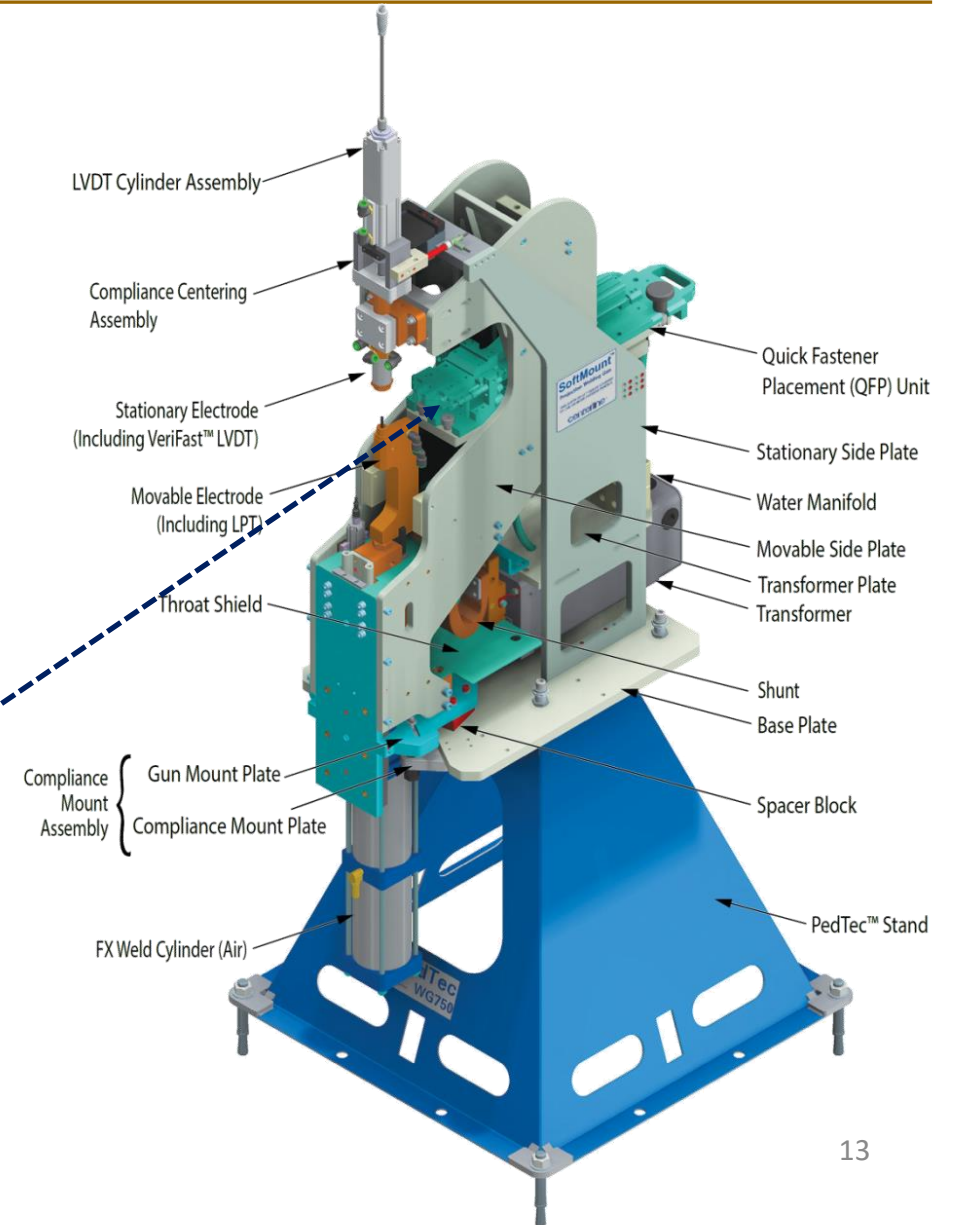
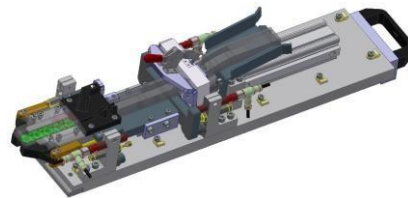
- Able to service angled adapters.
- Easily configured for robot mounting.
- Carried Lite saves approximately 6 kg in payload compared to other carried options on the market.

Single Ped Gun with KapTec - Dual Ped Gun with KapTec



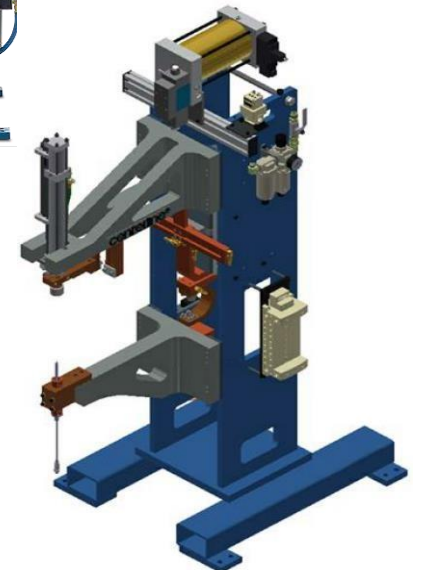
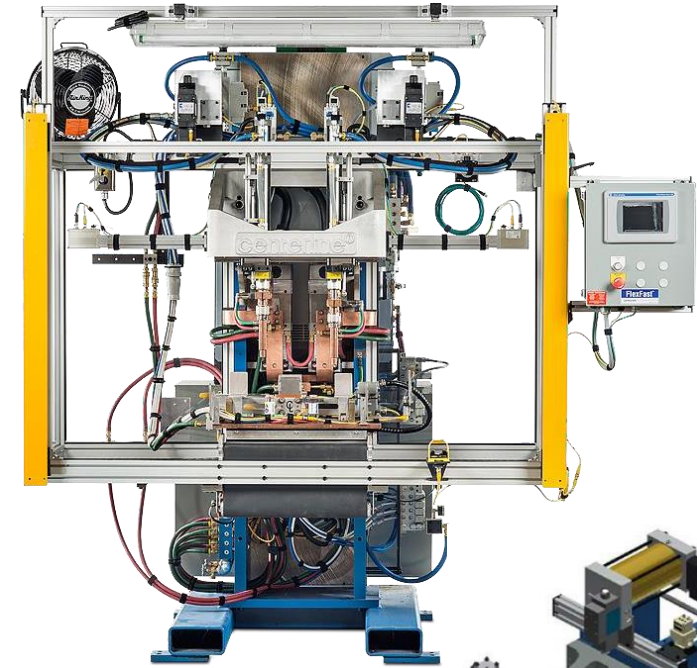
- Highly configurable for different gun geometries & compatible with a wide range of gun options (Single/Dual Ped Gun with KapTec not compatible with C-guns).
- Modular design improves serviceability.
- Cap dress and cap change time can be buried in cycle time.
- No additional payload or cycle time required from material handling robots.
- Full, continuous position control of vertical and horizontal positions for KapTec unit.

- 1.5 seconds cycle time reduction when used with SMG
- Inverted process allows fastener feed while part is positioned by the robot
- Patented C-Frame mounting style to return the gun to initial position without external force
- VeriFast™ LVDT for accurate detection of fastener presence, orientation, and measurement of set down.
- Full leveling adjustment for reliable setup
- QFP holds fastener until placement
  - More reliable than a typical spear loader
  - Mounted behind the lower electrode, saving space and protecting against potential damage



## FlexFast™

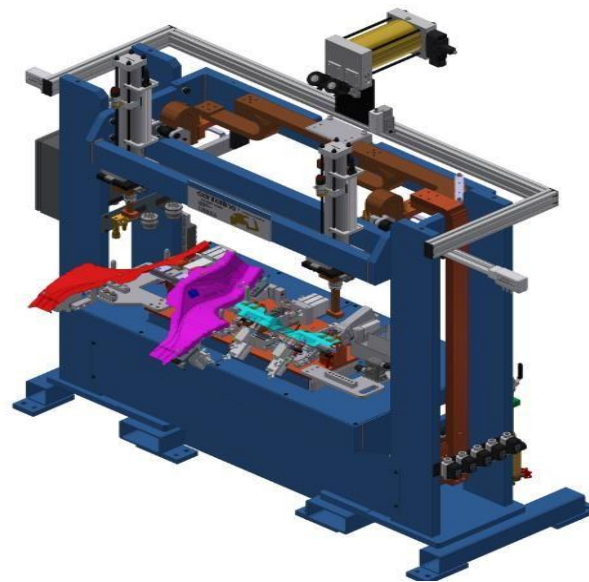
- A full range of **FlexFast** modular welders: **Standard**, **Lite** and **Heavy Duty**.
  - Ideal for either manual or robotic load applications
  - Quick change tooling plates, tool-less electrode holders and a host of other features for rapid part changeovers and maintenance work.
  - Extensive range of weld force capabilities – *the right model for the right job*.
  - Can accommodate multiple part and fastener styles in one machine (i.e. RH, LH, Nut, Stud, etc.)
  - Update or replace tooling for new projects. Easily reconfigurable.
  - Wide range of options (i.e. nut feeders, fastener detection, adjustable weld spacing).
- **Over 1500 FlexFast welders are in current operation since 2010**



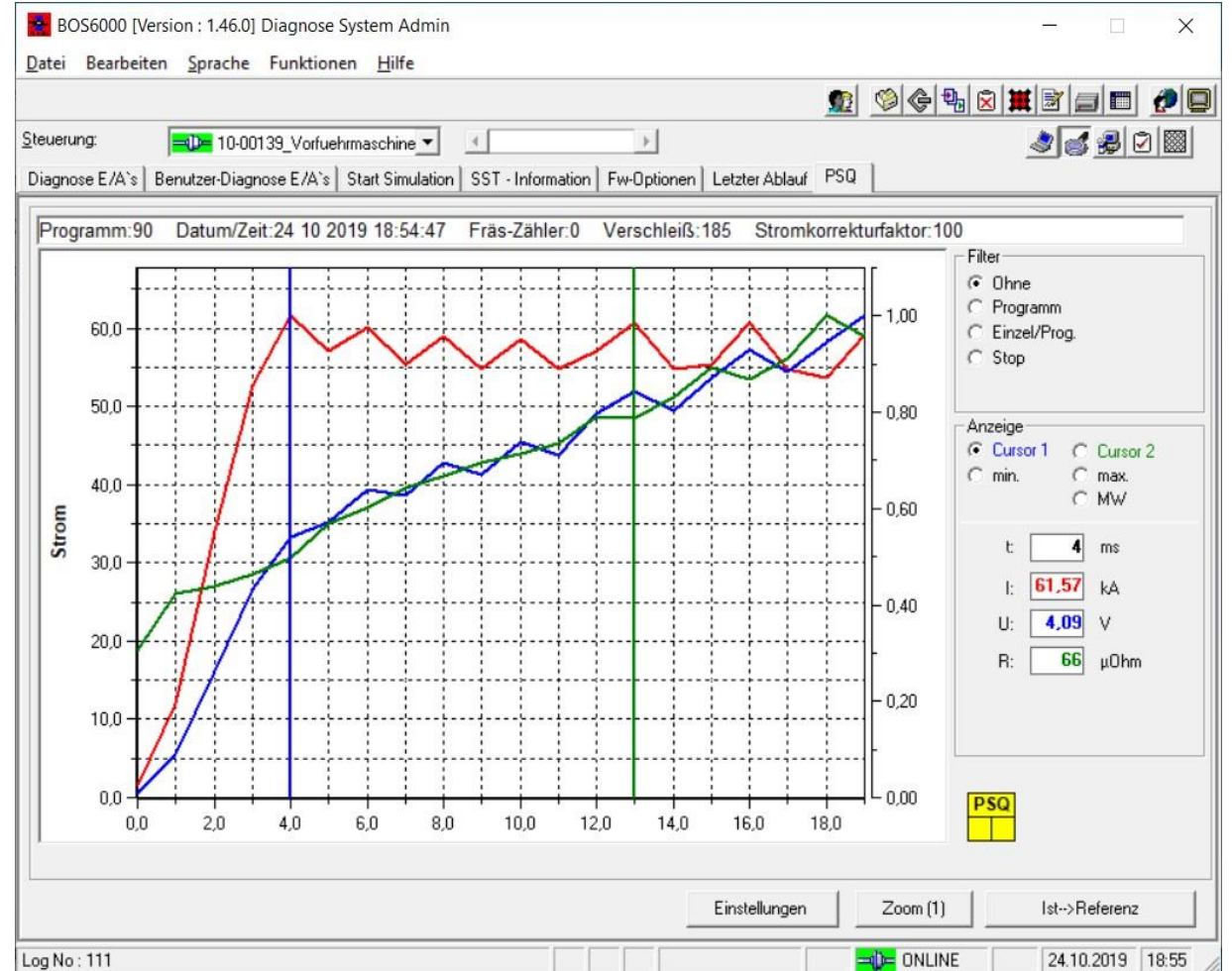
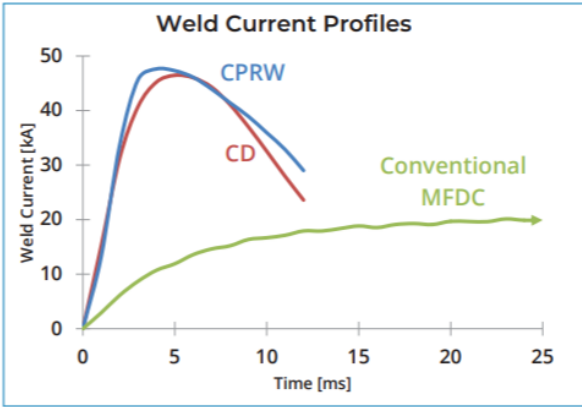
FlexFast Lite™



- 800mm Platen & 1400mm Platen.
- Window Frame will support large cylinders for welding large ring fasteners, 16000 lbs/70 kN Maximum Weld Force.
- Finished parts are ejected through the window, they do not return to the operator.
- Integrated error-proofing to ensure quality projection welds



WindowWelder™

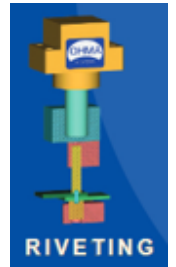


New projection welding process that is built on the fundamentals of resistance welding and MFDC machines but leverages technological advances to further refine the process and decrease variability in results.

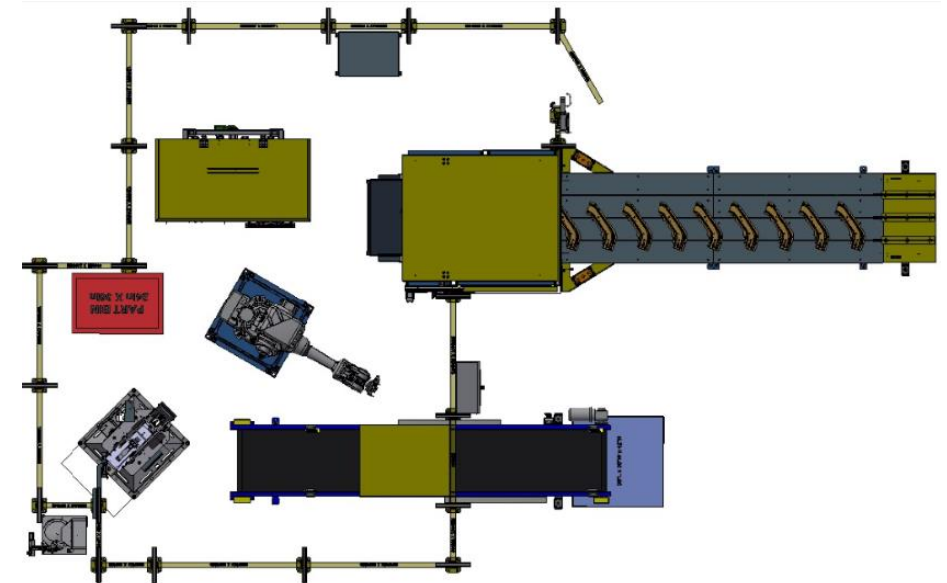
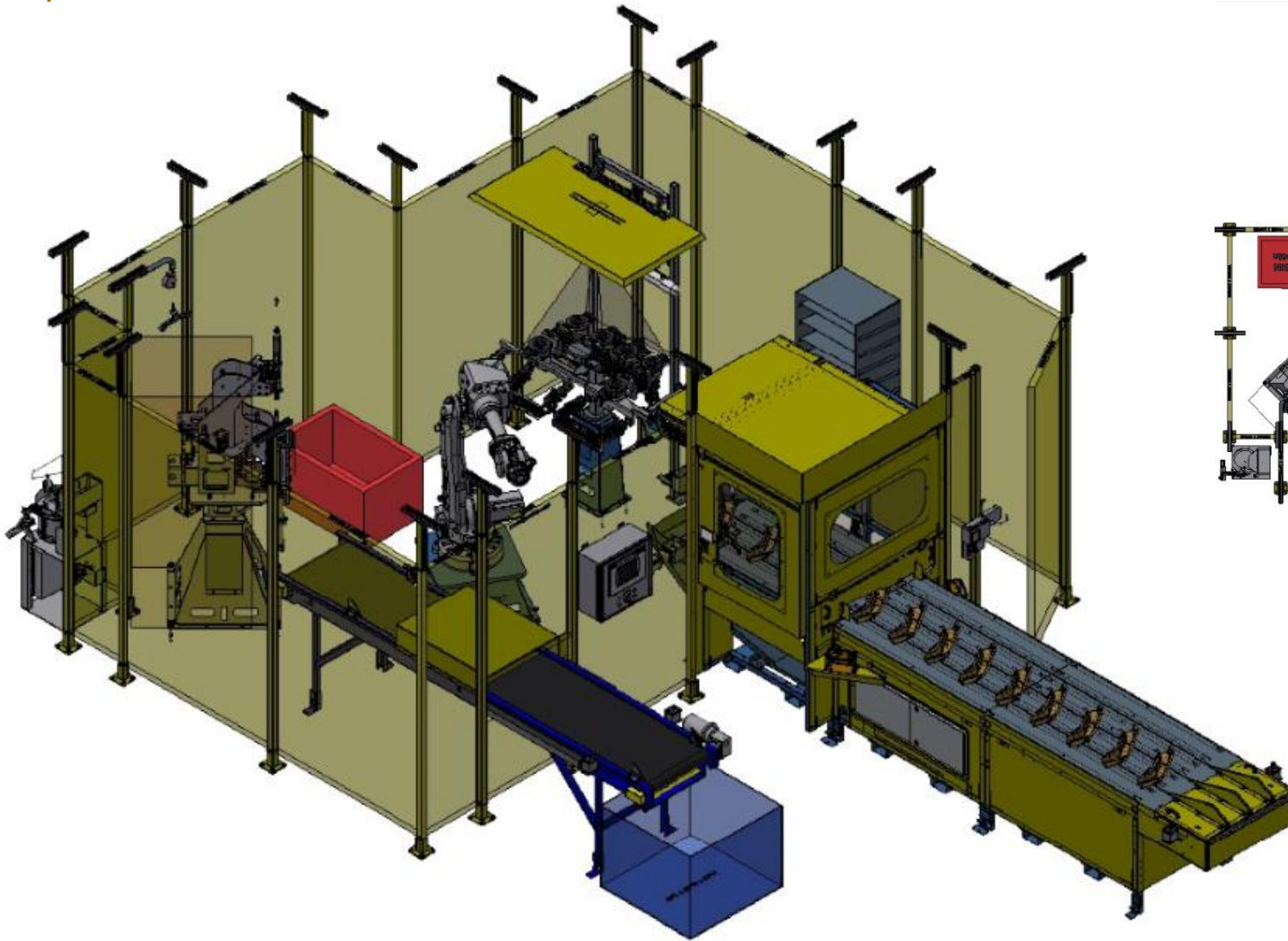


## OHMA® Presses

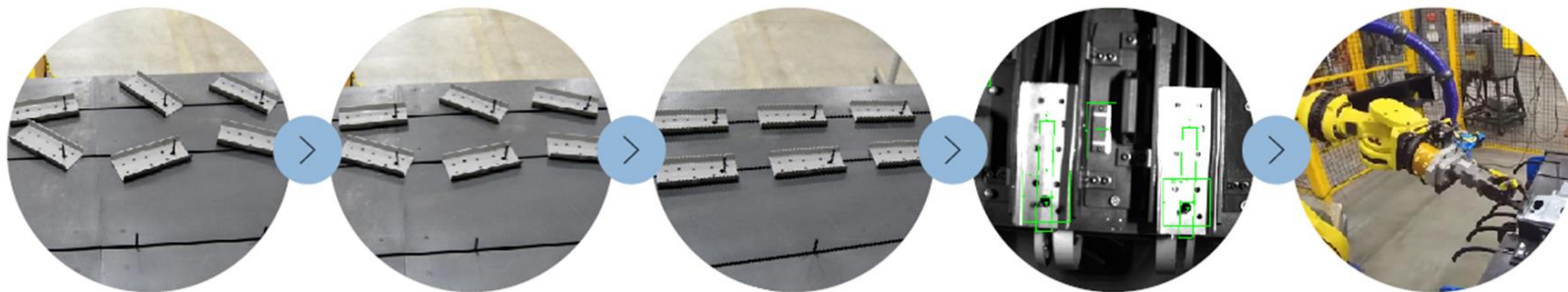
- Ideal for performing a variety of metalworking applications including: piercing, self-pierce riveting, pierce-nut installation, coining, crimping, assembly, clamping, stamping, trimming, bending, tube flaring, staking and forming.
- Designed for low impact (soft touch) and deliver ½” of high force stroke.
- Completely adjustable; stroke and cycle time set by user.
- Available models for applications requiring between 4-70 tons of force.
- Suitable for production or prototype metal working needs.







- Intelligent machine tending solution, designed for simple integration and maintenance
- Optimize operator utilization, one operator can load parts on more than one PinPoint
- Part buffering to increase machine throughput, run through breaks and lunch
- Integrated vision to verify part type and robot pick-up location



Operator easily loads the parts onto the pins in an approximate orientation at the loading zone. As the pins drag the parts along the conveyor, the drag motion orients the parts.

Integrated vision system verifies the part is compliant (correct part, in the correct position and orientation).

Compliant parts are picked by a robot inside the cell, while the non-compliant parts fall into the part reject chute or reject bin while the cell continues to run.





**Integrated Stand-alone Vision System**  
Up to four (4) cameras with integrated lighting and shrouding to ensure quality images to validate part type and location for robotic pick-up.



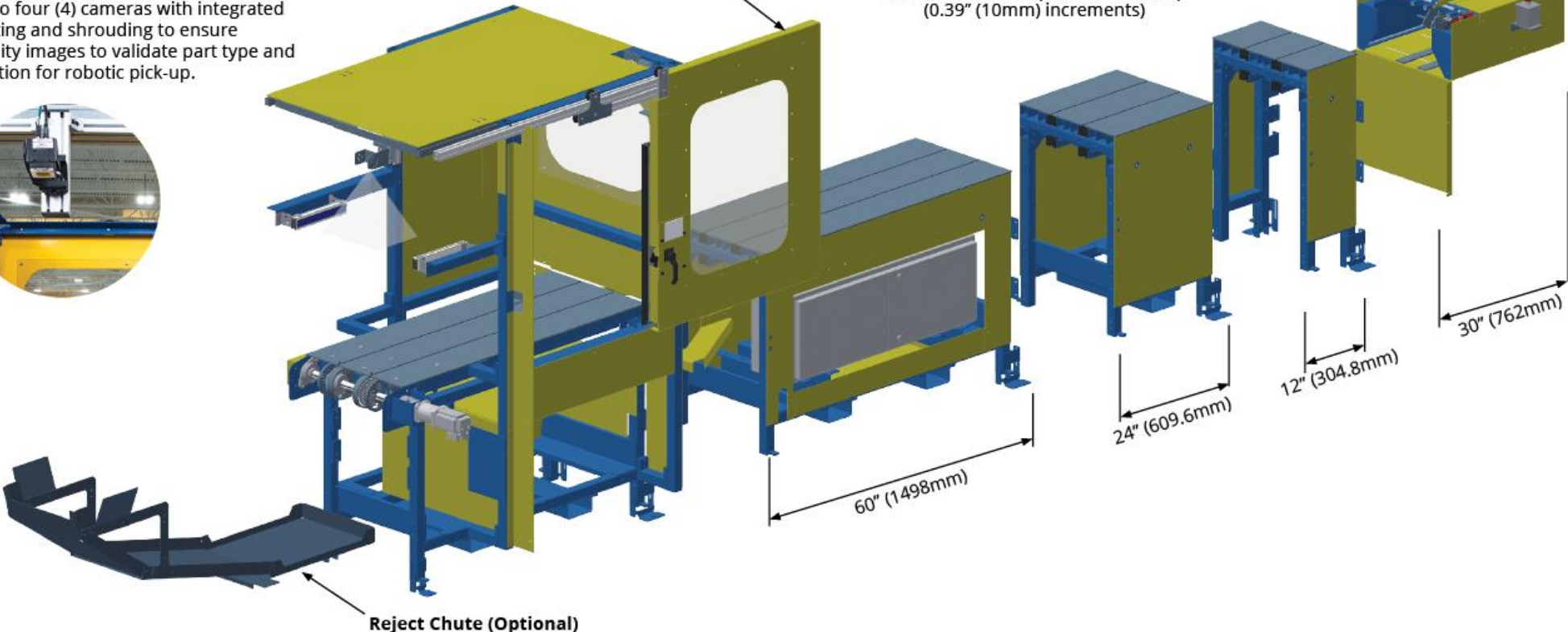
**Side Access Door (Optional)**



**Pins**  
M4 - 1.18" - 3.94" (30mm - 100mm)  
(0.39" (10mm) increments)

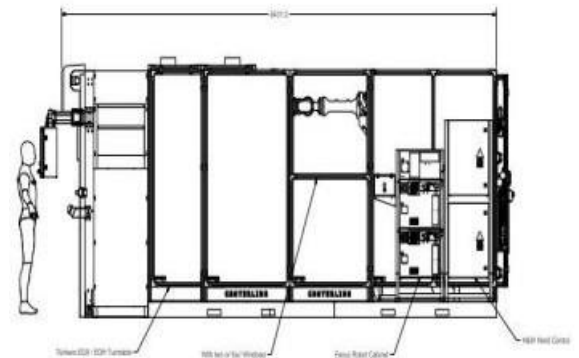
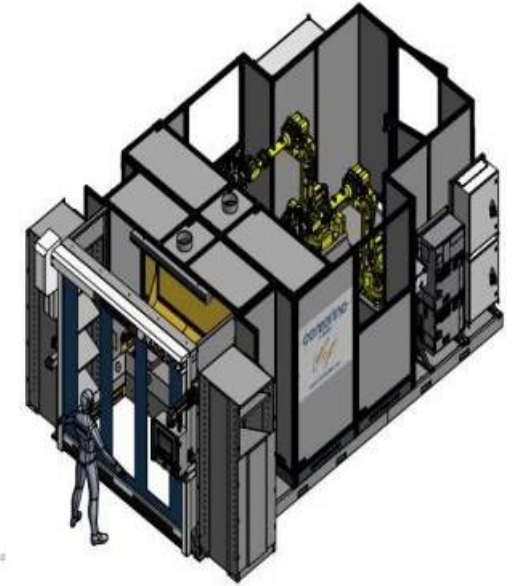
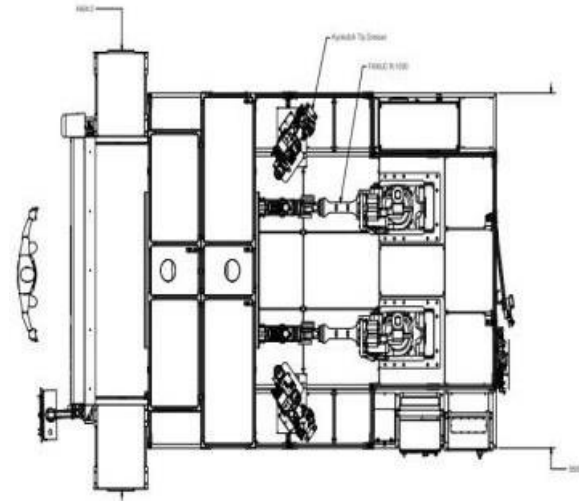
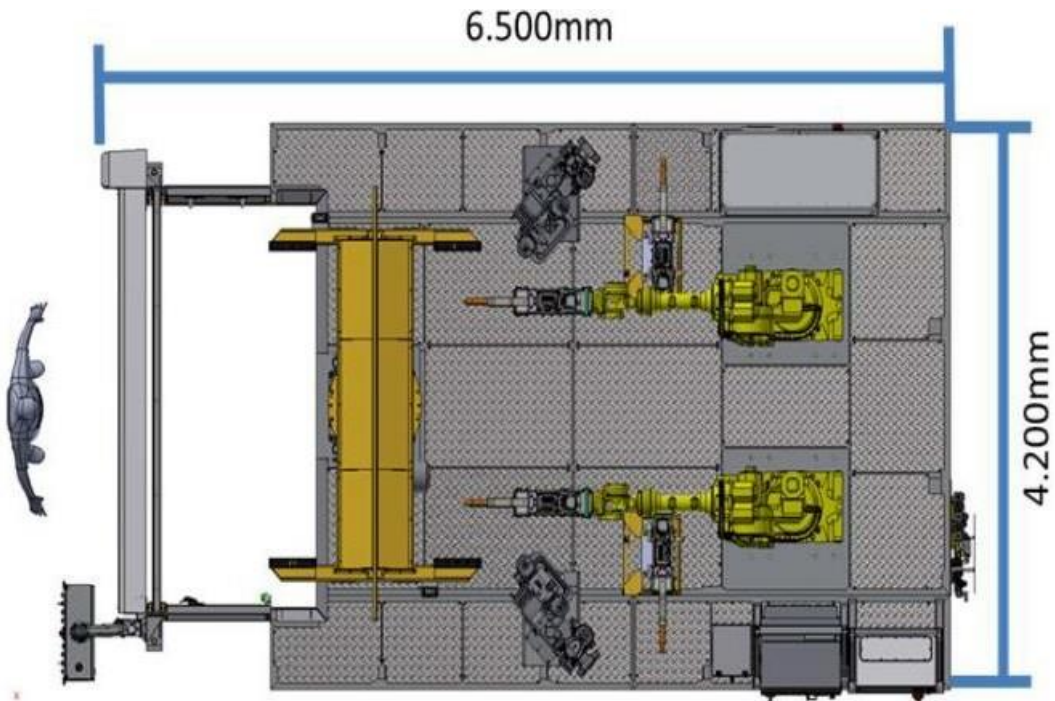
**Configurable Lanes**  
One to four lanes with adjustable pitch between adjacent lanes 90.55" - 169.29" (2300mm to 4300mm) length.

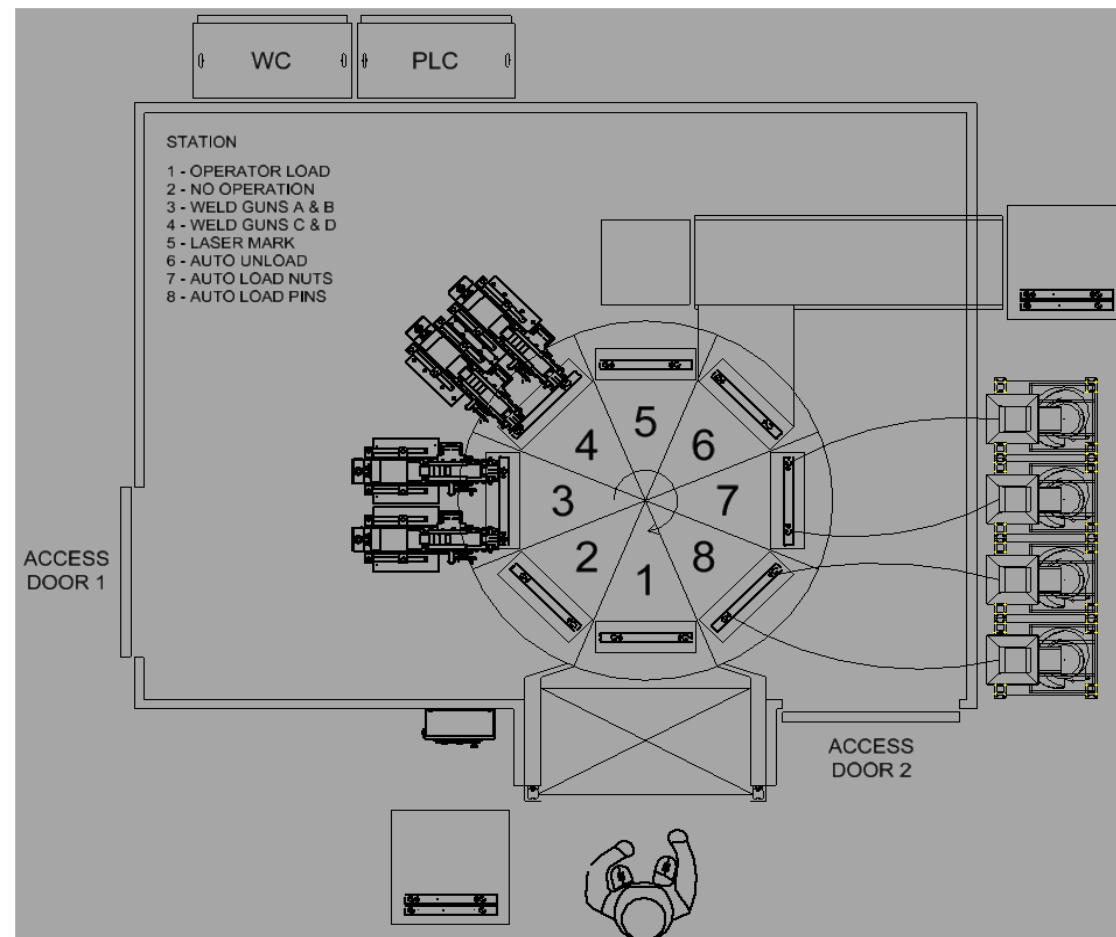
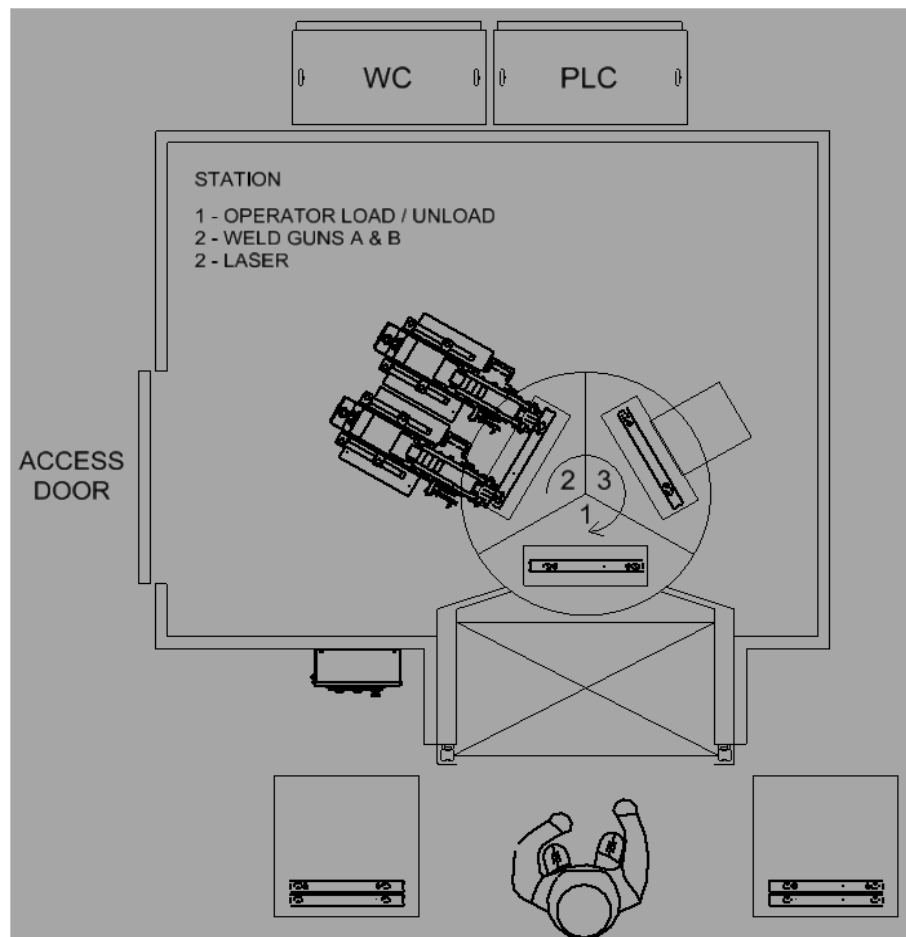
23.62" (600mm)  
35.43" (900mm)  
47.24" (1200mm)



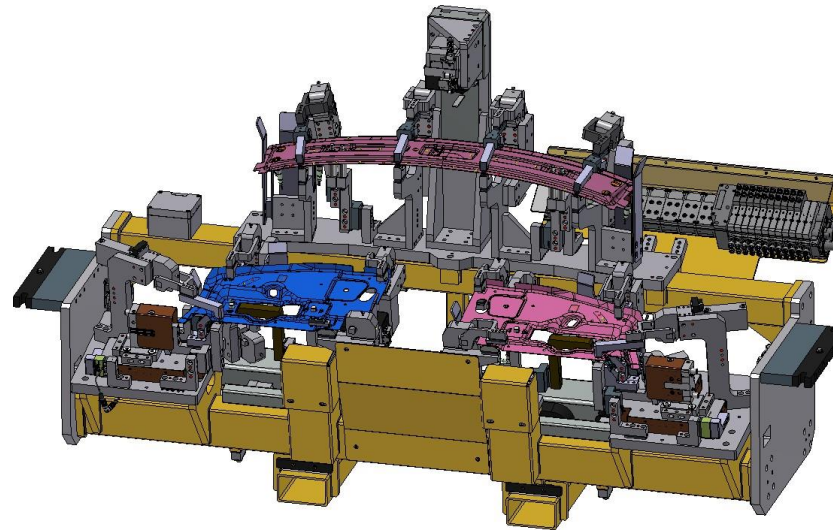
**Reject Chute (Optional)**







**Design,  
Modification  
and Retooling of Customer applications/solutions  
=> We offer the complete Project Management Process**





- **Fastener detection VeriFast™ LVDT**
  - **Weld guns**
  - **PedTec™ Stands**
  - **Soft Mount Gun**
  - **Projection Welding Units FlexFast**
  - **Window Welder**
  - **Press**
  - **Controlled Pulse Resistance Welding**
  - **High Speed Nut/Stud Welding Cell**
  - **High Speed Resistance Welding Cell**
  - **High Speed Turntable Cell**
  - **Design, Modification and Retooling**
  - **Process development support**
- **Steel**
  - **Aluminium**
  - **IIoT**
  - **Industrie 4.0**
  - **Pre-series welding**