



ALL TECH ENGINEERING



Designers and Builders of:
Specialized Automated machinery,
Gages and Fixtures

Examples of Capabilities



Caveat



The following pages contain examples of typical ATE projects, a brief description of the system, basic machine content for that particular piece of equipment. It is important to remember that each system ATE designs and builds are project and customer specific.

Just as every customer is unique, every project is unique. The attributes associated with each customer, product, material, process, delivery requirements, etcetera, contribute to the final pricing.

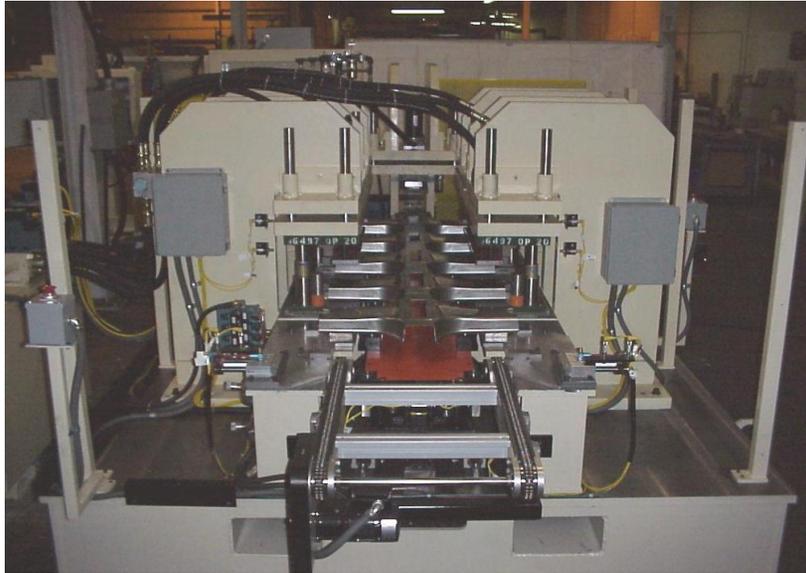
Customer needs are carefully evaluated during the quotation of every application. Cycle time requirements, space limitations, environment, durability issues, safety requirements, and ergonomic criteria are just a few topics reviewed prior to quoting.

Please give us a call or e-mail, we are more than happy to evaluate your needs and provide you with a project specific quotation.





Walking beam Transfer Pierce & Trim

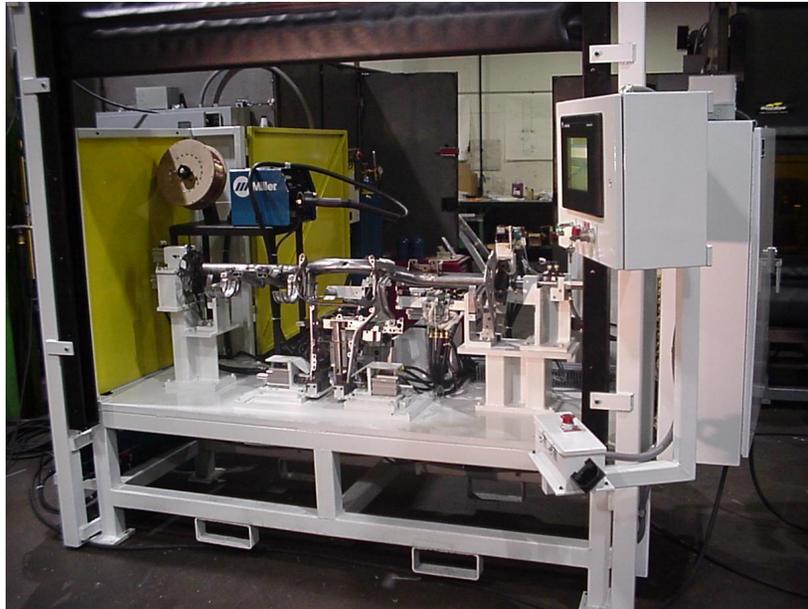


•Walking beam transfer system used to: pierce, trim and form a wire retention device in the product before auto ejecting it

- ALLEN BRADLEY 5/04 controller
- ALLEN BRADLEY 600 panel view
- THOMSON linear components
- POWER COMPONENTS lift racks
- PARKER cylinders
- PIVOT punch components
- Plate constructed base w/ fork pockets
- Plate constructed C-frame
- Integrated hydraulics
- Automatic un-load system light curtains at load
- 10 Second cycle time



I.P. MIG Weld System

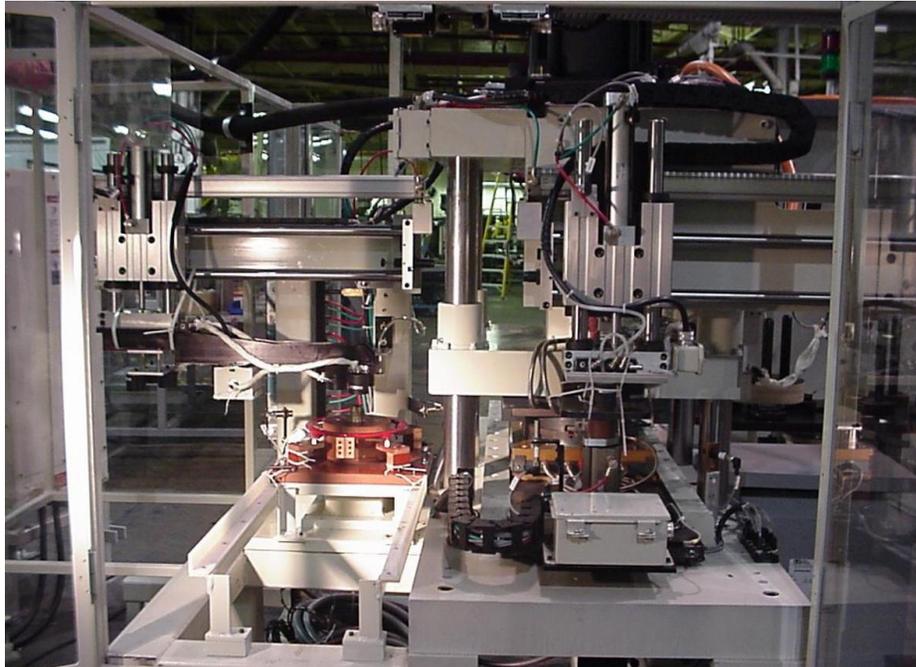


•Hard automation MIG weld cell used to apply Instrument Panel components. MIG weld torch pivots, slides and pivots to tack 2 points.

- ALLEN BRADLEY 5/04 controller
- ALLEN BRADLEY 600 panel view
- THOMSON linear components
- ALLAR XYZ shim packs at critical adjustment points
- PARKER cylinders
- MILLER weld equipment
- Tube / Plate constructed base w/ fork pockets
- FROMELT roll-up weld curtain



Pressure Plate Bonding Cell



•Induction heated bonding system used to apply friction material to pressure plates. The system is fed from an up-stream wash process and auto unloads to a down-stream burnish process. Liner material is automatically loaded using a 2-stop dial stack system. Pre-heat induction brings plate temperatures to 500 degrees. Bond die temperature runs up to 425 degrees. Both temperature are adjustable.

- ALLEN BRADLEY 5/04 controller
- ALLEN BRADLEY 1000 panel view
- THOMSON linear components
- CAMCO indexer
- PARKER cylinders
- PILLAR induction equipment
- PHD automation products
- WATLOW heat components
- Tube / Plate constructed base w/ fork pockets



Auto gage and Burnish

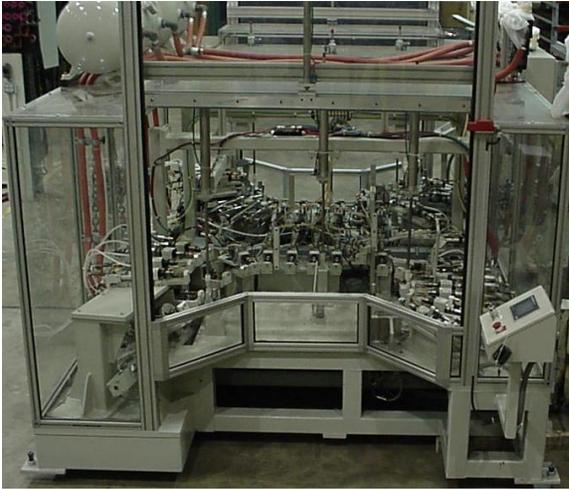


•Automatic machine that receives bonded plates, checks, thickness, burnishes, applies rust inhibitor, auto-air-gages and either rejects or accepts parts to an out-feed conveyor.

- ALLEN BRADLEY 5/04 controller
- ALLEN BRADLEY 1000 panel view
- THOMSON linear components
- Walking beam transfer
- PARKER cylinders
- PHD automation products
- Burnish head
- Work station lighting
- LVDT thickness checks
- Air gage station
- Air-knife rust inhibitor blow-off
- Light curtain
- LEXAN guarding
- Tube / Plate constructed base w/ fork pockets



Multi-Spindle Drill Machine

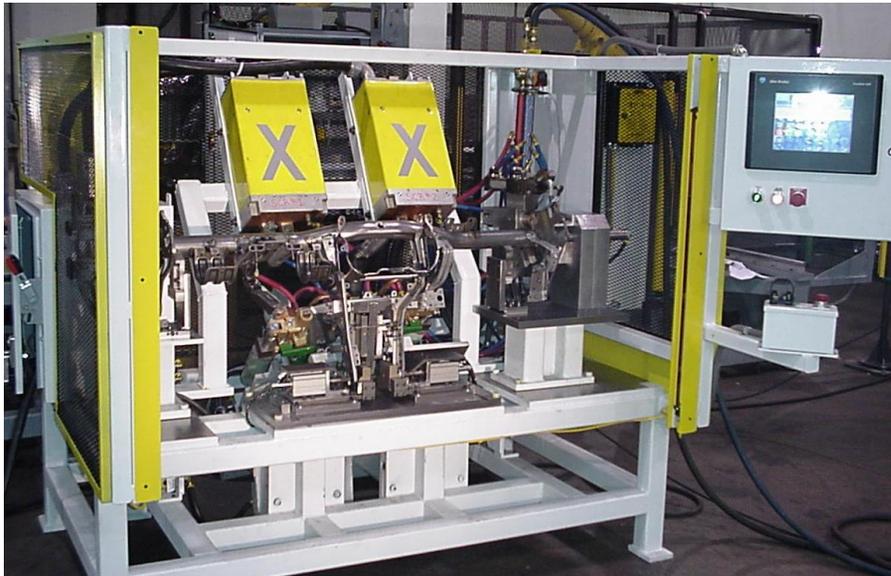


•Manually loaded and unloaded drill system used to drill holes in an SMC fender skin.

- ALLEN BRADLEY 5/04 controller
- ALLEN BRADLEY 600 panel view
- THOMSON linear components
- PARKER cylinders
- PHD automation products
- ARO pneumatic drill heads
- ALLAR XYZ shim packs for adjustment
- RH parts on one side, LH on the opposite
- Work station lighting
- Safety / dust door
- LEXAN guarding
- Tube / Plate constructed base w/ fork pockets



I.P. Resistance Weld Station

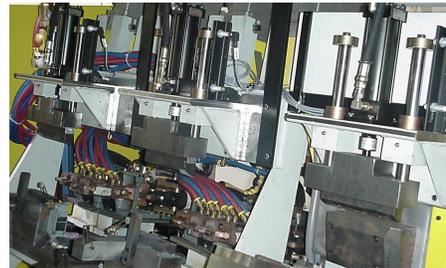
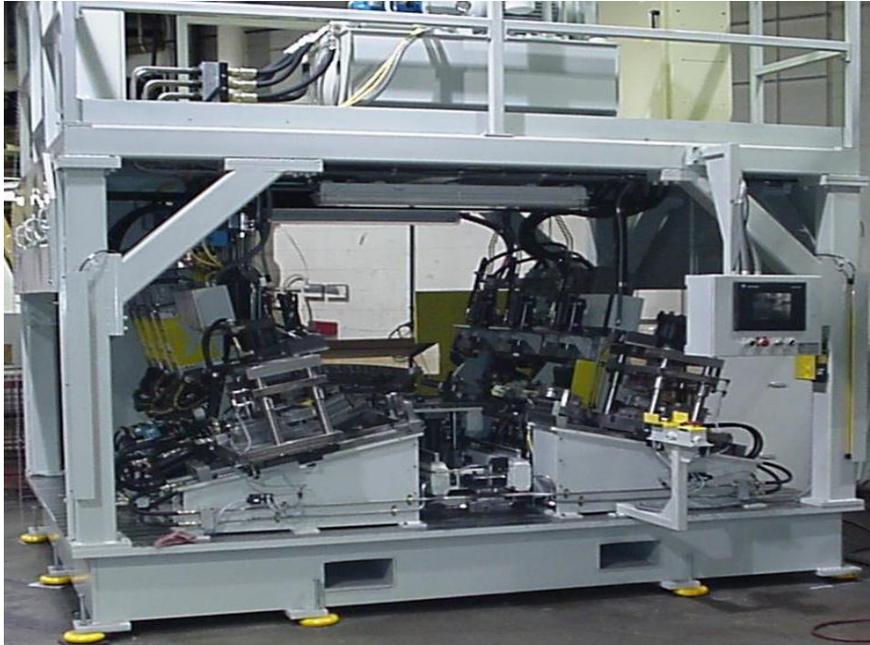


•Manually loaded and unloaded resistance weld station used to assemble center console radio area of an Instrument panel. 4 Pinch guns are shuttled and pivoted to hit a total of 12 spots.

- ALLEN BRADLEY 5/04 controller
- ALLEN BRADLEY 600 panel view
- Light curtain
- THOMSON linear components
- PARKER cylinders
- MEDAR weld control
- MILCO pinch guns
- ROMAN transformers
- ALLAR shim packs for XYZ adjustment
- LEXAN guarding
- Tube / Plate constructed base w/ fork pockets



Automatic Pierce, Slit, Form, Weld Bumper Cell



•Manually loaded and auto-unloaded system used to pierce, slit, form and weld the ends of a roll formed component.

- ALLEN BRADLEY 5/05 controller
- ALLEN BRADLEY 1000 panel view
- Light curtain
- THOMSON linear components
- PARKER cylinders
- MEDAR weld control
- MILCO pinch guns
- ROMAN transformers
- ALLAR shim packs for XYZ adjustment
- Walking beam transfer
- Mezzanine
- On-Board hydraulic system
- Plate constructed base w/ fork pockets



Truck Door Assembly Line



•Assembly line used to produce aluminum truck door frames

- ALLEN BRADLEY 5/05 controllers
- ALLEN BRADLEY 1000 panel views
- Light curtains
- THOMSON linear components
- PARKER cylinders
- FANUC robots
- ALLAR shim packs for XYZ adjustment
- Self Piercing rivet stations
- Drill Stations
- Weld stations
- Assembly stations
- Mastic application stations
- Plate constructed bases w/ fork pockets



Automatic Load / Weld Bumper Cell



•Automatically loaded and auto-unloaded system used to automatically load “W” brackets and pole protector and weld them to a roll formed part at the rate of one every 20 seconds.

- GE controller
- GE panel view
- Product supply in-feed conveyors
- THOMSON linear components
- PARKER cylinders
- MILLER weld equipment (12 torches)
- 2 Weld stations
- 1 Flip station
- Cool-down buffer
- 1 Oilier station
- Servo driven torches
- ALLAR shim packs for XYZ adjustment
- Walking beam transfer
- Mezzanine
- Plate constructed base w/ fork pockets



Riv-Nut Application Cell

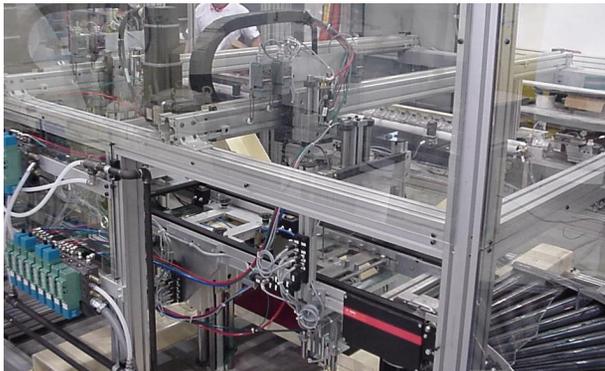


•Manually loaded and unloaded cell used to place 2 12mm Riv-nuts in a roll formed component section.

- GE controller
- GE panel view
- Light curtain
- Riv-nut supply baskets
- THOMSON linear components
- PARKER cylinders
- PHD automation components
- Custom Riv-Nut head
- Integrated hydraulic system
- ALLAR shim packs for XYZ adjustment
- Aluminum jig plate machine bed
- Aluminum extrusion guarding
- Rubber coated mesh in-fill on guard work
- Work station lighting
- Tube constructed base w/ fork pockets



Palletized Auto Steering Column Assembly



•Palletized power and free column housing assembly line. System performs part checks and automatically assembles components using bowl feeders and in-feed conveyors.

- ALLEN BRADLEY 5/05 controller
- ALLEN BRADLEY 1000 panel view
- BOSCH REXROTH Pallet platform
- Product supply in-feed conveyors
- THOMSON linear components
- PARKER cylinders
- VIBCON bowl feeders
- Check stations
- GEREFF washer
- MACRON servo driven transfers
- TECHNIFOR printing
- LEXAN in-fill on guarding
- Aluminum extrusion constructed base w/ fork pockets



Truck Hood Bonder



•Bonding system used to build hood assemblies. Class “A” panels are bonded to class “B” structural components, hinges and mounting rail assemblies.

- ALLEN BRADLEY 5/05 controller
- ALLEN BRADLEY 1000 panel view
- Custom built press
- Custom built CNC cut die package
- XYZ adjustment of all components
- CHROMOLOX heat cartridges with independent zone control
- Light curtains
- THOMSON linear components
- PARKER cylinders
- Integrated hydraulics system
- Steel plate constructed base w/ fork pockets

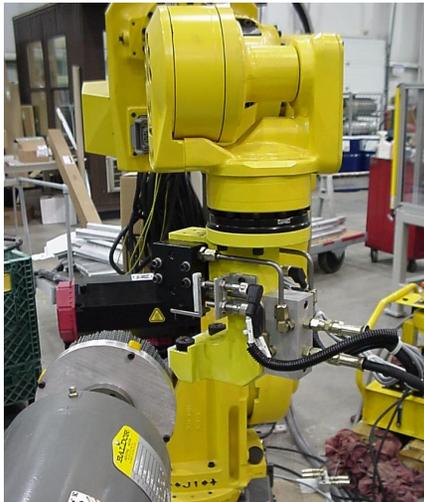


Aluminum Extrusion De-Burr System



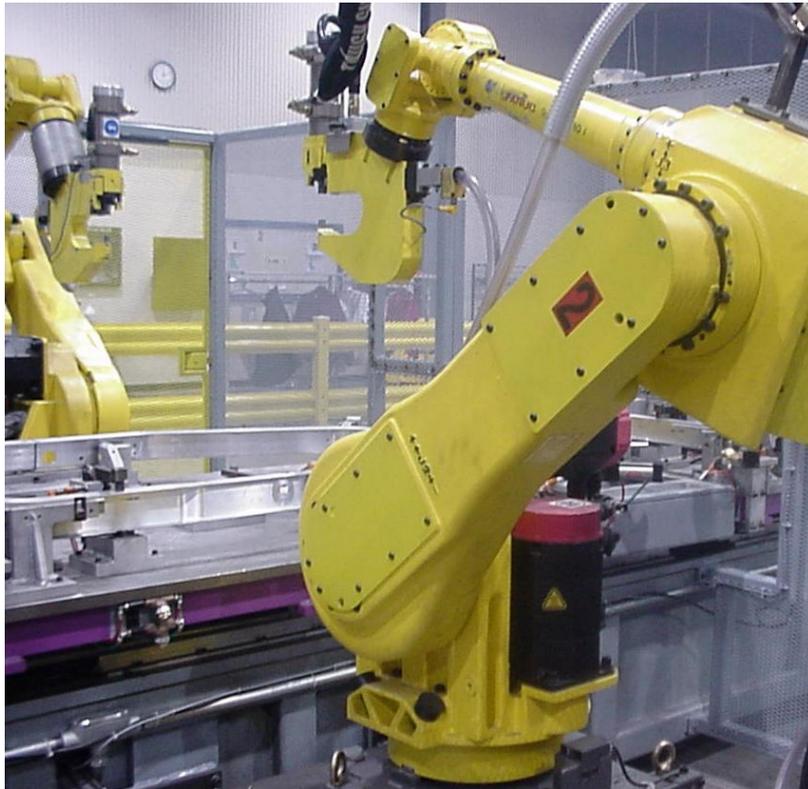
•De-Burr system used to clean the ends of CNC cut aluminum frame rails. Finished parts are palletized using an XYZ gantry loader.

- ALLEN BRADLEY 5/05 controller
- ALLEN BRADLEY 600 panel view
- Robotic de-burr with force tool head
- XYZ gantry stacker / palletizing system
- Light curtains
- THOMSON linear components
- PARKER cylinders
- Steel Tube constructed base w/ fork pockets





Self-Piercing Rivet System

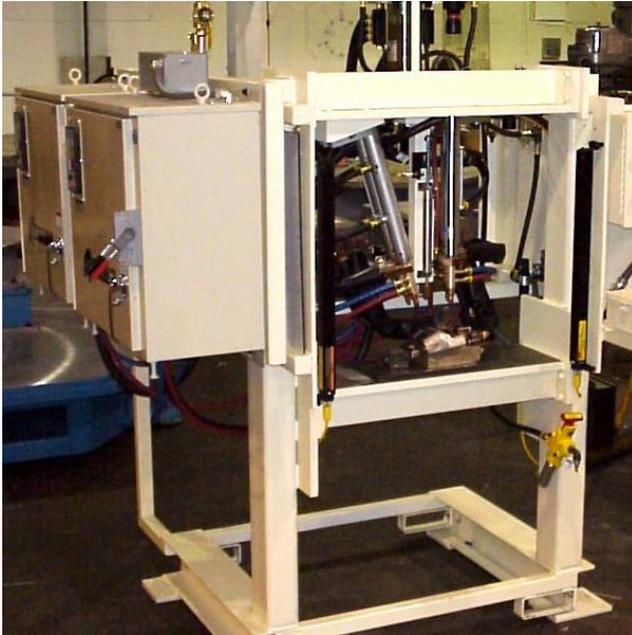


•Self piercing rivet system used to join aluminum extrusion to door channel.

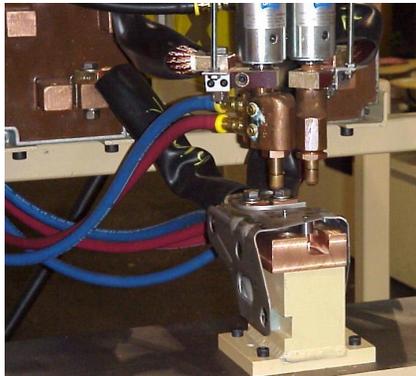
- ALLEN BRADLEY 5/05 controller
- ALLEN BRADLEY 600 panel view
- Robotic C-frame blow fed rivet feeder
- 2 Bowl feeder with blow feed delivery
- 2 FANUC 710
- Fixture on slide-in shuttle
- Light curtain
- THOMSON linear components
- PARKER cylinders
- Fence style perimeter guarding
- Steel Tube constructed base w/ fork pockets



H-Frame 3-Spot Resistance Welder



- Manually loaded and unloaded H-Frame spot welder used to assemble 2 stampings
- ALLEN BRADLEY 5/04 controller
- ALLEN BRADLEY 600 panel view
- Light curtain
- MEDAR weld control
- SAVAIR guns
- ROMAN transformers
- ALLAR shim packs for XYZ adjustment





Product Base Assembly Cell

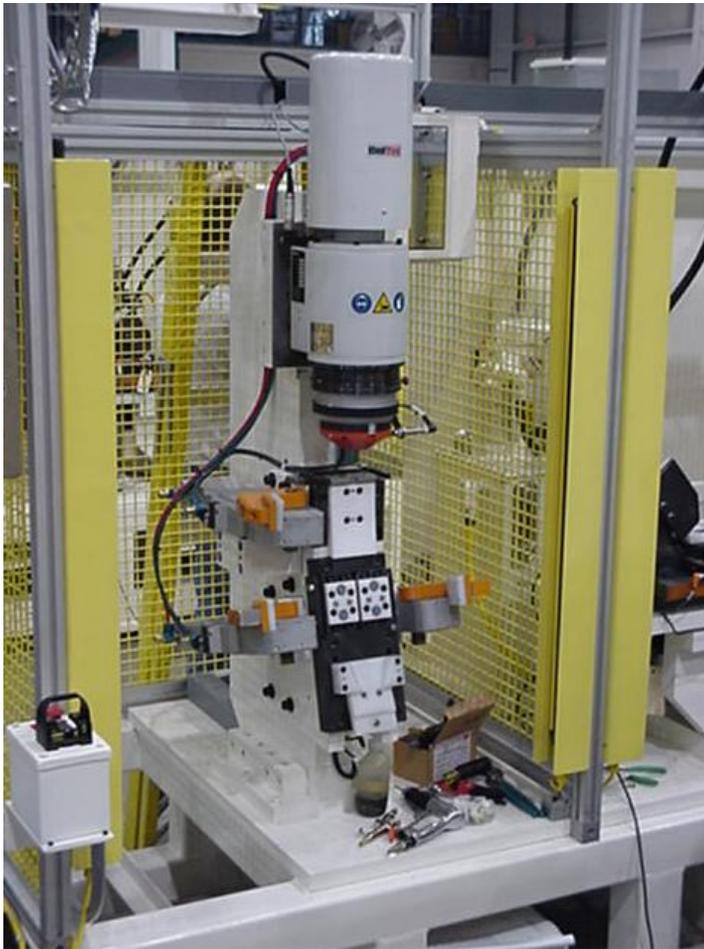


•Manually loaded and unloaded assembly cell used to check for loaded components, run function tests and drive fasteners. Fasteners are monitored for torque, angle, and revolutions.

- ALLEN BRADLEY 1500 controller
- ALLEN BRADLEY 300 panel view
- Anti-Tie-Down Start Buttons
- Function test mechanism
- Smart dive screw system
- Part bins
- Part presence sensing
- CNC cut nest blocks
- Aluminum extrusion guarding frame
- Rubber coated wire guard in-fill
- Tubular steel frame with fork pockets
- Aluminum jig plate fixture base
- Work lighting
- Fan
- Vacuum



Orbit Form Station



•Manually loaded and unloaded assembly cell used to Orbit Form leaf spring components to a product base casting.

- ALLEN BRADLEY 1500 controller
- ALLEN BRADLEY 300 panel view
- Light curtain
- Work station lighting
- Orbit Form head
- Part presence sensing
- CNC cut nest blocks
- Aluminum extrusion guarding frame
- Rubber coated wire guard in-fill
- Tubular steel frame with fork pockets
- Fan



SMC Pierce System



•Manually loaded and unloaded pierce cell used to pierce holes in an SMC panel.

- ALLEN BRADLEY 1500 controller
- ALLEN BRADLEY 300 panel view
- Anti-Tie-Down Start Buttons
- Light curtain
- Part presence sensing
- CNC cut nest blocks
- Aluminum extrusion guard frame (not shown)
- Rubber coated wire guard in-fill (not shown)
- Plate steel frame with fork pockets
- Air / Oil system
- PARKER cylinders
- DE-STA-CO clamping



Manual Weld Fixture



•Manually loaded and unloaded powered rotisserie weld fixture used to assemble and weld front bumpers.

- ALLEN BRADLEY 1500 controller
- ALLEN BRADLEY 300 panel view
- Light curtain
- Part presence sensing
- CNC cut nest blocks
- Tube steel frame with fork pockets
- Air / Oil system
- PARKER cylinders
- DE-STA-CO clamping



De-Flash / Assembly Fixture



•Rotary de-Flash fixture used to hold a SMC part while an operator cleans up the perimeter and assembles.

- ALLEN BRADLEY 1500 controller
- ALLEN BRADLEY 300 panel view
- Anti-Tie-Down Start Buttons
- Part presence sensing
- CNC cut nest blocks
- Tube steel frame with fork pockets
- PIAB vacuum components
- Tool balancer
- Customer supplied hand tools
- DE-STA-CO clamping



Bracket to SMC Bonder



- **Bonding system used to apply and bond a stamping assembly to a SMC substrate.**
- ALLEN BRADLEY 1500 controller
- Light curtain
- Part presence sensing
- CNC cut nest blocks
- Tube steel frame with fork pockets
- DE-STA-CO clamping
- PHD automation components
- CHROMOLOX heat cartridges

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Bonding Shuttle Press W/ Die Cartridge



•Universal bonding shuttle press and interchangeable die cartridge.

•ALLEN BRADLEY 1500 controller

•ALLEN BRADLEY 600 panel view

•Light curtain and safety mats (not shown)

•Perimeter fence guarding (not shown)

•Part presence sensing

•CNC cut die cartridge

•Plate / Tube steel frame with fork pockets

•Steam heated nest





Aluminum Bumper Weld Fixture

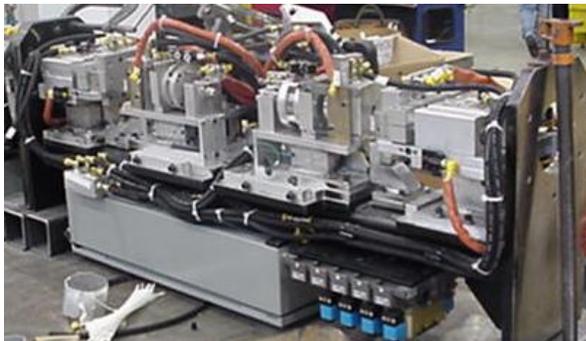


•Weld fixture for an aluminum component beam.
Fixture is designed to run on a GENESIS 3M weld platform.

- ALLEN BRADLEY controls
- Remote I.O. panel
- Light curtains
- Quick disconnect on air
- Quick disconnect for I.O. panel
- Part presence sensing
- ALLAR shim packs for XYZ adjustment
- Fire resistant plumbing
- Fire resistant cable covers
- CNC cut nest blocks
- PARKER cylinders
- DE-STA-CO clamping



Aluminum Crash Can Weld Fixture



•Weld fixture for aluminum can assemblies. Fixture is designed to run on a GENESIS 3M3 weld platform.

•ALLEN BRADLEY controls

•Remote I.O. panel

•Light curtains

•Quick disconnect on air

•Quick disconnect for I.O. panel

•Part presence sensing

•ALLAR shim packs for XYZ adjustment

•Fire resistant plumbing

•Fire resistant cable covers

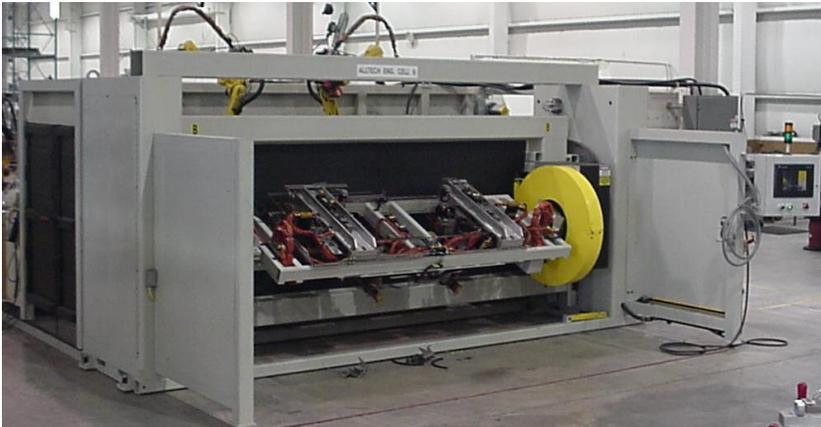
•CNC cut nest blocks

•PARKER cylinders

•DE-STA-CO clamping

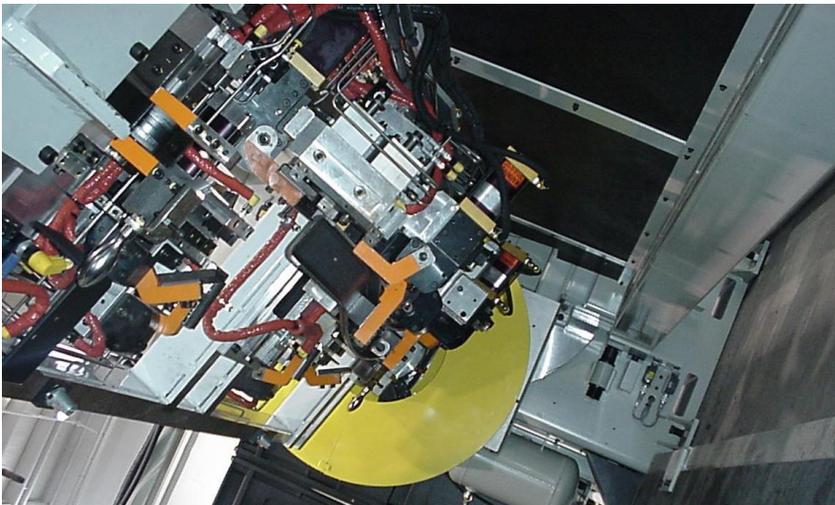


Hitch Assembly Weld Fixture



•Weld fixture for hitch assemblies. Fixture is designed to run on a GENESIS Versa 4M weld platform.

- ALLEN BRADLEY controls
- Light curtains
- Remote I.O. panel
- Quick disconnect on air
- Quick disconnect for I.O. panel
- Part presence sensing
- ALLAR shim packs for XYZ adjustment
- Fire resistant plumbing
- Hard plumbed stationary lines
- Fire resistant cable covers
- CNC cut nest blocks
- PARKER cylinders
- DE-STA-CO clamping





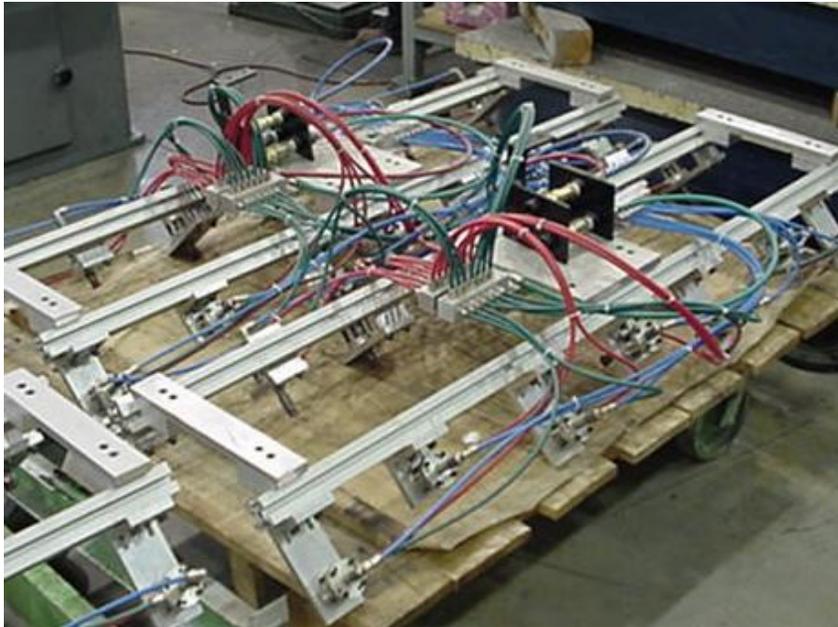
Prototype Windshield Weld Fixture



- **Prototype fixture constructed to build prototype windshield frames. Used to prove process on a GENESIS Versa 4M**
- Aluminum tube construction
- Hardened pins and rest pads
- Grind spacers as required for XYZ adjustment
- ALLAR shim packs for XYZ adjustment
- Manual DE-STA-CO clamps
- Mounting interface to run on GENESIS Versa 4M



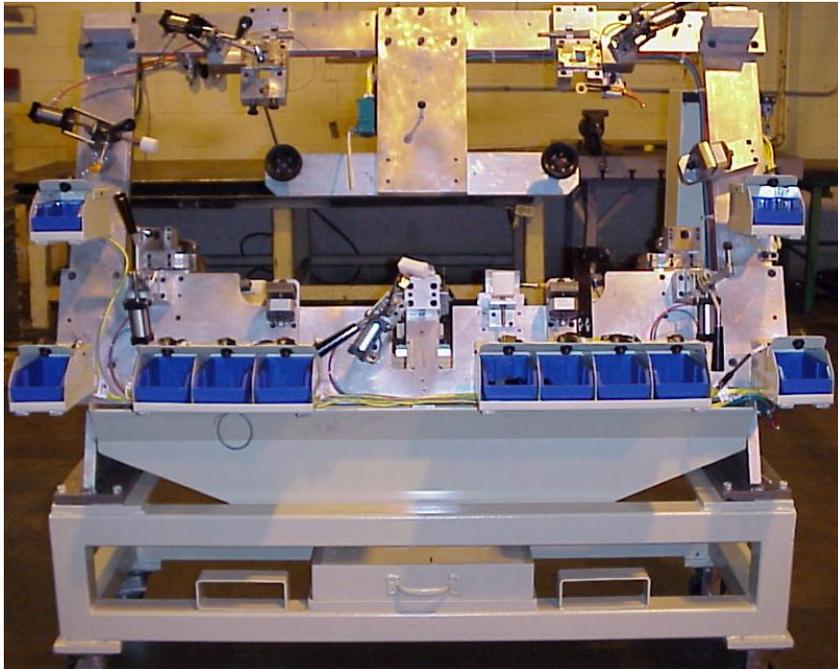
Robot End of Arm Tooling



- End of arm tooling used to transfer SMC body panels
- Aluminum extrusion construction
- Location pins as required
- Vacuum cup system with a common manifold
- Robot interface plate



Explorer Rear Glass Assembly Fixture



- **Assembly fixture used to assemble: hinges, wiper motors, lift assist mounts, wire channels and handle assembly.**
- Steel tube frame with fork pockets
- Locating system to hold glass by datum scheme
- Vacuum cup system with a common manifold
- DE-STA-CO clamping
- Part bins
- Stud running guides for lift assist parts
- Customer supplied hand tools



This list represents a small example of additional capabilities:



Robotic Mig Weld Cell
Robotic spot-weld cells
Drawn arc applications
Resistance weld H-frame
TIG welders
Mig welders
Manual weld fixtures
Plasma cut cells
Laser cell integration
Water Jet cell integration
Projection nut welders
Projection stud welders
Hard automation weld cells
GENESIS Ferris wheel systems
GENESIS dial systems
Bowl fed assembly cells
Power and free palletized lines
Dial assembly tables
Flexible assembly systems
Heat staking
Sonic welding
Hot plate welding
Test stations
Leak testers
Electro chemical de-burr
Ball sizing systems

Drill centers
Adhesive application / Robotic
Adhesive application / special
De-burr equipment
Steel bonding
Auto heat treat
Special machining dials
XYZ custom routers
XYZ Pick and place gantry
Custom saw applications
Auto stacking systems
Foam in-place molding
Fabric wrapping technology
Veneer applications
De-gate equipment
De-flash equipment
Material handling
Fast-Riv systems
Break stem rivet systems
Automated nut runners
Auto stud running
Balancers
Shot blast Integration
Grit blast integration
Parts washing systems
Packaging equipment
Nut feeder integration

Pal nut assembly systems
Ergonomic assembly tables
Walking beam transfers
Roll form secondary process
Hydro piercing
SMC hole punch cells
Air impingement bonding
Hot oil bonding
Heat cartridge bonding
Fatigue test cells
Air gage automation
Silicon molds
Prototype welding
CNC prototypes
Robot welded prototypes
Specialized bending equipment
Flexible assembly platforms
Automatic Burnishing
CNC integrated machining lines
Automated inspection
Vision system integration
Multi-fastener applicators
Loaders / un-loaders
End of arm tooling
SMC Bonders
Automatic Router systems
Walking beam transfer systems

