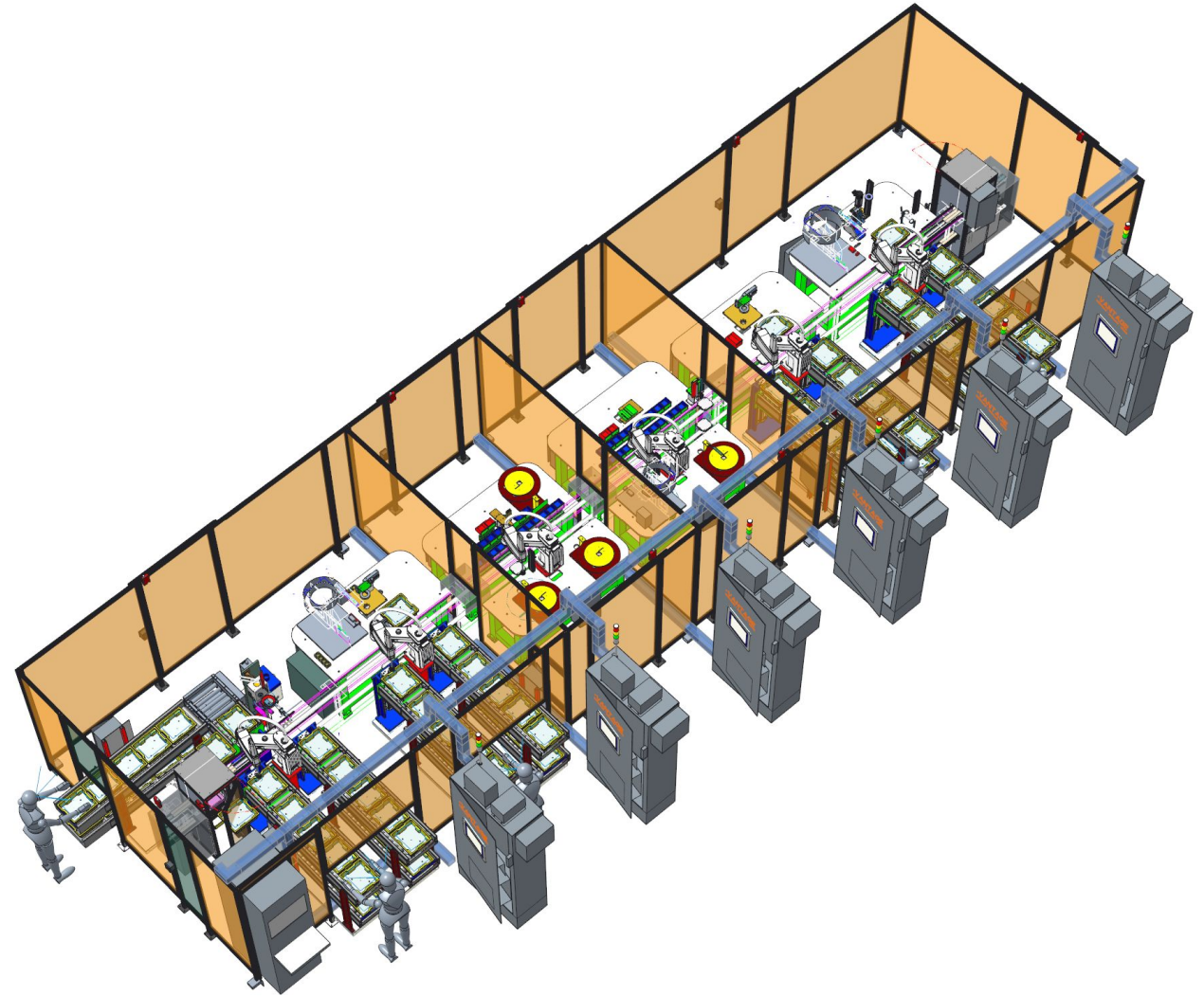


+Vantage Case Study: Assembly Lines

Diesel Fuel Injector Assembly Line



Assembly Line Case Study



- Parts:

- Diesel Fuel Injector

- Customer Problem:

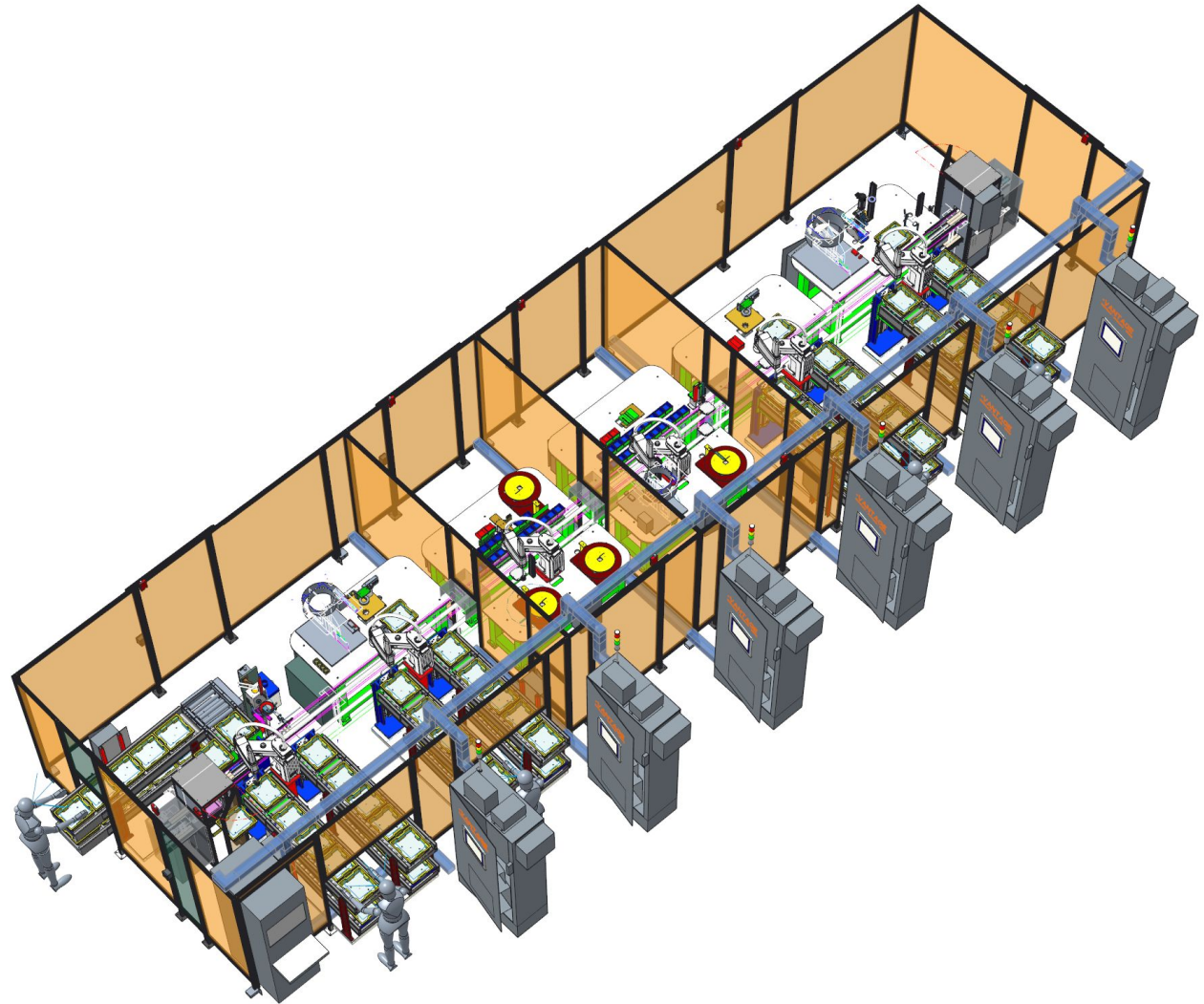
- Super tight tolerances as low as 2 micron requiring 100% inspection after each assembly process
- The manufactured components required a method of data acquisition & part traceability
- The manufacturing process was too labor intensive for material handling
- The manufactured components required measurement inspections for validation of assembly.

- The project:

- This system consists of six (6) main cells and one conveyor system transferring customer assembly pallets from cell to cell. Each cell utilizes a robot for automatic part handling and handles a different aspect of the parts assembly. Assembly parts are either introduced through cell from bowl feeder or pallets on incoming gravity conveyors. To address traceability the parts barcode is read at the start and at the end of automatic process. Then finally the system was connected to the customers factory information & integrated to provide seamless data to the process.

- Process:

1. (1) Flexlink Conveyor
2. (9) Gravity Roller Conveyors
3. (3) Bowl Feeders
4. (6) Robotic Integration & EOAT
5. (4) Contact Probe Inspections
6. (4) Vision Inspections
7. (1) Laser Marker
8. (1) Cell full integrated, debugged, and assembled

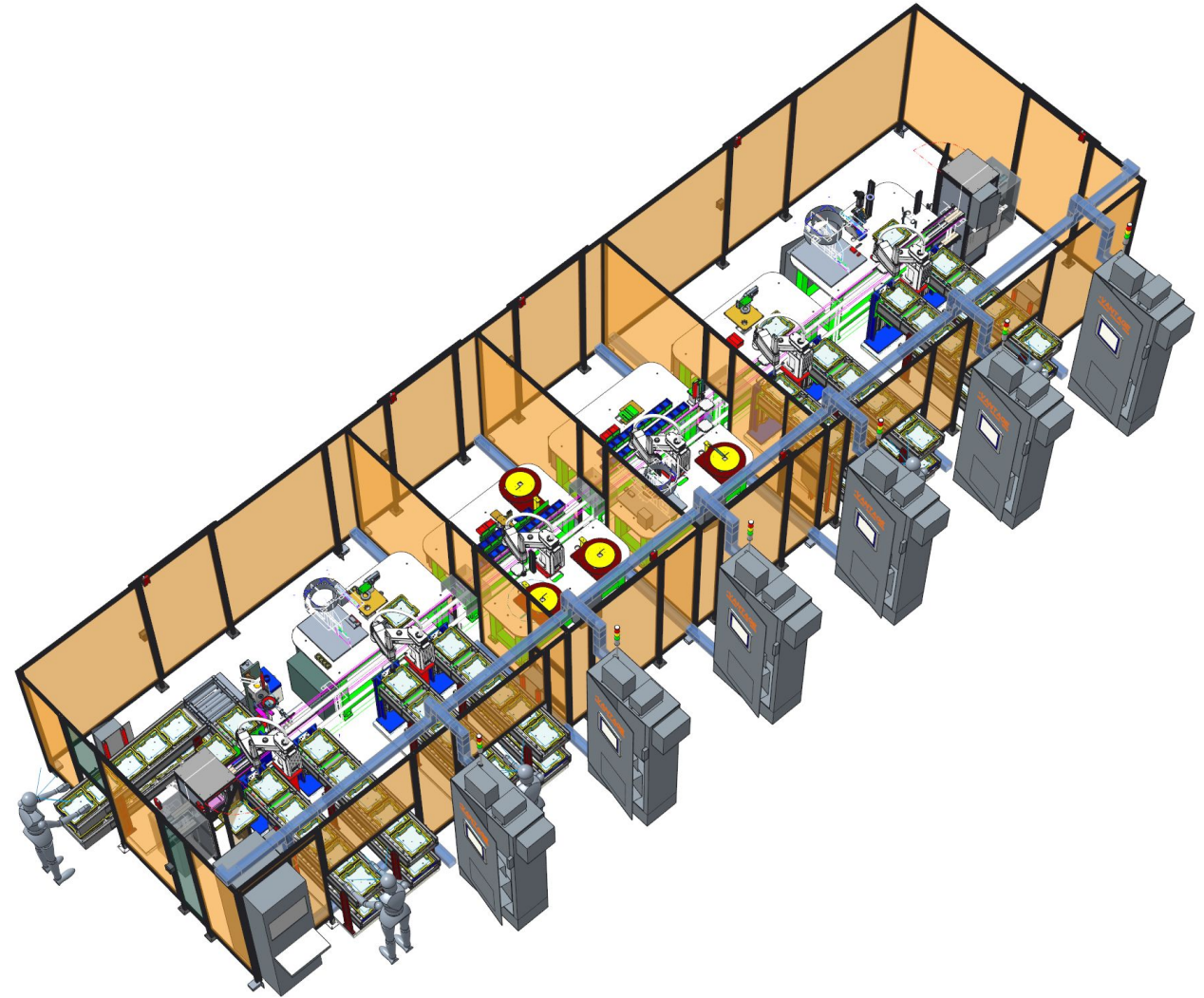


Assembly Line Case Study



- Components:

- AMC Flexlink Conveyor
- Gravity Roller Conveyors
- Powered Zone Conveyors
- Adept SCARA Robotics
- Custom EOATs with Pneumatic Gripper
- Custom EOATs with suction cup
- Cognex Vision Inspection
- Solartron LVDT Probes
- Telesis Fiber Laser Marker
- Custom Bowl Feeders
- Safety interlocks
- RTGC32 Controls Structure

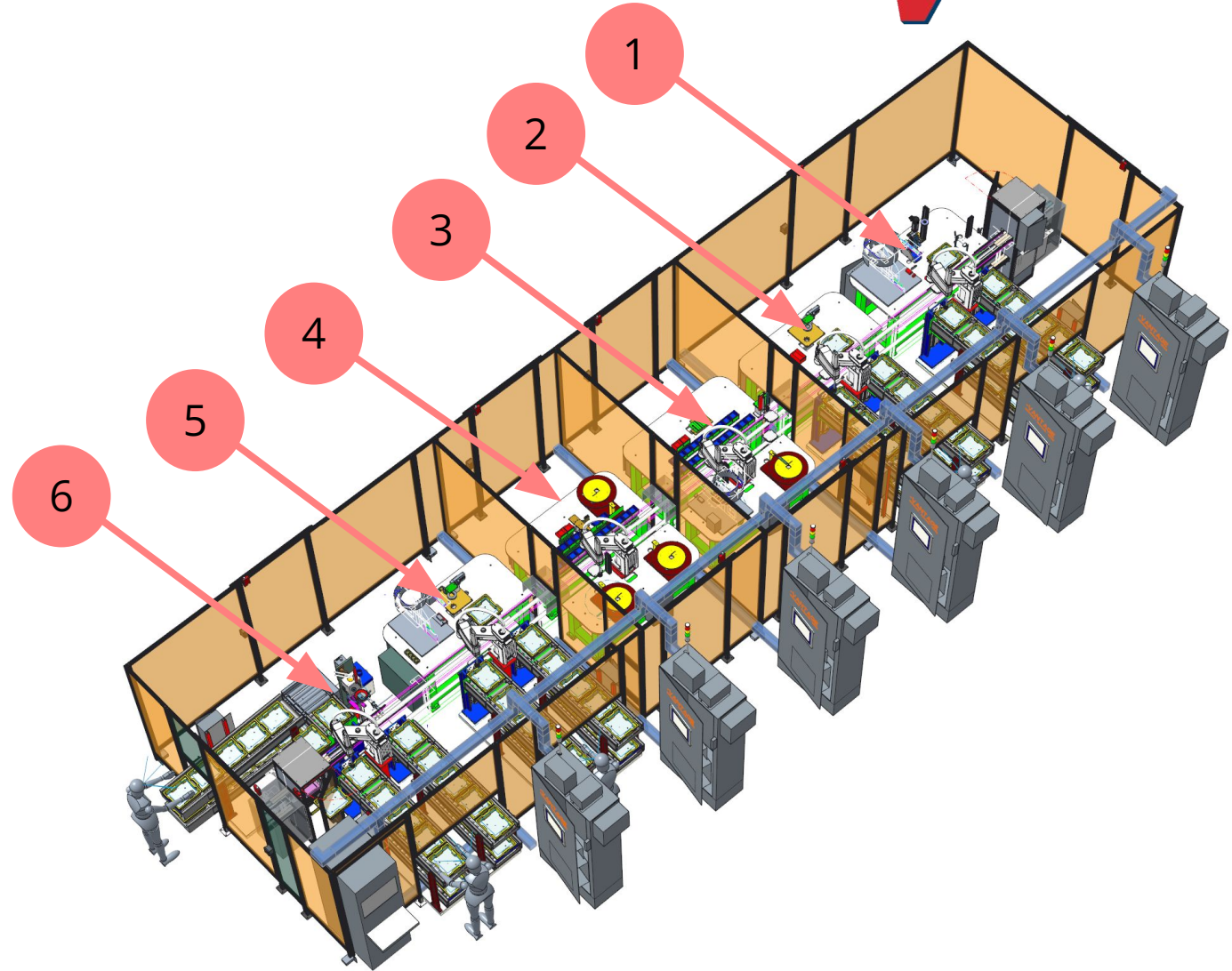


Assembly Line Case Study

+VANTAGE

- Cells:

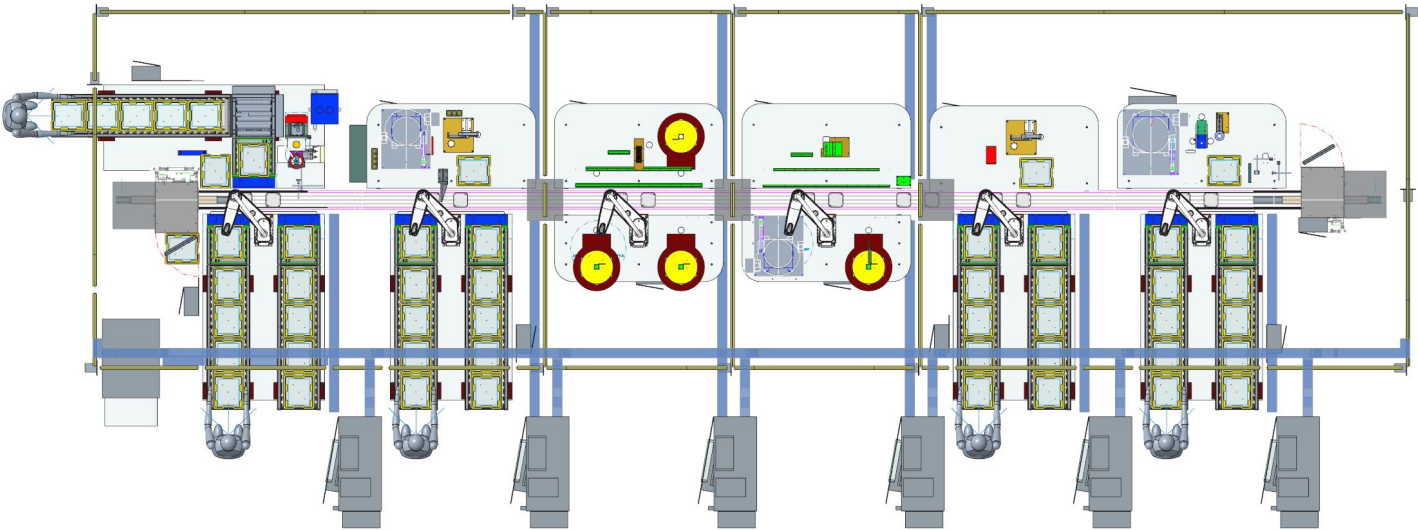
- Cell 1
 - Incoming Vision Inspection
 - Spring Vision Inspection
 - Spring Contact Probe Gage
 - Spring Assembly
- Cell 2
 - Body Vision Inspection
 - Body Assembly
- Cell 3
 - Body Contact Probe Gage
 - VOP Contact Probe Gage
 - VOP Assembly
- Cell 4
 - Pin Contact Probe Gage
- Cell 5
 - Pin Assembly
 - Orientation Vision Inspection
- Cell 6
 - Laser Marking
 - Part Packout



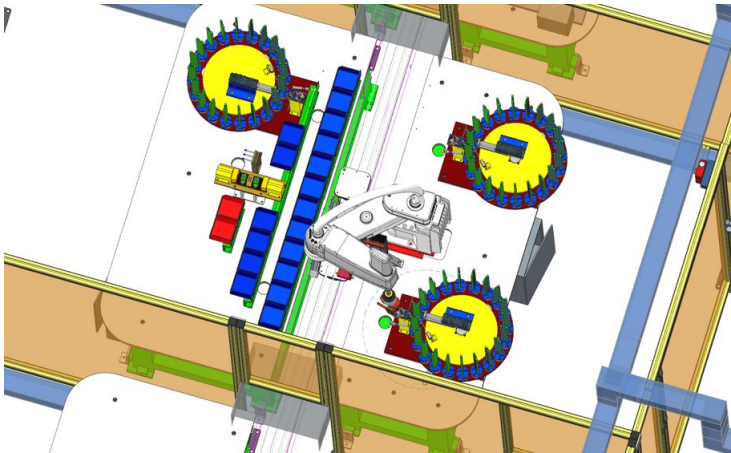
4

+V

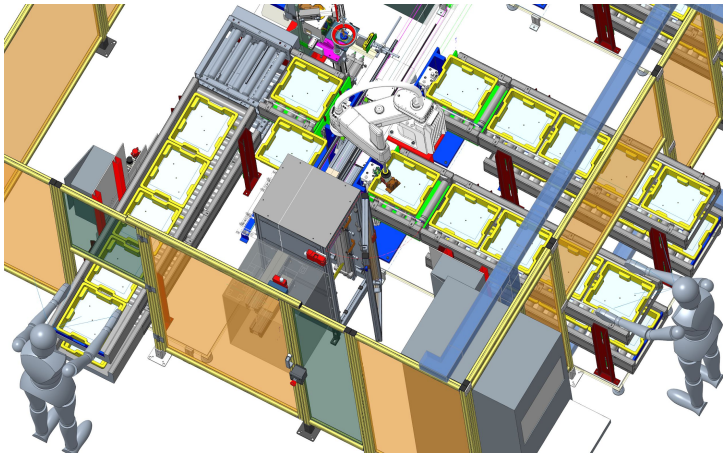
Automation Made Seamless



Layout

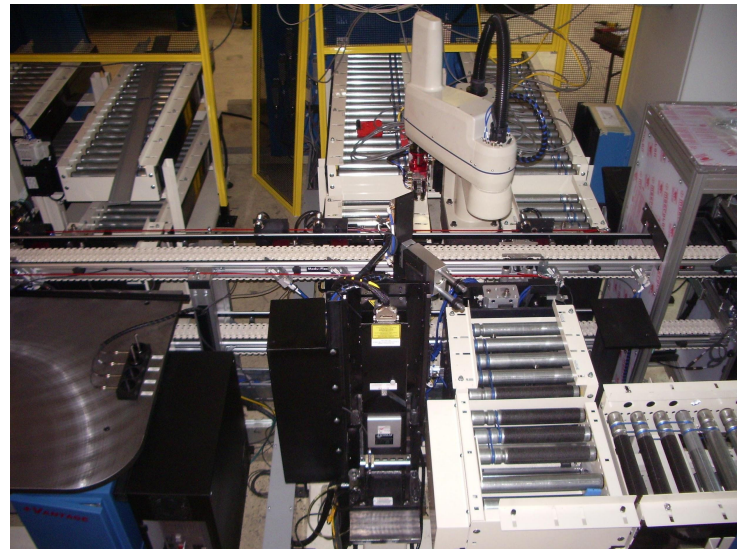
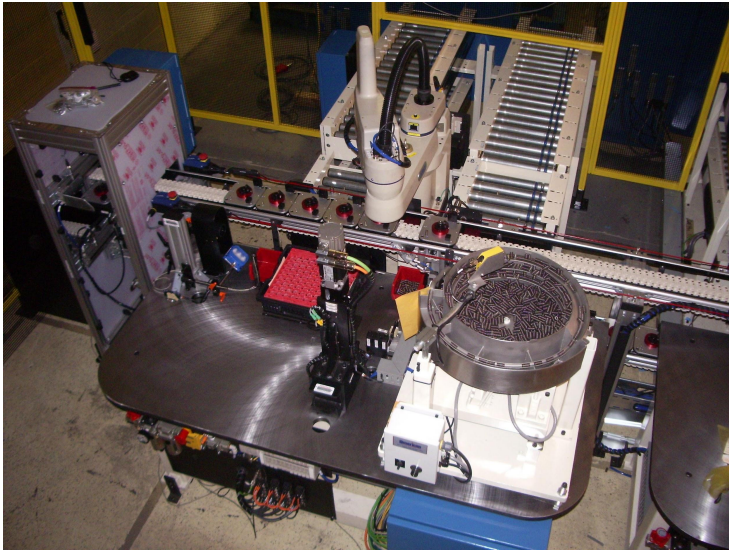


SCARA Robotics Material Handling

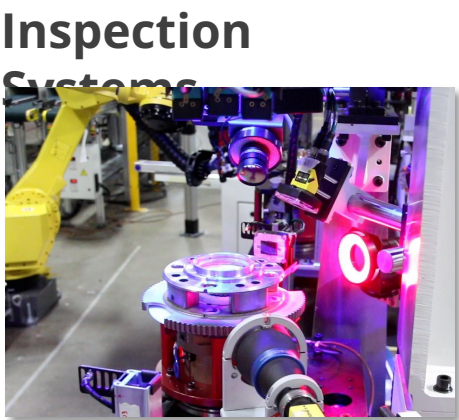


Automated Assembly, Inspection and Laser Marking System

Assembly Line Case Study



Core Product Overview



Vision, Laser, Pneumatic, Dynamic, Torque, as well as Classification and Identification



Fully automatic systems to streamline your manufacturing process and increase production



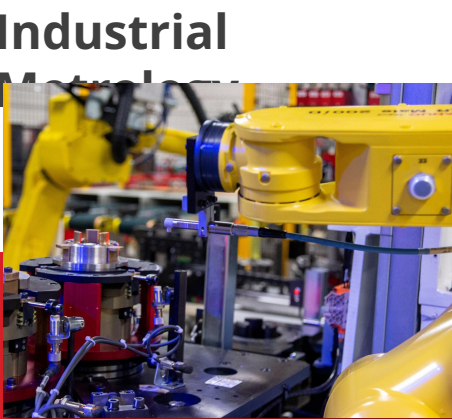
Custom design or upgrade/retrofit existing lines with the latest sensors and manufacturing technology



Let the +Vantage team's decades of experience solve your manufacturing challenges



Manual and semi-automatic multi-station assembly systems for pressing, torquing, & riveting



Contact and non-contact gages for precision measurements. In-line and audit room.

Automation Made Seamless

Global Customer Reach



1,500

MACHINES BUILT

250

YEARS COMBINED EXPERIENCE

12

SYSTEMS INSTALLED IN +12 DIFFERENT COUNTRIES



USA (HQ)

12651 Newburgh Rd
Livonia, MI 48150
tel: [+1 734 432 5055](tel:+17344325055)

Canada

London, ON Canada
tel: [+1 226 234 1515](tel:+12262341515)

Mexico

Micro Parque Finsa Eje 2 #470-2
Ramos Arizpe, Coah. 25210
tel: [+52 1 844 270 9389](tel:+5218442709389)

China

14/F Suncome Cimic Tower
800 Shangcheng Rd
Pudong New District Shanghai. 200120
tel: [+86 137 7103 2628](tel:+8613771032628)

Company Overview



Company Size

- 70 Employees Globally
- 100,000 sq. ft in Livonia
 - Additional office space globally

Certifications

- ISO 9001:2019
- Coherix System Integrator
- Fanuc Authorized Integrator
- Q-DAS ASCII Certification
- Schunk Official Partner
- Solartron Orbit 3 Integrator



+VANTAGE



Automation Made Seamless

Proud Partners of:



Robotics



Vision Systems



Marking Systems



PLC

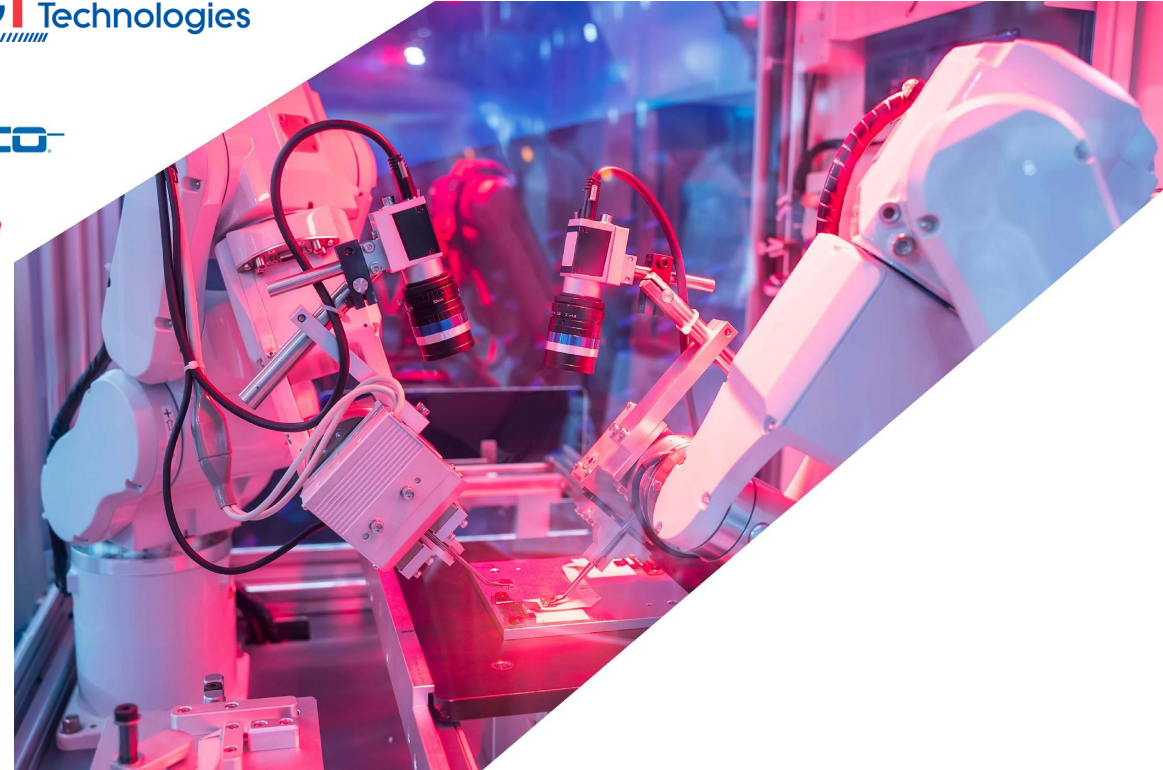


Torquing/Pressing



Our Featured Customers

+VANTAGE



On-Site Service & Support



100% Dedication to Customer Service

Global Support On-Site Representatives

Quick Response Unit and Down Time Recovery

Remote Log In Service in a Moments Notice

24/7 Service Support

On-site Contracts Available

Highly Trained Staff of Engineers & Technicians



USA

12651 Newburgh Rd
Livonia, MI 48150
tel: +1 734 432 5055

Automated Inspection

Mexico

Micro Parque Finsa Eje 2 #470-2
Ramos Arizpe, Coah. 25210
tel: +52 1 844 270 9389

Quality Assurance

Canada

London, ON Canada
tel: +1 226 234 1515

Zero Defects

Thank You for Reading!

China

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+VANTAGE
Metrology & Assembly Solutions

14

+V

Automation Made Seamless