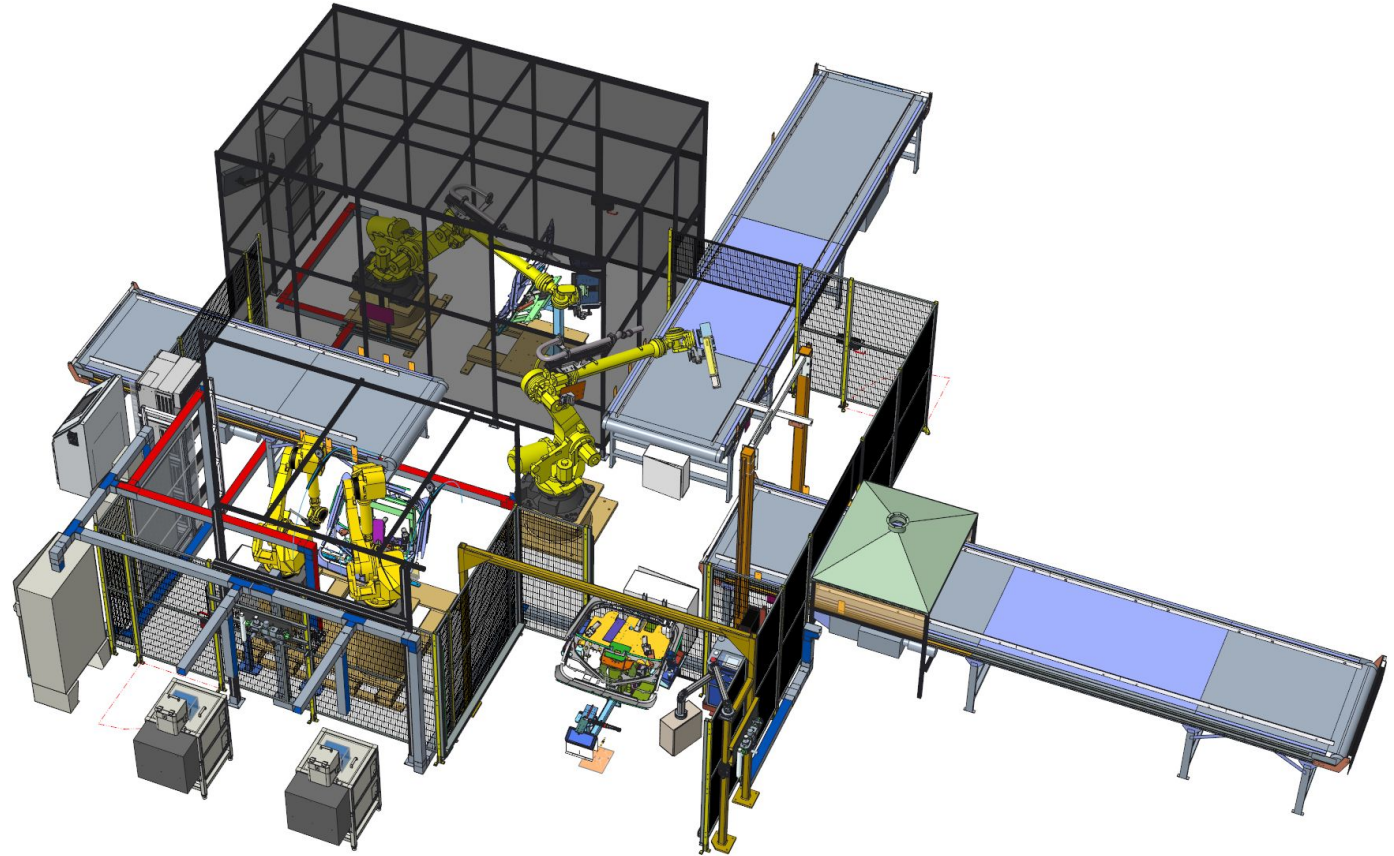


+Vantage Case Study: Assembly Lines

Lift Gate Assembly & Visual Inspection



Assembly Line Case Study



- Parts:

- Lift Gate

- Customer Problem:

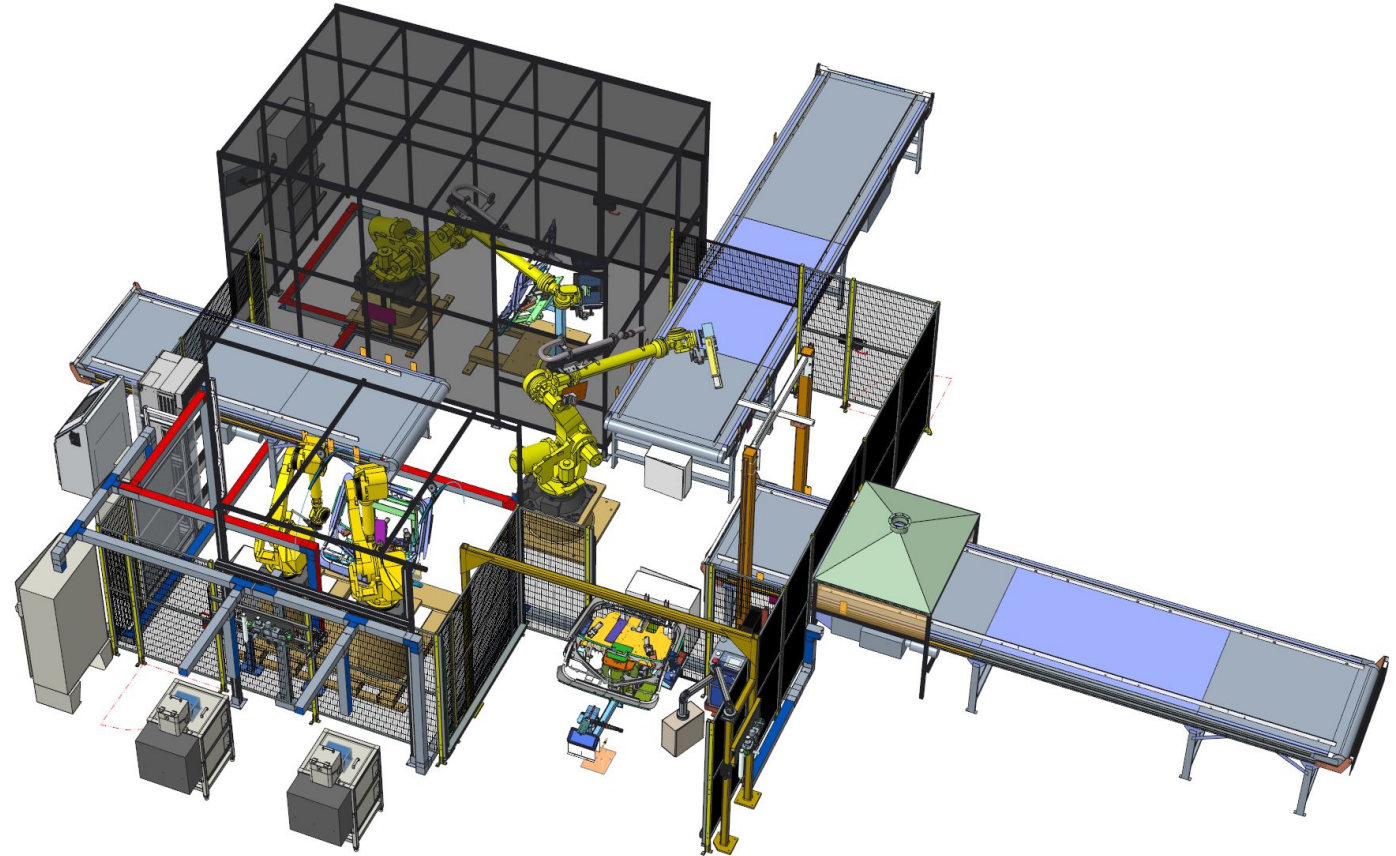
- Numerous Vision Inspection points required and short cycle time
- Semi Manual Assembly process required within Automated Part handling process
- The assembly process was too labor intensive for material handling

- The project:

- This is an automatic torque, riv-nut, and inspection system with an inline manual process seamlessly integrated. Parts arrive to cell via powered belt conveyor. Robotics maintain part handling within cell. Between Manual and Automatic stations various torque and assembly process occur. Part is then transported to a vision inspection system to validate assembly and class A surface conditions. Parts are sorted for good and reject before leaving the cell.

- Process:

1. Powered Belt Conveyers
2. Robotic Part Handling
3. Automatic Torque Drivers
4. Vision Inspection
5. Cell full integrated, debugged, and assembled

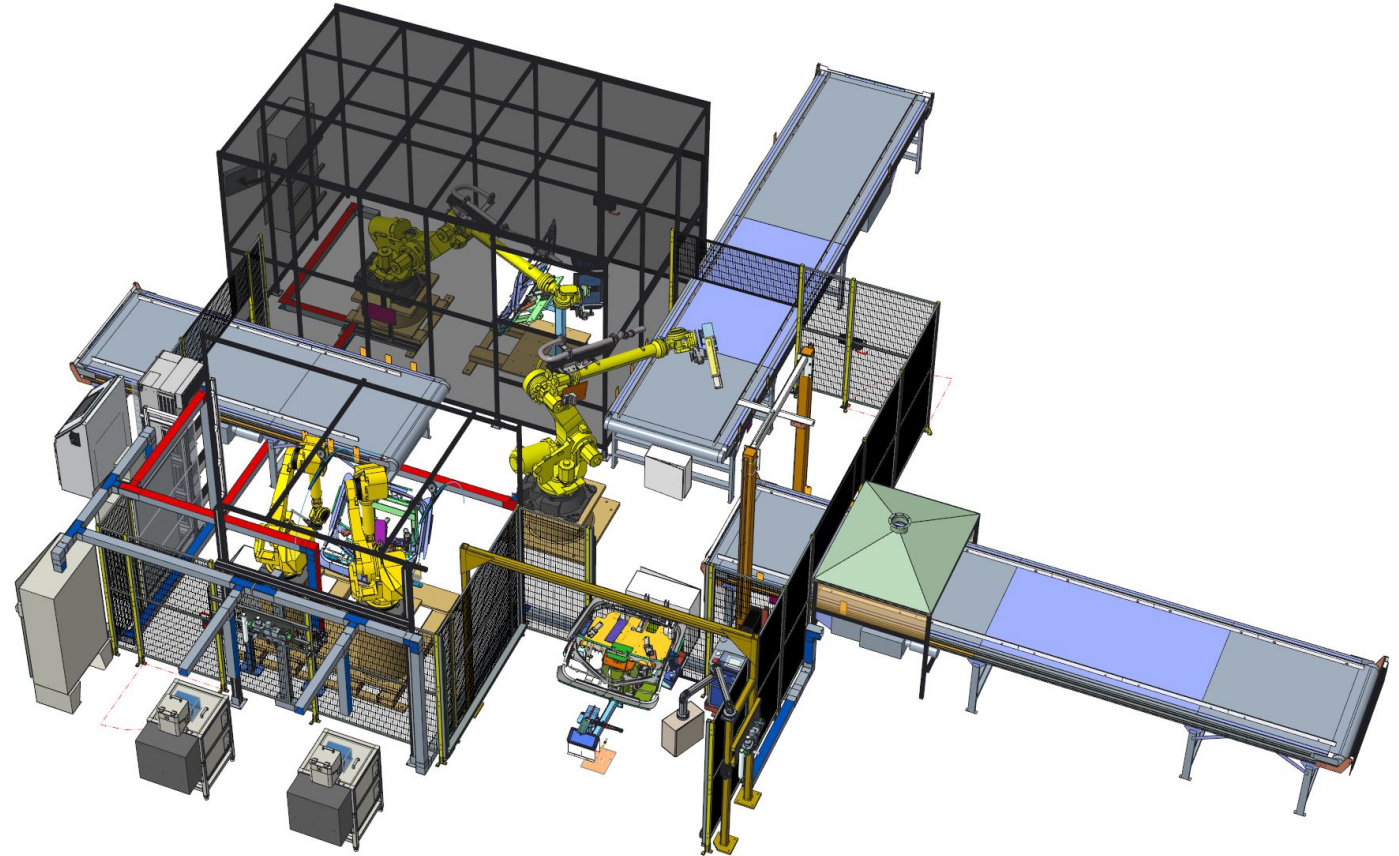


Assembly Line Case Study



- Components:

- Hytrol Powered Belt Conveyor
- Fanuc Robotics
- Custom EOATs
- Schunk Pneumatic Grippers
- Bollhoff Torque Drivers
- Cognex Vision Inspection
- Safety interlocks
- Allen Bradley Controls Structure

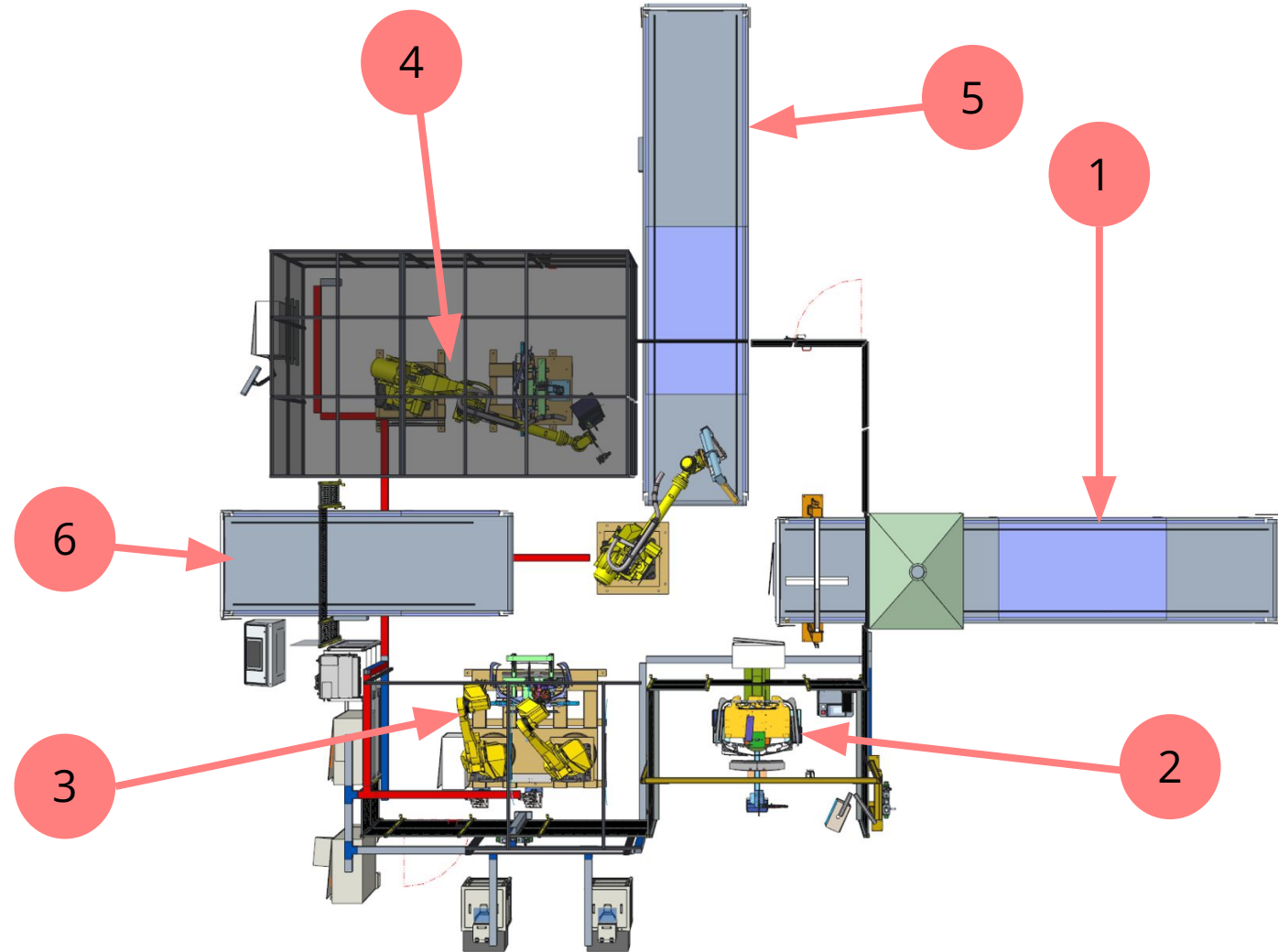


Assembly Line Case Study

+VANTAGE

• Overview:

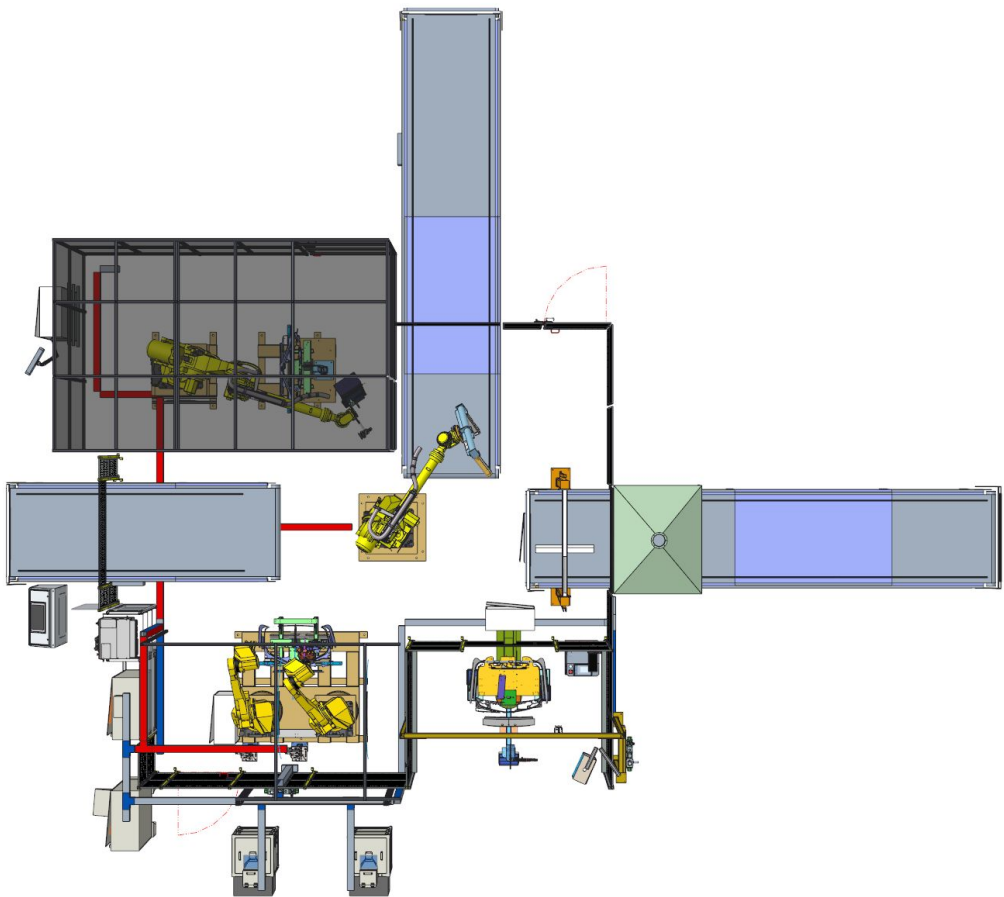
1. Incoming Station
 - Powered Belt Conveyor
 - Part Type Verification
2. Semi Manual Torque Station
 - Assembly components
 - Ball Studs
 - Threaded Plates
 - Rivnuts
3. Automatic Torque Station
 - Robot Driven
 - Assembly Components
 - Rivnuts
4. Automatic Vision Inspection Station
 - Robot Driven
 - Inspection Types
 - Surface Prosperity Defect
 - Surface Polish Defect
 - Surface Crack Defect
 - Surface Blister Defect
5. Reject Station
 - Powered Belt Conveyor
6. Outgoing Station
 - Powered Belt Conveyor



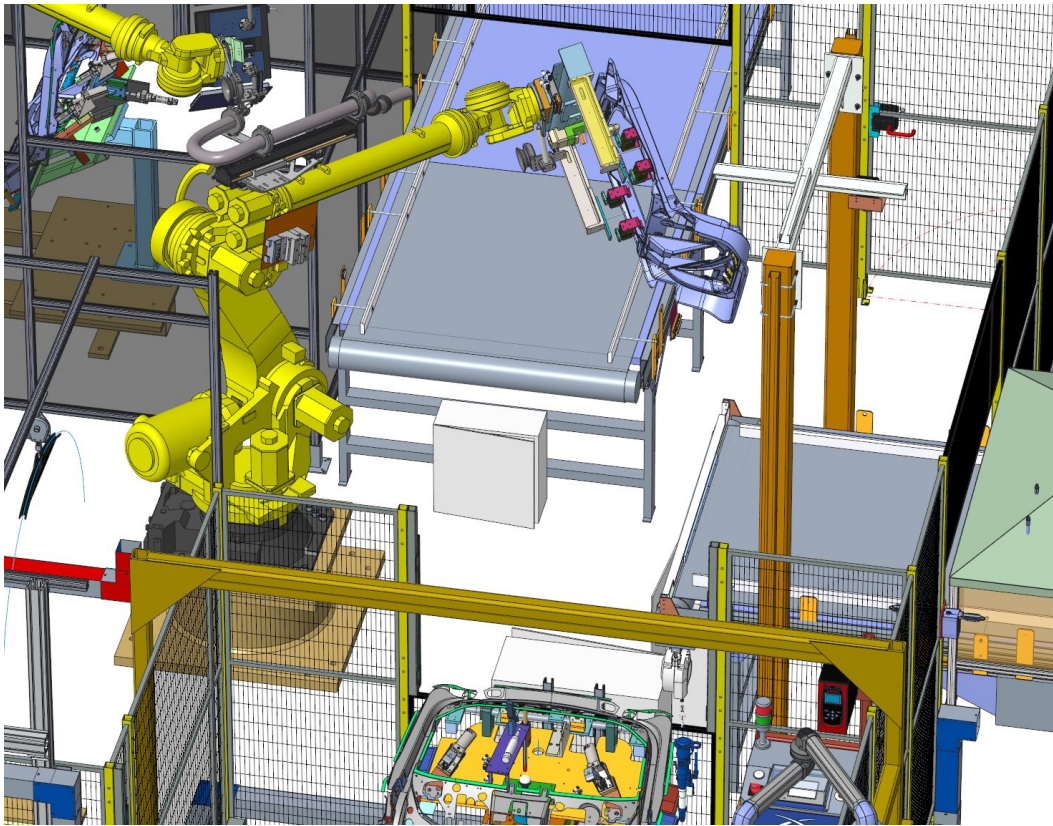
4

+V

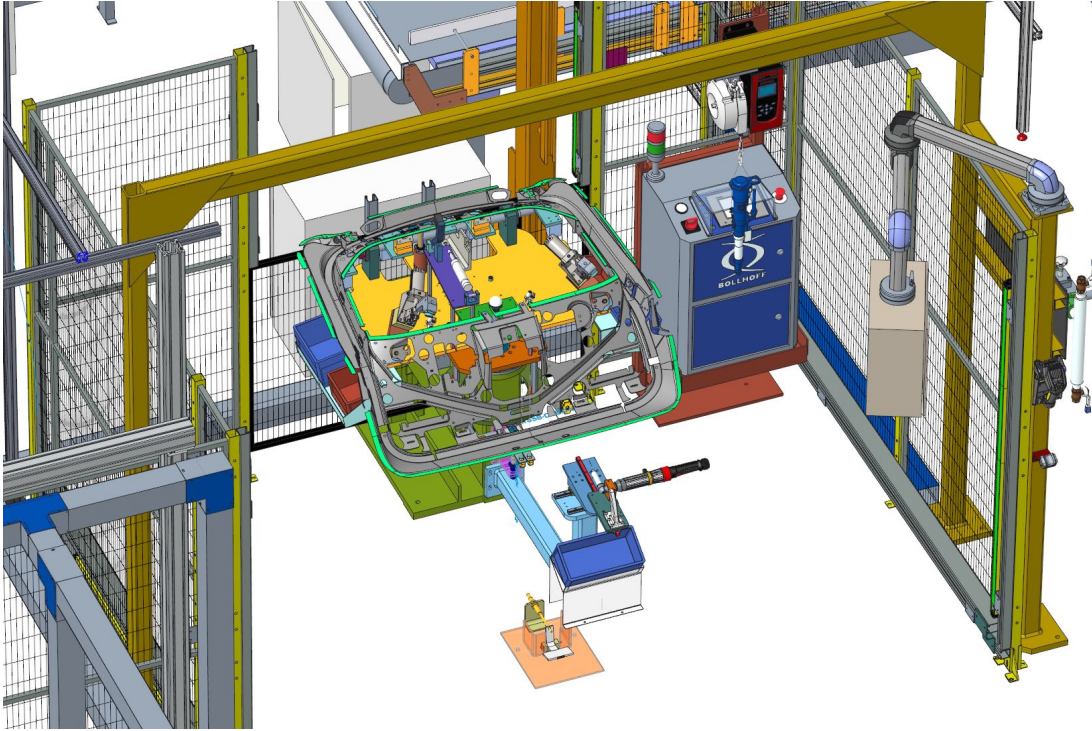
Automation Made Seamless



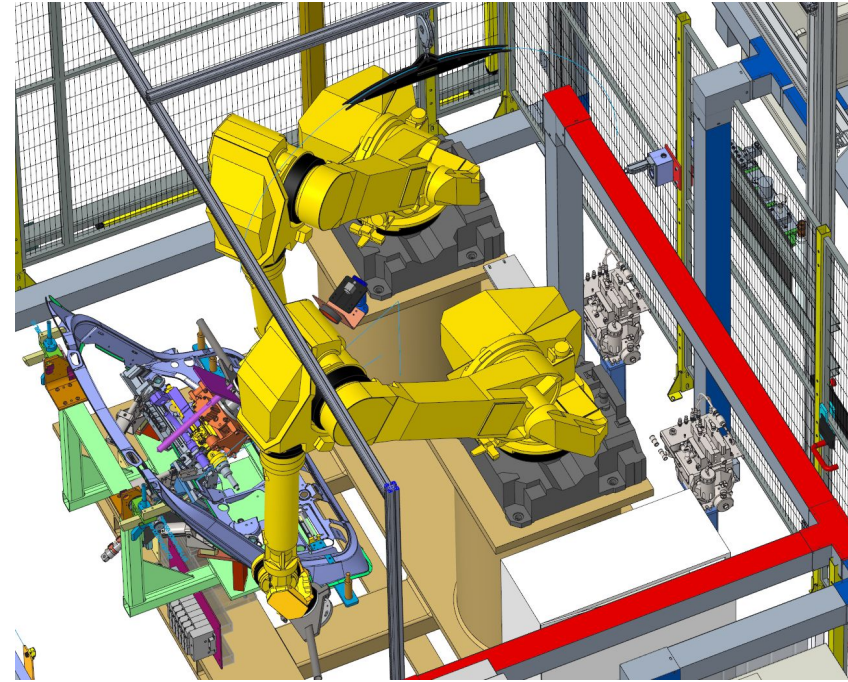
Layout



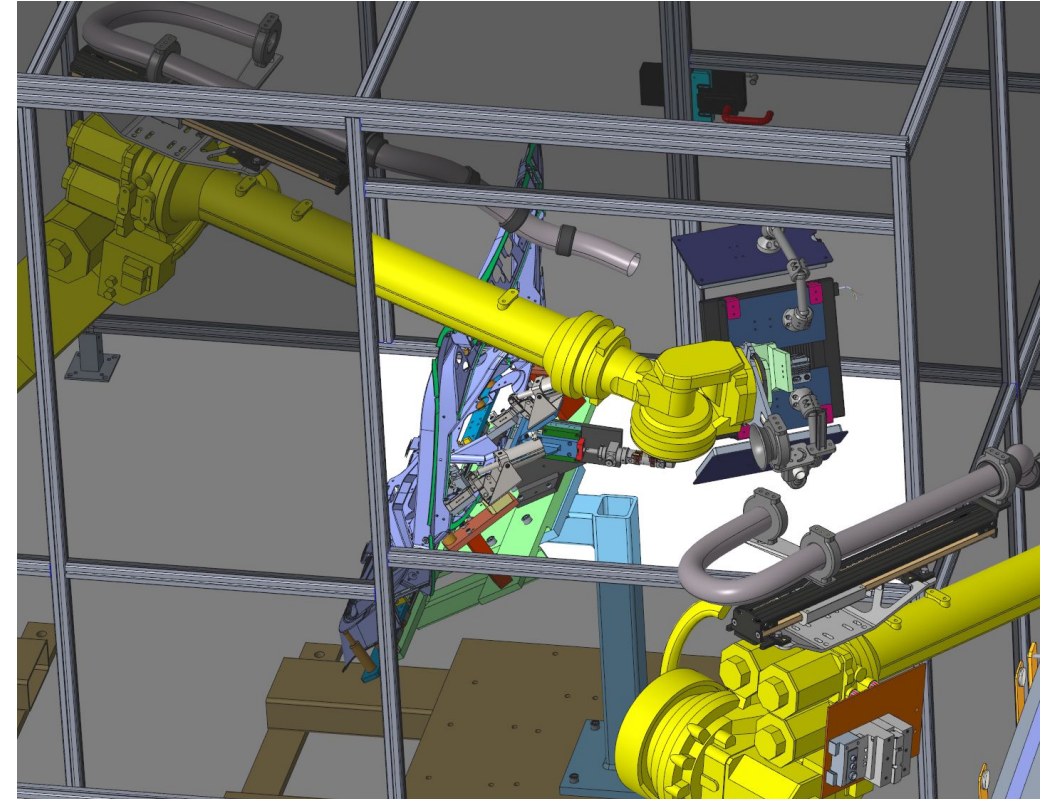
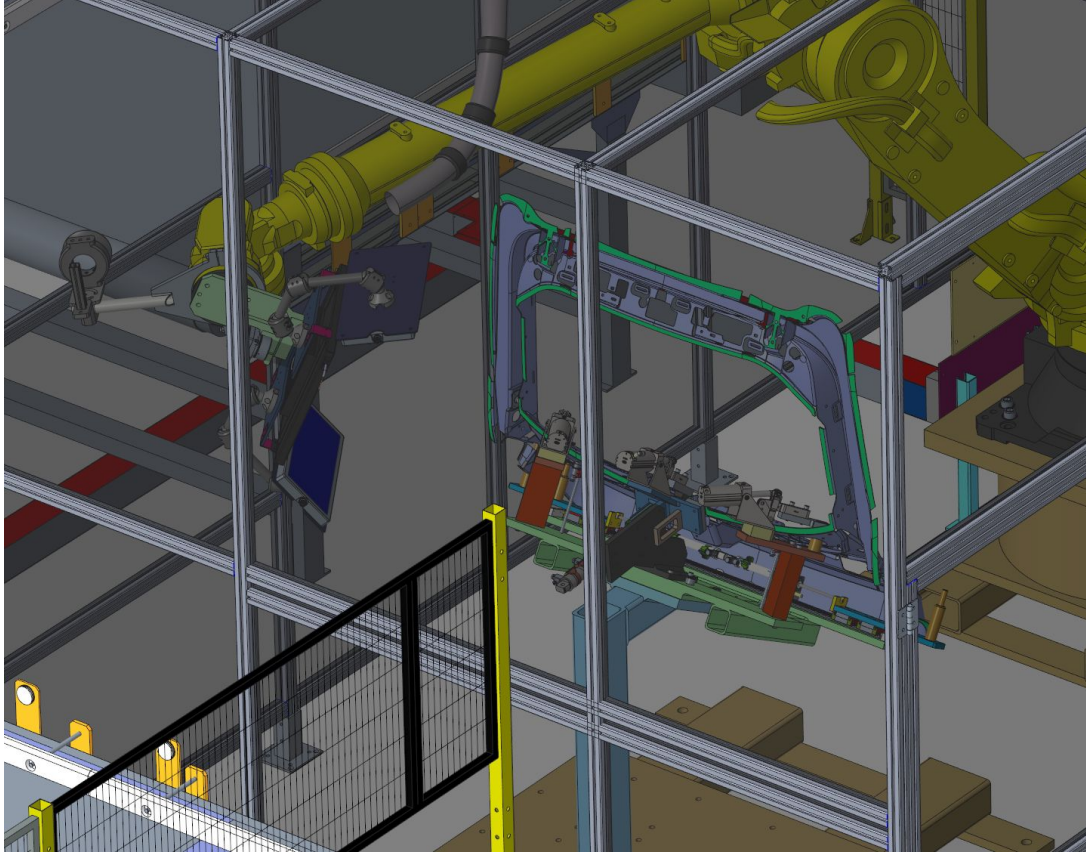
Robotics Material Handling



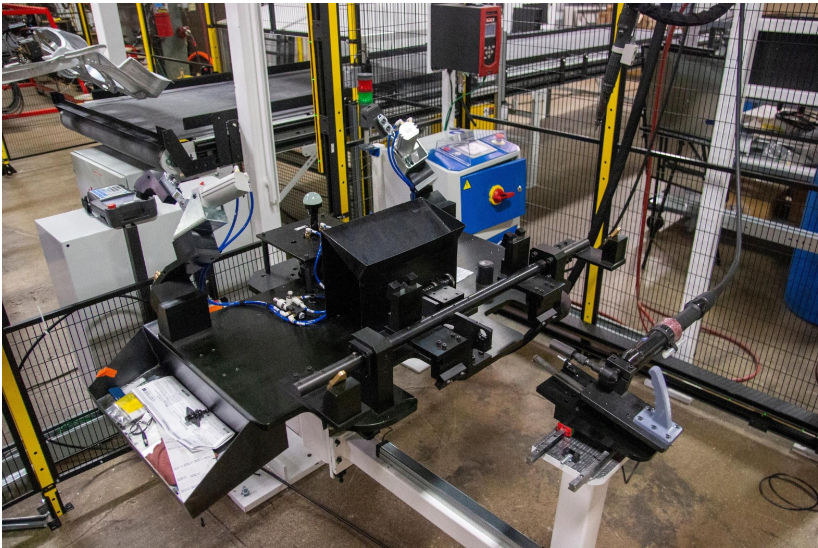
Inline Manual Process Integration



Automatic Torquing



Assembly Line Case Study



Assembly Line Case Study

+VANTAGE

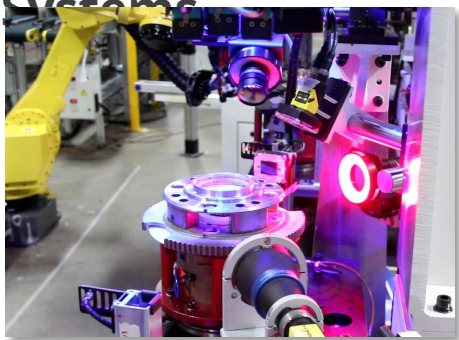


Automation Made Seamless

Core Product Overview



Inspection Systems



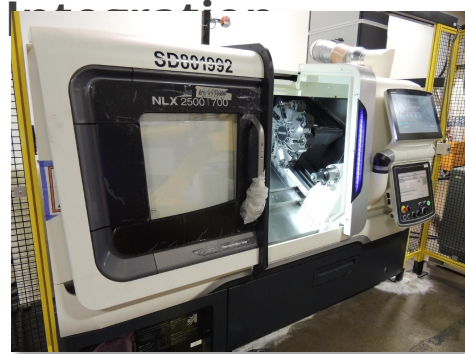
Vision, Laser, Pneumatic, Dynamic, Torque, as well as Classification and Identification

Automation & Robotics



Fully automatic systems to streamline your manufacturing process and increase production

Systems



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

Engineering & Service



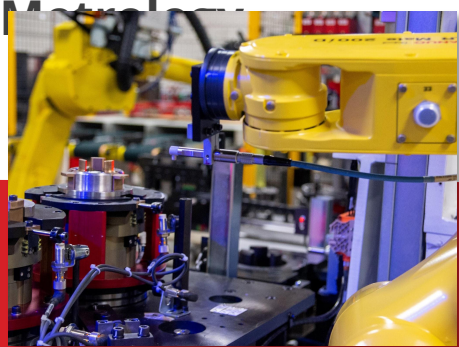
Let the +Vantage team's decades of experience solve your manufacturing challenges

Assembly Systems



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

Industrial



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)



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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



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Project: Camcor 200752 Assembly System

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Activity	Duration	Start Date	End Date	Completion %
Customer approval for Electrical/Pneumatic design	3 days	Mon 5/6/21	Mon 5/10/21 17	0%
Utility information with Camcor	0 days	Mon 5/10/21	Mon 5/10/21 18	0%
Electrical build	4 days	Tue 5/11/21	Fri 5/14/21 19	0%
Wiring	20 days	Mon 5/17/21	Fri 6/11/21 20	0%
Assembly	73 days	Tue 4/20/21	Thu 7/29/21	0%
Manufacturing	35 days	Tue 4/20/21	Mon 6/7/21 14	0%
Electrical/Pneumatic items	5 days	Mon 5/31/21	Fri 6/4/21 20FS+10 days	0%
Parts from Customer for Setup and Runoff	0 days	Tue 6/1/21	Tue 6/1/21 24FS-5 days	0%
Press from Customer	0 days	Tue 6/1/21	Tue 6/1/21 24FS-5 days	0%
Assembly	19 days	Tue 6/8/21	Fri 7/2/21 24	0%
Gate programming and debug	19 days	Mon 7/5/21	Thu 7/29/21 28	0%
At Vantage	1 day	Fri 7/30/21	Fri 7/30/21	0%
Off	1 day	Fri 7/30/21	Fri 7/30/21 29	0%
Mer Acceptance	1 day	Fri 7/30/21	Fri 7/30/21 29	0%
Package/Ship	2 days	Mon 8/2/21	Tue 8/3/21	0%
n	1 day	Mon 8/2/21	Mon 8/2/21 33	0%
	1 day	Mon 8/2/21	Mon 8/2/21 33	0%
/21	1 day	Tue 8/3/21	Tue 8/3/21 37	0%

+V

Automation Made Seamless

Proud Partners of:



Robotics



Vision Systems



Marking Systems



PLC



Torquing/Pressing



Our Featured Customers

+VANTAGE



15

+V

Automation Made Seamless

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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800 Shangcheng Rd
Pudong New District Shanghai. 200120
tel: +86 137 7103 2628

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Metrology & Assembly Solutions