NGen Next Generation Manufacturing Canada

KIRCHHOFF AUTOMOTIVE

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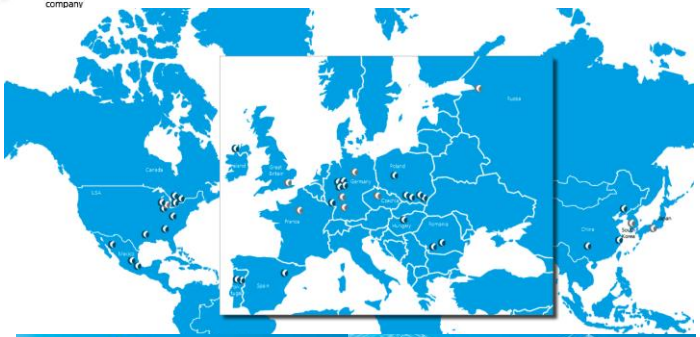
- **KIRCHHOFF Automotive**

  A global leader in design and supply of best-in-class structures for body and chassis of vehicles since 1786. Worldwide turnover of $1550M (Euro) and 9300 employees across 30 plants in 11 countries. In North America, 71% of passenger cars and LCV produced, contain at least one part made by KIRCHHOFF Automotive (KA)

- **Our vision for Advanced Manufacturing in our facility:**

  To produce high quality products with state of the art technology and manufacturing methods (i.e. remote 3D laser welding, robotic MIG welding, digital CNC bending, automation and automatic sensing and inspection etc.)



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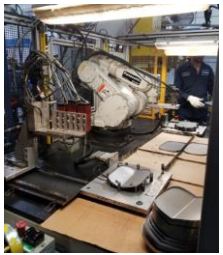
Collaborative Robot Fuel Filler Door Manufacturing Automation Project Idea:

- Automotive OEMs have Class-A surface requirement for Fuel Filler Doors. KA Currently manufactures over 2 million Fuel Filler doors each year for several OEMS. KA once had 30% of the market share.
- Fuel Filler Door manufacturing creates challenges with a significant rejection rate because:
  - Assembly contains very small components (i.e., pins and springs)
  - Very strict Class-A surface requirement but with inconsistent human eye inspection
  - Complicated manufacturing steps with tedious manual operations
  - Stringent cleaning/packaging resulting in longer machine idle time with only 30% to 40% utilization

1.Crimp

2.Rotate, Projection Weld and Install Spring

3.Sealant



4.Hemming

5.MIG Weld

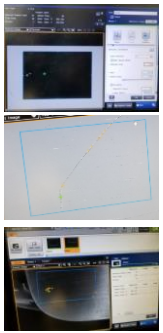
6.Inspect and Pack

Collaborative Robot Fuel Filler Door Manufacturing Automation Project Idea:

- Automate the manufacturing process such as robotic pick and place, automatic press cleaning, auto-dispensing, and automatic surface inspection, etc.
- Reconfigure current 4 current lines into fewer lines or with fewer shifts
- Use collaborative robots to improve production quality and speed up the manufacturing process with interactive operation with operators, thus to strengthen the global competitive position for high quality intensive manufacturing applications

Cobots

2D or 3D vision



Partnerships we are seeking

- Vision guided collaborative robot company
- Machine vision company
- University / Research Institutes.
- Machine integrator

Potential Benefits of Collaboration

- Industry manufacturing experience and knowledge share
- Potential several robots and 2D/3D vision systems purchase
- Great opportunity to develop the next generation technology that can solve challenging industrial problems
- To gain extensive experience on technology implementation
- Make the advanced technology into practical class-A application