



UNIQUE CIRCLE
AUTOMATION P. LTD.

“Trusted By Automotive Industry Giants”

SPM & PROCESS AUTOMATION



Established in 2010 by Mr. Parag Shah, a seasoned expert with over 30 years of experience in the automotive and aerospace sectors, Unique Circle Group began with just two employees and a vision to deliver world-class solutions for OEMs and toolmakers.

Today, with a strong in-house team of over 150 skilled professionals and engineers, Unique Circle is a trusted name in automation and robotic solutions for manufacturing and assembly processes. We provide end-to-end process solutions, starting from post-molding through to dispatch.

Our wide product range includes Poka-Yoke stations, turnkey assembly lines, AVSS systems, punching and pasting machines, ultrasonic welding (USW), hot plate welding, vision inspection systems, material handling solutions, patterns, and hot water & cold pressure lamination systems. We also specialize in custom-built equipment for process automation using electrical, electronic, hydraulic, pneumatic, and servo systems, along with data logging, traceability, and required software solutions.

A division of the Unique Circle Group, **Unique Circle Automation** is where challenges meet solutions. We consistently deliver cost-effective and durable solutions while maintaining the highest industrial standards.

We are committed to creating value for our customers. Our core team, with an average of over 15 years of experience in industrial automation, is well recognized for its strong commitment and reliable post-sales services.

Vision:

To become a leading and trusted partner in the global automation industry.

Mission: To ensure long-term, profitable growth by committing to our customers' success and the continuous development of our employees.

INFRASTRUCTURE

FACTORY AREA

- 24,000 Sq. Feet

PORTABLE ARM CMM

- FARO 8' : 1 Nos.

SOFTWARE- Design

- Catia V15
- Catia Composer
- Cadbro
- Autocad

VMC MACHINES

- Hartford - 2x1m
- Bfw - 1.3x0.75m
- Bfw - 1.2x0.6m
- Jyoti -0.8x0.5m

SOFTWARE- Controls

- E-plan
- AutoCAD
- PLC- Siemens, Mitsubishi, Delta, Omron, AB
- Scada: Ellipse, WinCC
- Traceability: LabVIEW, Python

FABRICATION

- CO2 Welding: 04 Stations

TOOL ROOM

- M1TR: 04
- Milling: 02
- Lathe: 02
- Surface Grinding: 01
- ID/OD Centerless grinding - 01

SHOPFLOOR



VMC MACHINES

- Hartford - 2x1m
- Bfw - 1.3x0.75m
- Bfw - 1.2x0.6m
- Jyoti -0.8x0.5m





Tool Room



Fabrication



Assembly Area 1



Assembly Area 2



Mechanical Designing

- 15 Mechanical Design Engineers

Software :

- Catia V15
- Catia Composer
- Cadbros
- Autocad

Electrical Designing & Programming

- 8 Controls Engineer
- 7 Electric wiremen's

Software :

- E-plan
- AutoCAD
- PLC- Siemens, Mitsubishi, Delta, Omron, AB
- Scada: Ellipse, WinCC
- Traceability: LabVIEW, Python



Our Products

- AVSS System
- Hot Water Servo Press Lamination
- IR Heating Press Lamination
- Robotic USW Welding Cell
- Mig welding Cell
- Hydraulic Punching Pasting SPM
- Fabric Pasting Kimokomi Machine
- Duct Cutting, Drilling & Punching Machine
- Hot Plate Welding Machine
- End of Line Testing
- Effort Testing
- Vision Inspection
- Heat Stacking SPM
- Plastic Surface Machining
- Leak Testing Machine
- Assembly Line
- Motorised Assembly Station
- Standalone Station
- PDI Station
- Electrical/ Electronic Parts Checking

AVSS System:

Our storage solution is primarily designed for space optimization. It enables automatic loading and unloading of hangers to store goods efficiently and make optimal use of available space. The hangers are rugged, durable, and easy to use.

This system not only saves space but also delivers significant benefits in terms of time, cost, and material handling efficiency

Operation:

- Goods can be stored in up to **11 layers**.
- The system can be operated by **two operators**.
- Loading and unloading of goods to the desired layers are controlled through a **PLC and HMI system**.
- At a time, **2 to 6 parts** can be loaded, depending on product size.
- Best suited for plastic parts such as **bumpers, doors, tailgates**, etc.
- Saves approximately **35–40% of storage space**.
- **SAVE WIP STORAGE MATERIAL & HANDLING**
- **EASY IDENTIFICATION OF DIFFERENT PART**



Hot Water Press Lamination:

This process is used to press soft skin onto plastic parts using a heated tool. The machine is equipped with an **SEW drive motor** to maintain accurate positioning. It features one movable tool that moves upward and downward to press the part placed on the lower tool, ensuring consistent and precise lamination.

operation:

The pressing covering machine operates through a **servo-driven system** that controls the upward and downward movement of the equipment. The tool is heated using a **mold temperature controller**, which heats the water and circulates it through the mold. This hot water transfers heat to the product, activating the adhesive and forming the required pressing pressure.

The machine is equipped with **soft aluminum block fixtures** to securely hold the part and prevent scratch marks on the surface.



Quick Changeover tool

Robotic Welding Cell:

Uses an **ultrasonic welding system** to join plastic parts, achieving the desired **strength and stability** in the final assembly.

Operation:

- **High accuracy and repeatability** are achieved through robotic operation.
- Different welding sizes and horns are provided according to application requirements.
- A single operator can handle a **4-stage robotic cell** with 1–2 robots, reducing manpower and saving time and costs.
- Robots are integrated with **PLC and HMI controllers** to ensure safe and mistake-proof operation.



Hot Plate Welding:

This solution is designed for **automotive plastic component joining**, including critical components such as **air, water, and fuel filter tanks**. We provide **customized solutions** tailored to specific product requirements, covering the entire process from **design to production handover**.

Operation:

- The **thermal joining technology** is used to melt plastic materials at the joining temperature using a **temperature-controlled heated plate**. We provide solutions for a temperature range of **150°C to 400°C**, depending on the material being joined.
- Molten parts are pressed together under **precise pressure** to create a strong molecular bond that often **exceeds the strength of the original material**. This process offers major benefits, including **leak-proof joints** and **minimal post-processing**.
- The **hot plate welding process** is widely used in the automotive industry, and we provide solutions for **medium to large thermoplastic components**.



End of Line Testing:

Performed on the assembly line to ensure that all **electrical and electronic components** are correctly installed and functioning properly.

Operation:

- Validation of **sensors and components** using sensors, vision inspection cameras, and electrical/electronic testing equipment.
- Quality checks of **finished products** to ensure compliance with specifications.
- Inspection and testing of **all types of mechanical, electrical, and electronic parts**.
- Functionality tests for electrical and electronic components, including **RPAS, FPAS, ADAS sensors, wire harnesses, fog lamps, and tail lamps**.
- Positive and negative air leakage testing** to ensure airtight performance.
- All solutions are **customized and designed to be mistake-proof**, leveraging precise mechanical and electrical design for reliability



Leak Testing SPM:

We provide a **modular leak detection system** designed for efficient production lines. Our solutions include **both positive and negative leak testing**, customized to meet specific production requirements.

Operation:

- Designed to detect **minor to major leakages** in components.
- Widely used in the **automotive industry** to ensure components are correctly built or welded.
- A crucial quality check to **prevent end-user complaints**.
- During leak testing, components are filled with **sufficient pressure** based on their volume for a specified time period.
- The **filled air is monitored** to determine the exact leakage from the component.
- Our highly sensitive testing equipment can detect leak rates as low as **1 Pa**, ensuring maximum reliability and accuracy

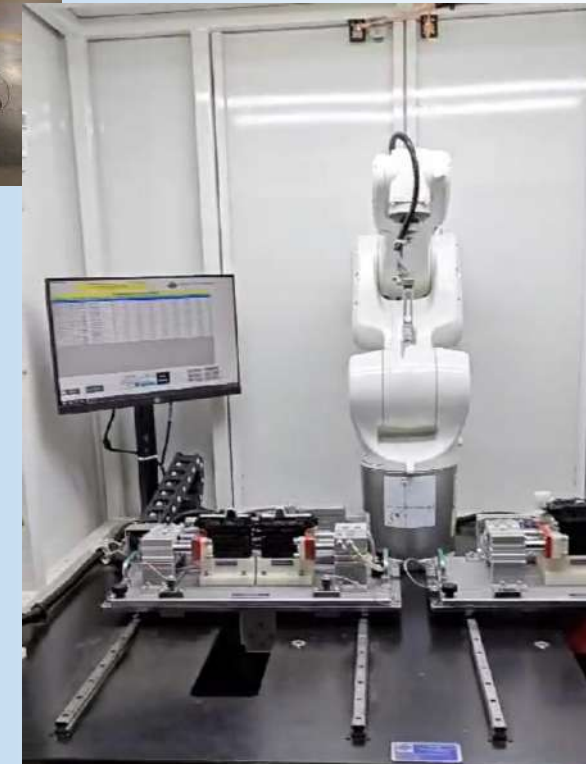


Effort Testing SPM:

Measures the **force or torque** required to operate components such as **AC vents, gear shifters, and console armrests**. This testing helps ensure **comfort, safety, and quality** by verifying that the physical effort required to operate the components is within acceptable limits

Operation:

- Measures the **force required for operation** by simulating component use on the assembly line.
- Helps detect **abnormalities in design force** for components.
- Uses **rugged load cells** within the required range to measure effort accurately.
- Effort data is analyzed using **customized software** to determine component quality by comparing against specified limits.
- **Product-wise data storage** is available for traceability and reporting.
- Effort testing solutions can be provided for forces ranging from **5 N to 5 kN**, depending on product requirements.
- Applicable for products such as **AC vents, console armrests, driver and passenger seats, gear shifters, steering systems, and more**.



Front & Rear Door Assembly Line



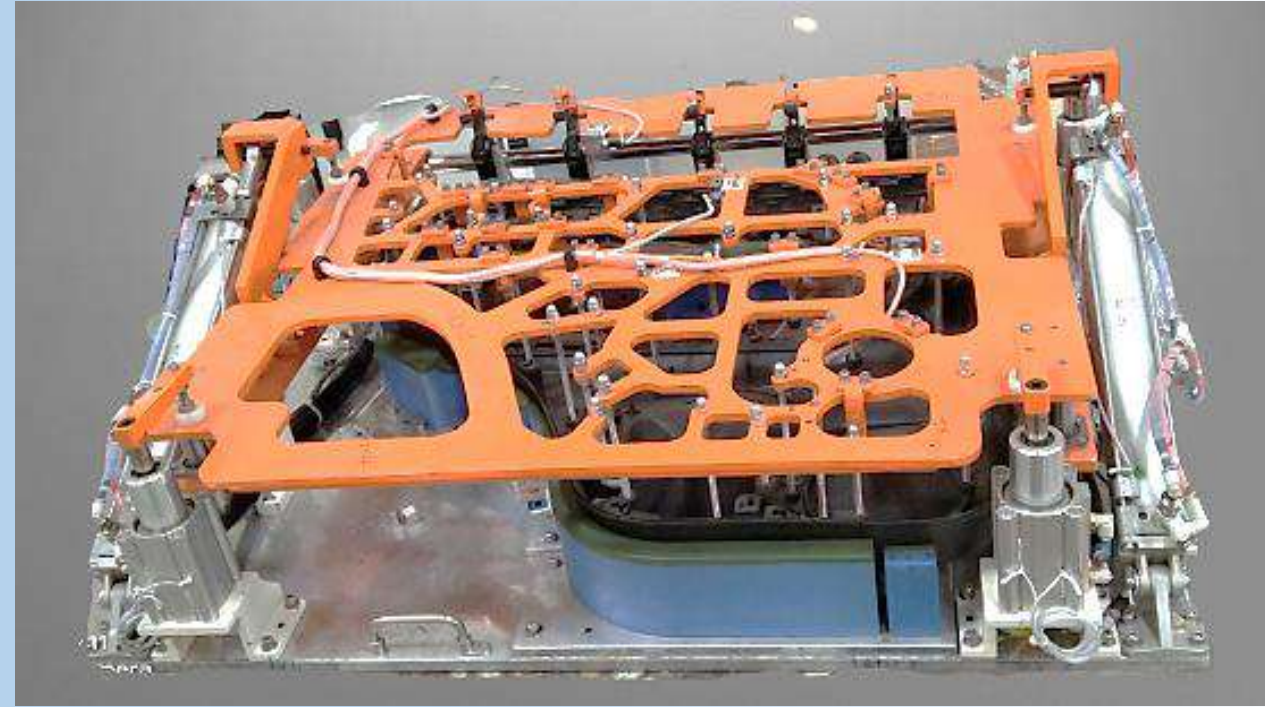
Vision Inspection Station



USW Welding SPM



Robotic Ultrasonic welding Fixture





Assembly Pokayoke Station



Duct Cutting, Punching & Drilling



Bumper Punching & Pasting Station

Export Projects

2014 | 2 Projects

- Thailand
- Russia

Faurecia
Faurecia

B515 Ford
B515 Ford

2015 | 3 Projects

- South Africa
- South Africa

Faurecia
Motherson

P375ICA
T6ICA & 660A

2016 | 3 Projects

- South Africa
- Brazil

Motherson
Bajaj

MLM18 & 650A
Decal

2017 | 5 Projects

- Malaysia &
Phillipines
- RUSSIA
- HUNGARY
- UAE

Bajaj

FAURECIA
MOTHERSON
MOTHERSON

DEFRAN –KTM

B515MCA
W177AMG DIAMILLER
Q3, Q4 & Q8

2018 | 2 Projects

- SPAIN
- South Africa

ABB- FAURECIA
Motherson

BR232-DIAMILLER
P375 FORD

Export Projects

2019 | 2 Projects

- MEXICO
- THAILAND

EMERSON
FAURECIA

HI-BAY EOL
VINFAST-AIRVENT

2020 | 4 Projects

- SOUTH AFRICA
- CZECH REPUBLIC
- ROMANIA
- FRANCE

TOYOTA
FAURECIA
EMERSON
FAURECIA

645B MLM
BR232-DAIMILER
HI-BAY EOL
VS11 & VFX

2021 | 3 Projects

- CZECH REPUBLIC
- IRELAND & USA

MOTHERSON
MERGON

BCB EFFORT TEST
BLOW MOULDED DUCT
ASSEMBLY & INSPECTION

2022 | 1 Projects

- IRELAND

MERGON

DESIGNING

2024 | 1 Projects

- SOUTH AFRICA

MOTHERSON

640X

Till Date

No. of Projects Delivered

- 2600+

Team of Employees

- 150+

Domestic Projects

- 91%

Export Projects

- 8-11%

Happy clients

300+

Winning Awards

21+

Core Team



Founder- MD
Parag Shah



DIRECTOR
Ashok Bhalekar



Ass. Gen Manager
Prashant Patil



Manufacturing
Anil Bhalekar



Controls & Electrical
Ganesh Patil



Design
Ganesh Borude



Projects
Sumit Choudhary



Accounts
Sagar Nirmal



HR
Sushant Patil



Purchase
Parmeshwar Dorage



Marketing
Santosh Jadhav

OUR GLOBAL VALUED CUSTOMERS



EXPORTS

 TOYOTA SOUTH AFRICA	 BAJAJ BRAZIL MALAYSIA PHILIPPINES
 ABB ROBOTICS SPAIN SLOVAKIA	 EMERSON MEXICO ROMANIA
 motherson HUNGARY CZECH REPUBLIC UAE	 MSSL GLOBAL RSA Module Engineering Limited SOUTH AFRICA
 faurecia FRANCE RUSSIA THAILAND RSA	



	 TATA
 HONDA	 MARUTI SUZUKI
 BAJAJ	 TOYOTA
 ABB ROBOTICS	 EMERSON
 TATA Marcopolo	 Mahindra

OEM

OUR DOMESTIC CUSTOMERS



TATA MOTORS
Connecting Aspirations



∞ mobility



SINTEX
ACTIVE THINKING

IAC
International Automotive Components

TATA
TATA AUTOCOMP

LUMAX



LEAR
CORPORATION

SMRC
Samvardhana Motherson Reydel Companies

FORVIA
Inspiring mobility

POLYPLASTICS
INDUSTRIES (I) PVT. LTD

Golde

SAINT-GOBAIN

UNO MINDA
DRIVING THE NEW

motherson

Yanfeng
Global Automotive Interiors

TE
connectivity

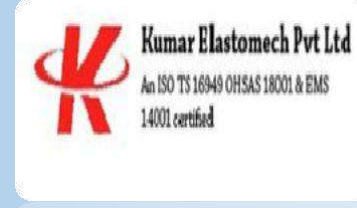
DiFACTO

UMKL

PPAP

ASAL
A TATA Enterprise

OUR DOMESTIC CUSTOMERS



OUR DOMESTIC CUSTOMERS





- SINCE 1995...

CHECKING FIXTURE SPECIALIST

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SPMs & AUTOMATION

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