



**Company Name:** Pixel Automation Pte Ltd

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## About

Pixel Automation is a Singapore based Company with core business activities of building turnkey industrial automation systems for customers in Singapore and Worldwide.

Since its inception in 2011, company has steadily grown in its market share and become a predominant automation equipment supplier in Singapore and the region. With years of expertise and experience in supporting worldwide MNC companies, Pixel has established strong presence in countries such as South East Asia, China, United States and India.

## Product

### PixCell

PixCell offers unparalleled flexibility to manufacturers facing challenges from shorter product life, shorter time-to-market and increased product complexity. PixCell agile manufacturing cells which are multi products capable, built-in with Rapid Change Over (RCO) concept and re-usable hardware, provides an unique manufacturing platform. Making it suitable for both low volume-high mix product manufacturing requirements and high volume mass production. A truly ideal candidate for Industry 4.0 smart manufacturing approach.

### UNIQUE FEATURES

- Clear demarcation of process line and interchangeable process module design facilitates rapid change over of process modules or modules & bases are equipped with Automatic Tool Changers (ATC) for quick engagement of electrical, pneumatic and vacuum connections without any wiring or piping change.**
- Variable product handling 3 axes delta robot with vision**
- Process module position calibration through vision camera**

### FLEXIBLE CONFIGURATION

Discretized & distributed intelligence control system offers easy scalability of the line through simple module configuration without modification to the existing program.

PixCell modular design allows on-line tool changeover and IOT smart tag allows to be easily interchanged to run different products from same product family. The entire processing module can be used for any changed to run totally different product line process.

### MODULAR & RE-USABLE

When the current product life ends, the entire machine along with its control system and hardware can be swapped the Processing Module specific to that product can be re-used, reducing considerable investment cost for new products lines.

**Interchangeable Top Fixture**

**Interchangeable Process**

### LOWER COST & LEADTIME

Traditional customized automation equipment requires customized design for each module resulting in long lead time and high price development cost. PixCell's unique design allows the general frame to be re-used for mass produced, and thereby lowering the overall cost, making flexible and agile line.

### SCALABLE & FAST INTEGRATION CAPABLE

**Reconfigurable IOT carts along with SmartMove Transport System** allow PixCell to be converted to different configuration to be suitable for various manufacturing line requirement.

**Green Manufacturing**  
Distributed intelligence control addresses the need for hundreds of sensors and supports on the track, and thereby provides a lean machine design without excessive cable wiring and huge control panel with hundreds of I/Os. This also supports green manufacturing through reduce power consumption.

### Multiple Lines Configuration

PixCell revolutionary, scalable design make it suitable for "flexible learning" concept and capable of "for size over" production.

**Non-Sequential Placement**  
This architecture allows non-sequential placement of processing cells, enabling area to increase capacity or introducing additional or reworking stations in the process steps in the line.

**Scalability**  
PixCell supports incremental scalability without re-programming or re-configuration of existing line.

**Raw Material Delivery:**  
IOT Carts allow different products to be delivered to respective stations in the line.  
IOT Carts allow raw materials to be supplied to individual station without any manual intervention.

### Processing Module

Discretized process modules that can be rapidly changed over to run another process or product in the same base.

**SmartMove Transport System with Distributed Intelligence Control**  
Sensor less and stopper less transport system with modifiable lane profiles for traffic control and module connectivity.

**IOT Carts**  
Autonomous or semi rail based IOT cart provides intelligent product transport between cells enabling 'lot Size One' capability with built-in full product data traceability.

### PixCell Base

**Scalable Base**  
Re-usable, flexible manufacturing cells with rich product capability.

**PixCell Picker**  
AI fully vision assisted versatile robotic product handling system that can pick and place the product by compensating actual robot position error.

### SPECIFICATIONS

PixCell Base	Module Size (LxWxH) (mm)	IOT Cart	Module Size (mm)	Robot Base IOT	Robot Base IOT
Small	1000x1000x1000	PixCell (standard)	300x300x100	300x300x100	400x400x1200
Medium	1400x1000x2000		300	300	300
Large	1800x1000x2000		4	3	3
			~1.0-1.5	~1.0-1.5	~1.0-1.5

Dimension: Full IOT with 3-axis delta robot assembly capable.

**SMART MANUFACTURING SYSTEMS FULLY INTEGRATED WITH MES AND ERP SYSTEMS WITH END TO END TRACEABILITY AND DATA ANALYTICS**

Consists of:

- PixCell
- PixCell-Sciemetric Cloud Data Analysis and Reporting Tools
- PixCell SMART Mfg Control System

**AREA OF EXPERTISE**

- PACKAGING SYSTEMS**  
High speed primary and secondary packaging systems integrated with Cartoning, Flow Wrapping, Slowing and Fulfiling Systems
- HIGH PRECISION LIQUID FILLING SYSTEMS**  
With accuracy of +/- 0.1ml
- PRECISION LASER MEASUREMENT AND VISION SYSTEMS**  
High precision 3-D laser measurement
- INDUSTRIAL LEAK TEST SYSTEMS**  
Ultra low leak test system capable of leak detection as low as 0.1 sccm

**PRODUCT TRACEABILITY WITH DATA ACQUISITION AND MONITORING SYSTEMS**  
End-to-end part traceability system. Customisable and scalable software and hardware architecture

PixCell Automation is a Singapore based Company who specializes in designing and building customized automation solutions for various industries. Providing full turnkey solutions from concept design, fabrication, assembly, programming to final installation and commissioning. All systems are made to comply with international standards.

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**SUITABLE FOR A WIDE RANGE OF APPLICATIONS**

- LEAK TEST
- DISPENSING STATION
- VISION & LASER INSPECTION
- LOADING/UNLOADING STATION
- COMPONENT ASSEMBLY STATION
- ULTRASONIC WELDING
- LIQUID FILLING SYSTEM
- AND MANY MORE...

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**SOLE AGENT FOR**  
MGS Machine | Sciemetric

PixCell Automation is the exclusive agent for MGS Machine, USA and Sciemetric Instruments, Canada in Asia region. With the above collaboration, PixCell Automation is able to provide highly technical and specialized solutions by integrating state of the art technologies and of the same time providing integration and service support from Singapore to customers in the region.

**PixCell**  
with SmartMove Transport System

**AGILE MANUFACTURING SOLUTION FOR THE NEXT GENERATION**

Highly Flexible and Scalable Cells with Distributed Intelligence Transport System and IoT Carts

## Company or product video

<https://www.youtube.com/watch?v=bExOJsuaOSY>

## Prominent technologies used/offered

- IoT with SMART Machine Learning (ML) and Artificial Intelligence (AI) incorporated into machine design and operation.
- SMART Move is a design patented by Pixel.

## Focussed areas/sectors

- Manufacturing
- Logistic
- Precision industry
- Semiconductor Assembly

## Five major companies worked with

Information is confidential because of NDA with customers, but range of clients include MNCs and SMEs from US and Singapore

## Category

- Technology Provider

- Service Provider
- Consultants