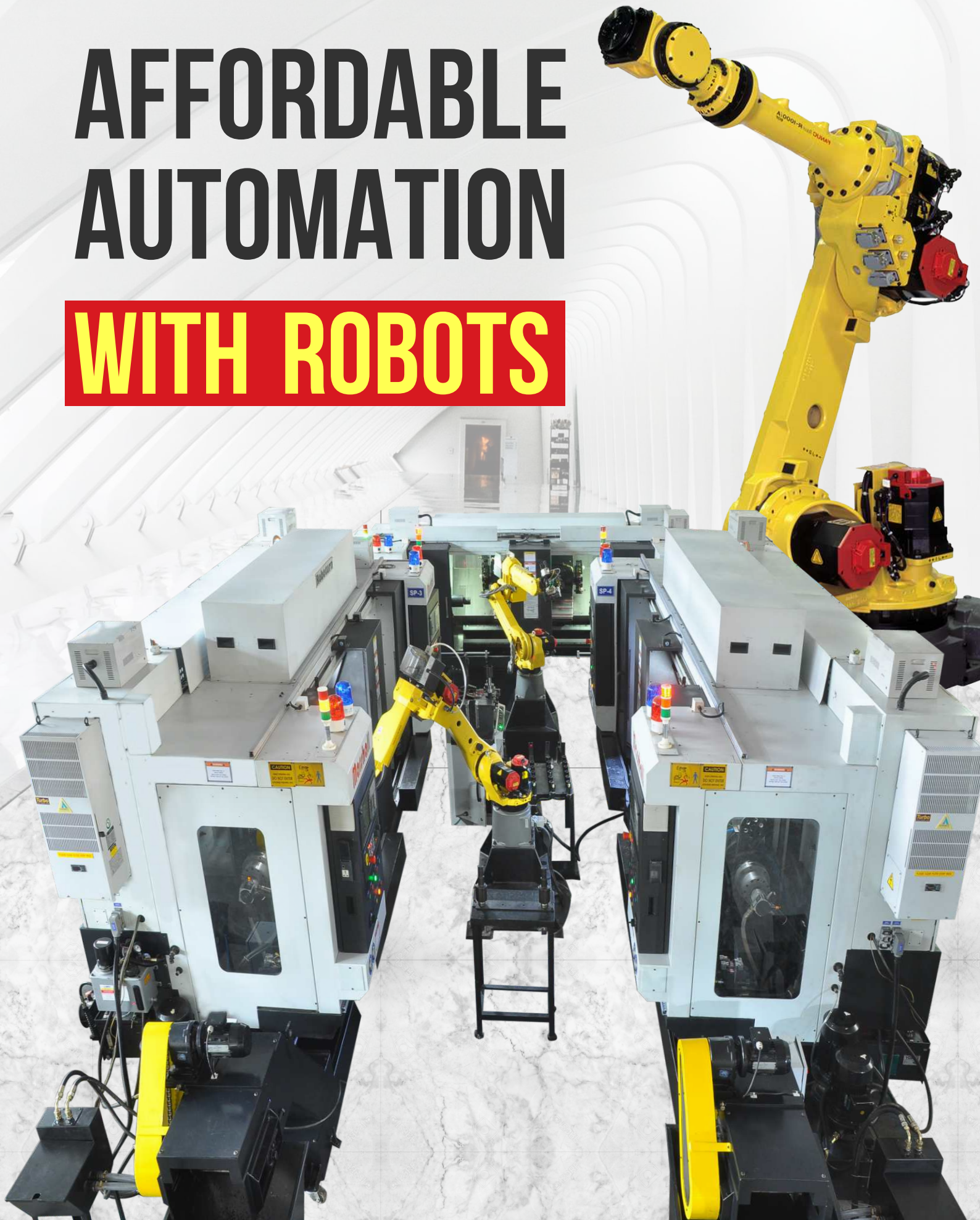




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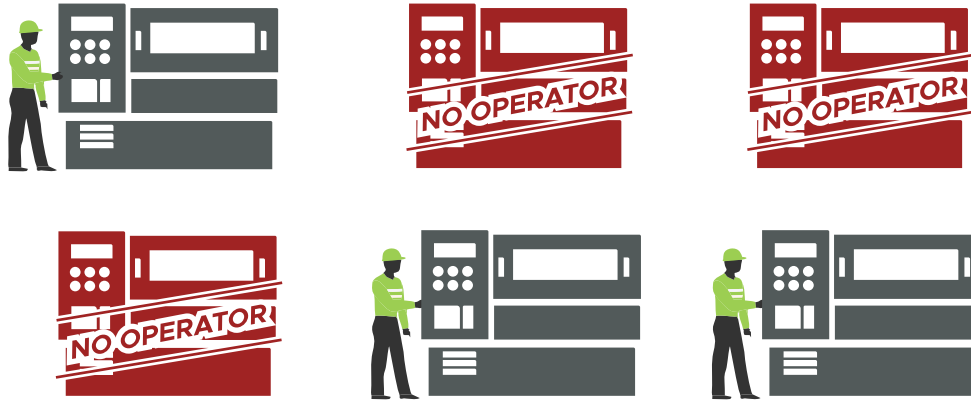
AFFORDABLE AUTOMATION

WITH ROBOTS



WHY is Affordable Automation needed?

#1



Shortage of Skilled Operators

#2



Social Distancing after COVID Pandemic

#3



Need to have higher OEE to improve profits. (Automated machines have 25-40% extra output)

WHY Innovative Automation Required with ROBOTS

- Robots are extremely flexible and reliable BUT they are VERY EXPENSIVE
- Innovative use required to reduce the payback period of investment on Robots.

EXAMPLES of INNOVATIVE AUTOMATION with Robots:

- Multiple Spindles operated by Robots in Cells & Lines
- Other Value added tasks like Cleaning, Deburring & Inspection.

WHY Robots Required for Automation?

#1

Non-Robotic reliable (Non-Jugaad) Automation can handle smaller jobs which can be fed by gravity or vibration to pickup position inside machine enclosure.

#2

In case of Large Diameter, Long Length, Heavy (more than 1.5 Kg) or complex shape Jobs, Robots are most suitable because they have 6 Axis and are readily available in capacity from 6 Kg to 1500 Kg.

HOW are Robots Used Innovatively

1 By Placement/ Positioning

2 By Using a Track (7th Axis)

3 By additionally using them for Cleaning, Washing, Deburring & Measuring.

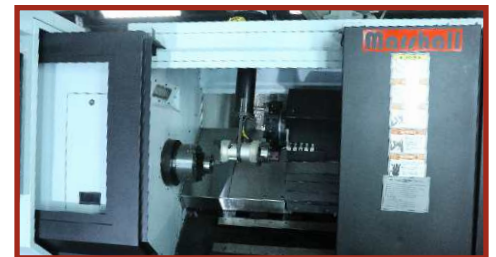
Innovative Use # 1 Placement/Positioning



Robot can load/unload 4 turning Spindles, Clean, Inspect and also Load on other Machines for subsequent operation.

To Check Video Solution

[CLICK HERE](#) 



Robot loading through Roof



Job cleaning station



Inspection & Auto Correction with **SmartCorrect**

Example #2

Roboturn Cell for Transmission Gear



Cell consists of 2 Nos. TWINTURN XL Turning Centres (4 Nos. Spindles) positioned back to back with a Robot on high Platform loading & unloading through the retractable roof. Job is inspected with 3 Nos. **SmartCorrect** Gauging Stations mounted on Machine roof.

To Check Video Solution

[CLICK HERE](#) 

Example #3

Most Versatile automated twin spindle turning center in the world.



·Twin Spindles for completing job (OP 10+ OP 20) on the machine.

·Roof mounted 6 Axis Robot with 7th Linear Axis for covering wide area.

·Multiple functions of Robot: Tending to two spindles, cleaning station, Measurement Station & Laser marking station (for traceability)

To Check Video Solution

[CLICK HERE](#) 

Example #4

Roboturn **FLEXI**CELL



Robot changes Grippers in 2 seconds to perform flexible tasks
World's first Travelling Column Turning Center (Patent Applied)
Excellent for Automated Cells with Rear Loading



To Check Video Solution

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Innovative Use # 2 Using a Track (7th Axis)

Example #1 Roboturn Cell for Flywheel



Cell consists of 3 Nos. SL-30 Heavy Duty Turning Centres (A2-11 Spindles and 500 mm Turning Diameter) and 3 Nos. Drill Tap Centres. Robot is mounted on Linear Track (7th Axis) and Inspection after turning is done by Radio Frequency Touch Probes in Turrets.

To Check Video Solution

[CLICK HERE](#) 

Example #3 Roboturn Cell for Spindle



Cell consists of two SPM Spindles (Chamfering & Facing), Two OD Turning & Two Boring Spindles. Robot is mounted on a Linear Track (7th Axis) with Rapid Traverse upto 100 m/min. Cell has two **SmartCorrect** Gauging Stations for OD & Bore measurement & auto-correction.

To Check Video Solution

[CLICK HERE](#) 

Innovative Use # 3 Cleaning, Washing, Deburring & Measuring.



To Check Video Solution

[CLICK HERE](#) 

Innovative Use # 4 Roboturn Line Cells & Works

Example #1 Roboturn Line For Tulip



Line consists of TWO Cells operated by two Robots. First Cell with 4 Spindles for OP 10 and second Cell with two Spindles for OP 20. Each Cell has a **SmartCorrect** Gauging Station.

To Check Video Solution

CLICK HERE 

Example #2 Roboturn Lines for Piston Insert



The line consists of 6 Nos. Spindles (3 Nos. Twinturn), a conveyor running end to end, 2 Nos. Robots & 2 Nos. **SmartCorrect** Gauging Stations. Input material is CI Tubes and finish Turned & inspected Piston Inserts leave the line.

To Check Video Solution

CLICK HERE 

Example #3 Roboturn Line for Motorcycle Crankshaft.



Line consists of TWO Cells operated by one Robots. First Cell with 4 Spindles for OP 10 and second Cell with two Spindles for OP 20. Each Cell has a **SmartCorrect** Gauging Station.

To Check Video Solution

CLICK HERE 

Example #4

Flexible Automated cell for Gear Blank.



Cell consists of 3 Nos. Spindles (1 No. Twinturn 8TT and 1 No. Fortius) with Twinturn doing OP 10 on both Spindle & OP 20 on Fortius machine. Infeed is through Slatted Conveyor and jobs are inspected & sizes corrected with **SmartCorrect** Gauging Station.

To Check Video Solution

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