





# AUTOMATION SOLUTIONS

Automated Machining Solutions Designed for You

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# PEERLESS INDUSTRY EXPERTISE. ADVANCED TECHNOLOGY. TIRELESS SERVICE AND SUPPORT.

Scale the production with unattended or lightly attended machining. Let the solution manage your redundant tooling, end-of-arm tooling, and infeed/outfeed systems so employees can dedicate their time to address more complex and valuable tasks.

The advantages of Methods automation begin, flourish, and succeed with people. Methods Machine Tools has the knowledge, experience, and dedication to achieve the highest levels of customer satisfaction so our solutions ideally fit your business. Our team of CNC automation experts and engineers craft end-to-end solutions from concept and design to integration and testing. The majority of our automation solutions are supplied from a single source, lowering operating costs and creating a quality, uniform solution you can trust.

Methods

ANUC

ALL



# DISCOVER AUTOMATION

CNC automation services from Methods improve machining quality and production efficiencies for manufacturers, lowering your operating costs and maximizing your ROI.



# AUTOMATED MACHINING SOLUTIONS DESIGNED FOR YOU

Nothing about automation is off-the-shelf, and no two machine shops are exactly alike. That's why our dedicated automation experts immerse themselves in your manufacturing environment to understand your unique challenges before designing automated solutions that focus on your specific business goals.

The result: More opportunities for your CNC machining business to increase capacity, revenue, and profit margins, so you can say "Yes" to more jobs.

# CNC AUTOMATION THAT IMPROVES PRODUCTIVITY AND LOWERS OPERATING COSTS

Methods' engineering team designs highly customized automation solutions to create new efficiencies and produce the most value and ROI for your manufacturing operations.

We strategically integrate automation into your machining processes to ensure your Methods solution delivers immediate success and profitability through machine tending, gauging, and other secondary operations.

# OUR EXPERTS SUPPORT YOU FROM BEGINNING TO END

Our team of automation experts collaborates with you, from initial planning and selecting the right machines from our selection of world-class brands, to work-process design and application engineering, to the final on-site installation and proof of concept and capability.

Located across the U.S., our comprehensive team of design engineers, control engineers, fluid engineers, integration/assembly engineers, field service/installation engineers, electrical/ mechanical engineers, and machinists handle every phase of your automated machine implementation.

Once your automated solution is up and running, Methods provides ongoing, highly responsive service and support to ensure your solution stays up and continues delivering the quality and results you expect.



# ADDITIONAL METHODS SERVICES

Application Engineering

Preventative Maintenance

Integration CNC Training Support Installation Spindle Repair



## Methods

# PLUS-K & PLUS-K60 Designed for peace of mind.

Maximize your RoboDrill's potential with the Plus-K and Plus-K60. The automation solutions are powered by a FANUC robot that loads tools from the storage rack and stocks workpieces in the rotary carousel. The robot reduces setup times by gripping a standard feature on each component, making the solutions easily configurable and perfect for high-mix, low volume jobs.

# PALLET SCHEDULING MADE EASY

The Plus-K and Plus-K60 are equipped with a simple pallet scheduling system embedded into the control. This feature allows you to set pallet priority and see each pallet's status directly from the control.



# MORE TOOLS, MORE PARTS, **MORE CAPABILITIES**

Methods

Both automation solutions are equipped with enhanced tool racks easily accessible through a side panel, enabling operators to change tools and pallets without interrupting work in progress. The racks are easily accessible through a side door, shaving precious seconds off your production time.

The Plus-K60 features a carousel designed to hold 60 workpiece carriers. If the 65 tools on the Plus-K60 is not enough, the Plus-K is equipped with a configurable carousel that can be outfitted to hold rows of tools and workpiece carriers.

# PLUS-K

- 44 tool positions
- 36 workpiece positions
- Extra carousel rows for additional tools or part positions
- Multiple configurations with capacity
- up to 160 tools

# PLUS-K & PLUS-K60 SPECIFICATIONS

Max Weight of Part and Workpiece Max Part and Workpiece Carrier Size Outside Dimensions of Plus-K/K60 Weight of Plus-K/K60 Zero Point Clamping System



# PLUS-K60

- 44 tool positions
- 64 tools max. in system
- 60 workpiece positions

11 lbs (5 kg)

4.72" x 7.08" (120 mm x 180 mm)

67" x 30 x 83" (1,700 mm x 760 mm x 2,100 mm)

1,200 lbs (550 kg)

Lang Quick Point 52

## **Methods**

# **PLUS BIG-K** More pallets, more tools, more capabilities.

Automate your medium-bed RoboDrill for sustained periods of unattended machining. The Plus Big-K features an extraordinary amount of tools and pallets, offering you the greatest capacity for automation and unmanned machining.

# **NEW ROBOT, NEW CAPABILITIES**

The heart of the Plus Big-K is FANUC's M-20iB/25. This next-generation robot features a lightweight upper arm and wrist with advanced servos, enabling faster cycles and better throughput.





# **PRACTICAL PALLET STRUCTURE**

Stock your cell with a variety of pallets and vises offered by Methods. The Plus Big-K can be loaded with up to 120 pallets using a 52 mm clamping pattern. Additionally, depending on the positions used, the pallets can be configured to hold parts up to 250 mm in diameter.

# Numerous pallet configurations

• Up to 120 pallets

# **PLUS BIG-K SPECIFICATIONS**

Featured Robot	
Number of Extra Tools	Fou
Max Pallet Size	120 pallets: 4.9" 60 pallets: 9.8"
Maximum Pallet Weight	



Up to 280 tools

Fanuc M-20iB/25 Robot

r rows of 70 tools, 280 tools total

" diameter x 9.6" height (125 mm x 245 mm) diameter x 9.6" height (250 mm x 245 mm)

44 lbs (20 kg)

## **∺**Methods

# **PLUS-E** Scaling up, not out, For mid-to-high volume work.

Turn your RoboDrill into a mid-to-high volume workhorse that runs unattended with the Plus-E automation solution. The Plus-E expands the capacity of the RoboDrill with a drawer system without sacrificing floor space.

# ELEVATE YOUR ROBODRILL'S CAPACITY

The automation solution adds height to a RoboDrill and only 30.0" to the width, saving valuable space on your floor. Adjusting the distance between each pallet allows you to maximize the number of pallets in the elevator.





# **PRACTICAL INFEED SOLUTION**

Load, machine, and change various big and heavy parts with ease. Ample, aluminum master pallets— each spanning 15.7" x 23.6" (400 mm x 600 mm)—can be machined directly to hold parts or configured to hold a replace insert. This allows for easy change-over between jobs. Solution comes standard with five (5) pallets.



# **ROBODRILL PLUS-E OFFERS**

- Reconfigurable pallet spacing in 10 mm increments:
- -32 pallets: 0.75" (20 mm) between pallets
- -19 pallets 1.5" (40 mm) between pallets
- -8 pallets 4.25" (110 mm) between pallets

# **PLUS-E SPECIFICATIONS**

Max Weight of Part	
Max Pallet Storage Height	
Pallet Size	
External Dimensions	67″
Weight	

n increments: allets ats llets

3 lbs (0.875 kg)

36.6"(390 mm)

15.7" x 23.6" (400 mm x 600 mm)

" x 30" x 83" (1,700 mm x 760 mm x 2,100 mm)

1,200 lbs (550 kg)

## Methods

# **JOBSHOP CELL COLLABORATIVE** Helping your operators save time.

The JobShop Cell Collaborative is an innovative, collaborative robotic automation solution designed by Methods to allow easy loading and unloading of parts into your machine tools.

This system will enable machine shops to start introducing automated CNC machining solutions without making a large investment or purchasing new machine tools for the shop.

# **COLLABORATION MADE SIMPLE**

JobShop Cell Collaborative The was designed for ease of use from implementation, to setup, to operation with little-to-no prior robotics experience required. Operators can be up and running within hours.





• 2-Jaw or 3-Jaw OnRobot gripper setup Tool storage area Ethernet/IP, DCS Position & Speed Check, Infeed/Outfeed pallet storage system Karel, and Math Function software options

# **CONSUMER-LIKE CONTROL**

Methods designed a unique, intuitive user interface with a consumer mobile device experience for quick robot set up. The approachable interface guides the operator to choose their desired settings and operations, making the robot arm ready for you within minutes.

# JOBSHOP CELL COLLABORATIVE SPECIFICATIONS

Max Pallet Size	19.25" X 29.25"	
Robot Payload	22 lbs (10kg) Payload	
Floor Space (L x W)	47" X 30"	
FANUC Robot	CRX-10iA/L	
Robot Reach	55" (1418mm)	

# Methods MB 650U AMP Automatic manufacturing package (AMP)

Bring instant precision and automation into your shop, reduce manual intervention, and improve throughput and uptime with the MB 650U AMP. The solution combines the accuracy and speed of Methods' 5-axis MB 650U machining center and the convenience of the Indumatik UL300 automatic pallet changer (APC).

# **APC POWER**

The compact APC measures just 82.68" x 82.68" (2,100 mm x 2,100 mm). Combined with an expansive work envelope, the MB 650U AMP is a comprehensive, versatile manufacturing workhorse that can machine a variety of workpieces. **With six or eight pallet arrangements**, the MB 650U AMP can be configured to your specific needs.



# LARGE WORKPIECES, SMALL FOOTPRINT

The Indumatik APC is designed to handle large, heavy workpieces (up to 500 pounds) in a small footprint managed through a simple, touch-screen control. The out-ofbox design enables integration with the MB650U, 5-axis platform with no additional assembly required.

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# - MB 650U AMP FEATURES

- Six or eight pallet configurations
- Simple, dedicated cell control

# **MB 650U AMP SPECIFICATIONS**

Spindle	25 hors
Number of ATC Positions	
Max Pallet Workpiece Size	6 pallet 8 pallets
Max Workpiece Weight	



- Ergonomic load/unload station
- Compact footprint

epower (hp), 106 ft-lbs of torque, 15,000 rpm

# 48/60

ts: 19.7" x 19.7" (500 mm x 500 mm) s: 14.7" x 14.7" (400 mm x 400 mm)

6 pallets: 425 lbs (193 kg) 8 pallets: 500 lbs (227 kg)

# ROBOIOR

# **TURN-ASSIST 200i & 270i**

Standard Automation For 👼 Nakamura-Tome

# **INSTANT EFFIENCY**, **HIGHER OPERABILITY**

Open-floor setup and area sensors maximize operator safety and accessibility, while a preprogrammable FANUC robot loads blanks and unloads finished parts from the stocking table. A complete solution for high-mix/low-volume and/or mid-volume with frequent changeovers on round workpieces, customers.

# **ACHIEVE ROI ON DAY 1**

Methods provides the machine, the options, the automation solution, and the interface, along with the installation, training and support. Customers have the advantage of working with one supplier for the entire technology and experience stack.





# **DESIGNED FOR** LATHE AUTOMATION

Turn-Assist is designed to be implemented and run by operators of any skill level. With a simple tablet-style HMI and standard Ethernet IP interface, and integrated and automatic air nozzle to discard chips and coolant away from the workholding, shops gain a user-friendly, reliable automation solution ready for Day 1 production with minimal operator upskilling.

# **ROBOJOB TURN-ASSIST SPECIFICATIONS**

Available Part Diameters	<b>200i/M10:</b> 0.98 in 7.87 in. <b>270i/M25:</b> 0.98 in 10.63 in.	
Available Part Lengths	<b>200i/M10:</b> 0.20 in 7.87 in. <b>270i/M25:</b> 0.20 in 9.84 in.	
Maximum Stacking Height	<b>200i/M10:</b> 13.7 in.	<b>270i/M25:</b> 13.7 in.
Maximum Stacking Weight	200i/M10: 660 lbs	270i/M25: 990 lbs
Maximum Robot Carrying Weight	<b>200i/M10:</b> 15 lbs	270i/M25: 41 lbs

rd	•	Out-of-the-box automatic loading and
ne		unloading of blanks and finished parts
15		through the use of a FANUC robot.

# **SUCCESS STORY**

SMALL-BATCH MEDICAL SHOP EMBRACES METHODS AUTOMATION TO CAPTURE MARKET SHARE, TRIPLE THROUGHPUT

# **PROBLEM**

Ultradent wanted to increase production of its industry-leading Valo curing light. Each light required almost 50 minutes and three complex machining operations. The manufacturing setup resulted in the occasional spindle crash, hindering Ultradent's operations and output. Additionally, the company occasionally had to subcontract jobs to other machine shops to meet rising demand.

# SOLUTION

Ultradent reached out to Methods Machine Tools to move forward with installing two customized automation cells, each comprising an advanced FANUC RoboDrill, a FANUC robotic arm, and raw stock storage.

# RESULTS

- The RoboDrill cells run unattended for 16 hours a day, and completely lights-out on the weekends
- Significant improvement in the machining accuracy of the curing light housing with perfectly threaded, 12-millimeter blind holes
- Doubled machining capacity, capturing more market share
- Tripled throughput

Figuring out how to meet rising production demand can be deceptive. On the surface, it's a simple math problem: If you have one machine on the floor and it makes eight parts per day, and you need to produce 16 parts per day, just add another machine, right? Meeting demand in a consistent, cost-effective manner is a bit more complicated.

Meeting demand in a consistent, cost-effective manner is a bit more complicated. Sometimes it takes a little more due diligence to uncover the best way to increase throughput or meet rising demand.

The operations group at Ultradent Products Inc., a leading developer and manufacturer of high-tech dental materials and devices for the medical industry, faced such a problem. In 2017, the company sought to increase the production of its industry-leading Valo curing light, used by dental clinicians to cure dental composites, sealants, and various other chemistries.

# ROBODRILL REPEATABILITY IN ACTION

The RoboDrill cells run unattended for 16 hours a day and completely lightsout on the weekends. In addition to increased throughput and machine uptime, Ultradent has gained the desired repeatability thanks to the RoboDrill's rigid construction and precision.

Since implementing the RoboDrill and automation cell, Ultradent's quality assurance team has noticed a significant improvement in the machining accuracy of the curing light housing with perfectly threaded, 12-millimeter blind holes.

"The fact that the RoboDrill repeats on the threading and other features is pretty important to us," Marett said. "As we go through inspection data for thousands of units, we find that features don't move within a half a thousandth of an inch. Part of that is tooling, part of that is how the tooling is held and how the machine is built so it will repeat from position to position."

We've almost doubled our capacity since we came out of COVID, and we could not have done that without our third and fourth RoboDrill cells for sure.

Kevin Marett
 Engineering Manager
 Ultradent Products, Inc.



# UTILIZING AUTOMATION TO ACHIEVE GROWTH

Ultradent did more than just increase throughput machine uptime and improve repeatability – they captured more market share.

During the most tumultuous period of the COVID-19 pandemic, the automation cell, combined with Ultradent's ability to secure raw materials, allowed the company to continue machining. This enabled the company to capture additional market share while competitors lost production time due to sick leave or suspended operations caused by the pandemic.

# **SUCCESS STORY**

# JOB SHOP IMPLEMENTS 5-AXIS TECHNOLOGY, AUTOMATION SYSTEMS, TO ACHIEVE STRATEGIC GROWTH

## PROBLEM

After growing with Methods to implement 5-axis and multitasking technology, Operose founder Tyler Stilson wanted to increase his throughput with automation. His space at his at-home workshop was limited, and he needed something he could run lights-out.

# RESULTS

- The first Plus-K ran nearly nonstop for 13 months.
- The utilization rate exceeded 85%.
- Reduced downtime.



# SOLUTION

Methods recommended the RoboDrill Plus-K. Stilson had one installed at his at-home shop, then two others at his main facilities. Figuring out how to meet rising production demand can be deceptive. On the surface, it's a simple math problem: If you have one machine on the floor and it makes eight parts per day, and you need to produce 16 parts per day, just add another machine, right?

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# NEXT STOP: LIGHTS-OUT AUTOMATION WITH THE ROBODRILL PLUS-K

In the fall of 2019, Stilson began looking to test out equipment at the workshop in Mankato. Since it was his at-home lab, he needed the ability to load up a cell in the morning and collect perfect parts at the end of the day.

Given the size of the workshop and his preference for RoboDrill's ease of use and adaptability, the choice was simple: the RoboDrill Plus-K.

The system measures only 32" wide, making it the perfect fit for Stilson's shop. And, Methods enabled the robot to recognize a standard feature on the quick-change carrier, so there's no need to program the robot.

The first system was installed in Mankato in April 2020. The second followed in the Colorado Shop in January of 2021, and the third was installed about three months ago. They mainly produce aerospace and medical parts made from stainless steel or aluminum.

Being able to eliminate touch time and get more sides done with less handling made an incredible impact on our shop, it was a big leap.

> - Tyler Stilson Founder Operose Manufacturing



# CONTINUOUS PRODUCTION, CONTINUOUS GROWTH

There are other ways Methods' has helped Operose become more productive, Stilson said.

He recalled an issue on an older machine that occurred on a machine in 2010. It was the weekend, and the chances of getting the machine back up and running were slim.

Nevertheless, Stilson wanted to keep the issue at the forefront of his mind over the weekend, so he notified his Methods technician.

About 20 minutes later, the field service technician pulled up to Operose, with his son in tow.

# STANDARD & CUSTOM AUTOMATION SOLUTIONS

Let our work speak for itself.

My operators can now spend their time inspecting tools instead of manually changing tools and parts. We didn't have to shut down anything. It was a smooth transition.

> -Steve Dillon Vice President CDP Diamond Products

For our company to grow and flourish in the future, we need strong experts such as Methods that possess the strategic strength and vision to help transform machines and metal into business success

-Joe Ruicci Owner Gil-Mar Manufacturing



We welcome any challenge to help you integrate a standard or custom automation solution into your existing operations. We design, engineer, install, test, and service solutions for any business

We have more than 30 automation experts nationwide who get the job done.





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