FANUC

ROBODRILL α-D*i*B Series
Vertical Machining Centers

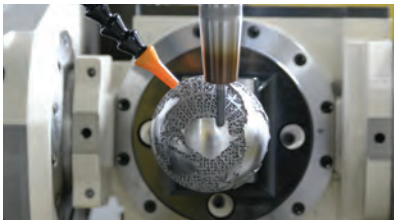
Exceptional Performance
Uncompromising Reliability

ADV Series

More of Everything!

Power - Rigidity - Speed - Capability

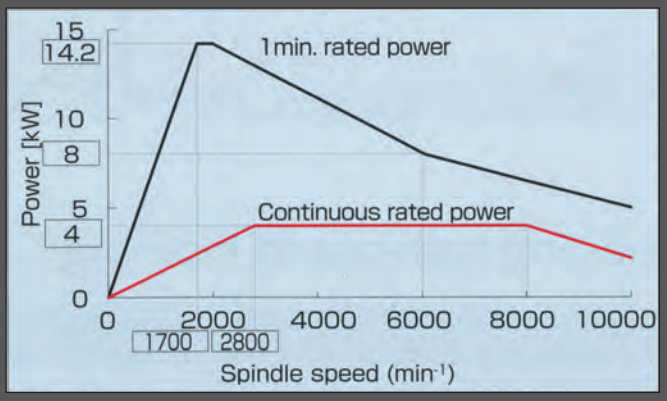
Feature	Unit	D21S*i*B5ADV	D21M*i*B5ADV	D21L*i*B5ADV
TRAVEL				
X-Axis	in (mm)	11.8 (300)	19.7 (500)	27.6 (700)
Y-Axis	in (mm)	11.8 (300)	15.7 (400)	15.7 (400)
Z-Axis	in (mm)	15.7 (400)	15.7 (400)	15.7 (400)
TABLE				
Table Size	in (mm)	24.8 x 13 (630 x 330)	25.6 x 15.7 (650 x 400)	33.5 x 16.1 (850 x 410)
Max. Table Load	lbs (kg)	441 (200)	882 (400)	
GENERAL				
Machine Weight	lbs (kg)	4,740 (2,150)	4,850 (2,200)	5,070 (2,300)
Floor Space	in (mm)	39.1 x 87.4 (995 x 2,220)	63.5 x 80.7 (1,615 x 2,050)	85.2 x 80.7 (2,165 x 2,050)
Height	in (mm)	88 (2,236)		
Controllable Axes	-	5		
Controller	-	31*i*-B5		



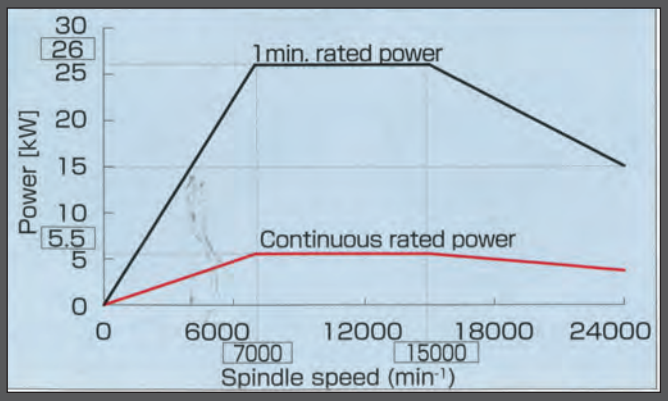
Up to 8,000 rpm Tapping

- Column Design Change, Better Clearance, More Ridged
- Longer Z-Axis Stroke 400 mm
- Servo Turret
- Greater Tool Weight Capacity 4 kg
- Up to 880 Table Load Capacity
- Increased Y-Axis Clearance to Column
- Improved Y & Z-Axis Way Covers
- Improved Spindle Head Cover
- Faster Tool Change Time 0.7 Tool-to-Tool 1.3 Chip-to-Chip
- Improved Electrical Cabinet Design
- Power Fail Backup Module Included
- 31*i*B5 *i*HMI Control, Touch Screen
- Smart Overlap Cycle Time Reduction Features
- 32,000,000 Pulse Encoders with Least Input Increment of 0.1 um Program Command
- Full 5-Axis Capable

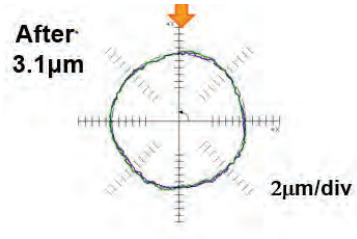
10,000 rpm



24,000 rpm



Feature	Unit	D21S*i*B5ADV	D21M*i*B5ADV	D21L*i*B5ADV
SPINDLE				
Spindle Speed	rpm	10,000 | 24,000		
Spindle Taper	-	BIG PLUS BBT-30		
Rigid Tapping Speed	-	6,000 | 8,000		
FEED RATE				
Rapid Traverse Rate	in/min (m/min)	2,125 (54)		
TOOLING / TURRET				
Tool Capacity	-	14 | 21		
Max. Tool Diameter	in (mm)	3.15 (80)		
Max. Tool Length	in (mm)	7.5 (190)	9.8 (250)	
Max. Tool Weight	lbs (kg)	8.8 (4)		
Tool-to-Tool Time	sec	0.7		
Chip-to-Chip Time	sec	1.3		



Ultra Precise 32,000,000 Pulse Encoders

PC2
Pallet Changer

Receiver base with chip flush ensures change repeatability

Pneumatic and Hydraulic fixture capable

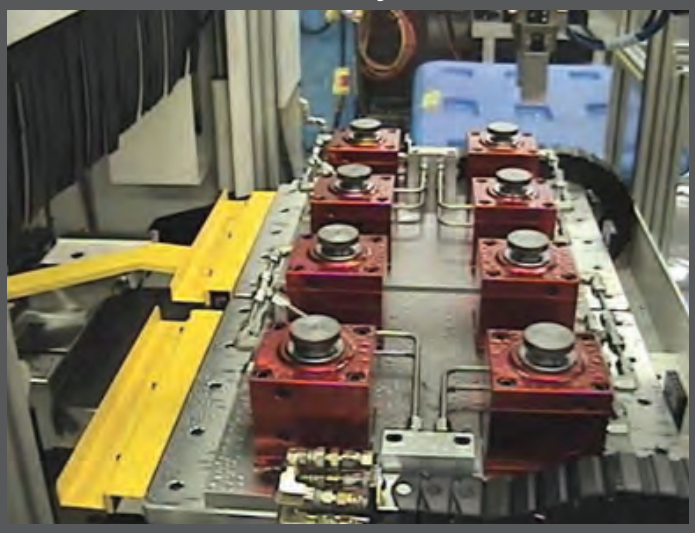
10,000 or 24,000 rpm spindle

Dual pallet shuttle

2-Pallet Shuttle Design

The flexibility of a stand alone machine with the productivity of a pallet shuttle

Pneumatic and Hydraulic Fixtures



Feature	Unit	D21L*i*B5$_{ADV}$
TRAVEL		
X-Axis	in (mm)	27.6 (700)
Y-Axis	in (mm)	15.7 (400)
Z-Axis	in (mm)	15.7 (400)
TABLE / PC2		
Table Size	in (mm)	33.5 x 16.1 (850 x 410)
Pallet Size	in (mm)	27.5 x 15.4 (700 x 390)
Pallet Load Capacity	lbs (kg)	220 (100)
Pallet Change Time	sec	7
Pallet Change Repeatability		± 0.00022
GENERAL		
Machine Weight	lbs (kg)	4,620 (2,096)
Floor Space	in (mm)	85.2 x 80.7 (2,165 x 2,050)
Controllable Axes	-	5
Controller	-	31*i*-B5

Feature	Unit	D21L*i*B5$_{ADV}$
SPINDLE		
Spindle Taper	-	BIG-PLUS BBT-30
Spindle Option 1	hp / rpm	18.7 / 10,000
Spindle Option 2	hp / rpm	34.8 / 24,000
FEED RATE		
Rapid Traverse Rate	in/min (m/min)	2,125 (54)
TOOLING / TURRET		
Tool Capacity	-	21
Max. Tool Diameter	in (mm)	3.15 (80)
Max. Tool Length	in (mm)	9.8 (250)
Max. Tool Weight	lbs (kg)	8.8 (4)
Tool-to-Tool Change Time	sec	0.7

Optional Features

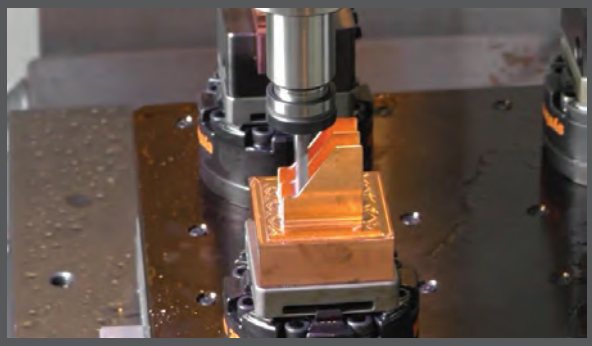
- Rotary tables & indexers
- Pneumatic fixtures
- Robotic loading
- Methods turnkey

Trodemaster

Intigrated 1,000 CFM Torit Downflo® Oval dust collector provides up to 25% more filtration capacity than other same-sized cartridge collectors

FANUC 31*i*-B5 Nano Control with ultra precise 32 million pulse / rev encoder

24,000 rpm 30 taper BIG-PLUS spindle



Feature	Unit	TrodeMaster
SPINDLE		
Spindle Taper	-	BIG-PLUS BBT-30
Spindle Speed	rpm	24,000
FEEDRATE		
Rapid Traverse Rate	in / min	2,125
Acceleration	g	1.5
ATC		
ATC type	-	14 / 21
Max. Tool Weight	lbs	8.8 (4)
Tool-to-Tool Time	sec	0.7
Chip-to-Chip time	sec	1.3
Max. Tool Length	in	9.8

Full Torit dust collection system

The smart choice for high precision 3D graphite machining

- An Economical and Complete Electrode and Composite Machining System
- 4/5-Axis Capable
- Half the price of Competitive Machines
- (Graphite, Copper, Composites)

Feature	Unit	D21S*i*B5ADV	D21M*i*B5ADV	D21L*i*B5ADV
TRAVEL				
X-Axis	in (mm)	11.8 (300)	19.7 (500)	27.6 (700)
Y-Axis	in (mm)	11.8 (300)	15.7 (400)	15.7 (400)
Z-Axis	in (mm)	15.7 (400)	15.7 (400)	15.7 (400)
TABLE				
Table Size	in (mm)	24.8 x 13 (630 x 330)	25.6 x 15.7 (650 x 400)	33.5 x 16.1 (850 x 410)
Max. Table Load	lbs (kg)	441 (200)	882 (400)	
GENERAL				
Machine Weight	lbs (kg)	4,290 (1,946)	4,400 (1,996)	4,620 (2,096)
Floor Space	in (mm)	39.1 x 87.4 (995 x 2,220)	63.5 x 80.7 (1,615 x 2,050)	85.2 x 80.7 (2,165 x 2,050)
Height	in (mm)	88 (2,236)		
Controllable Axes	-	5		
Controller	-	31*i*-B5		

Optional Features

- Rotary tables & indexers
- Pneumatic fixtures
- Robotic loading
- Methods turnkey

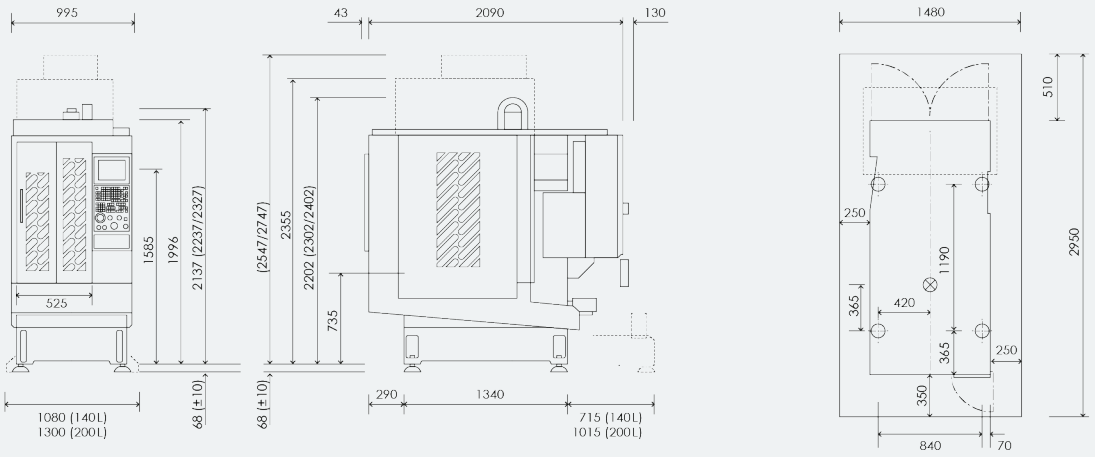
FANUC Control

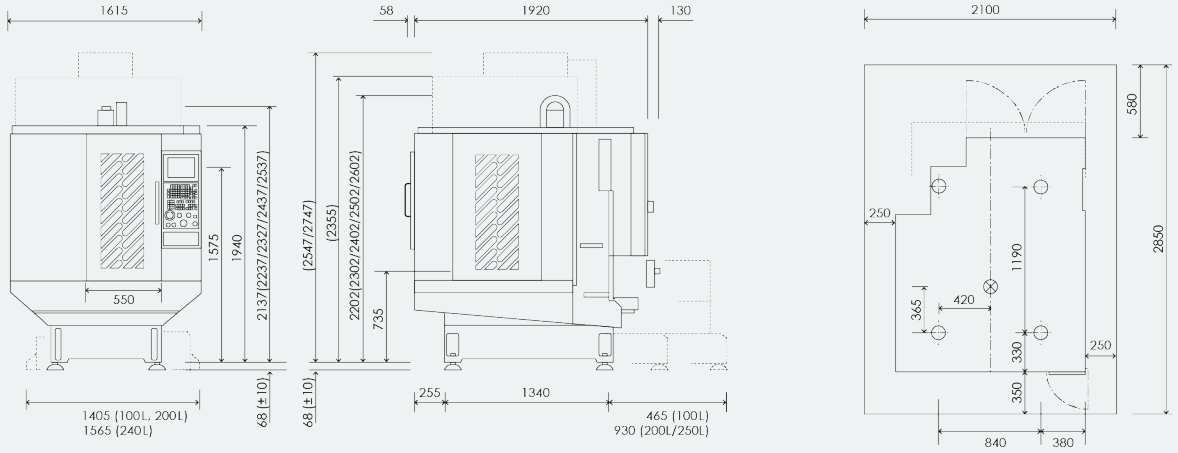
The world's most reliable CNC FANUC 31*i*-B5 is at the core of ROBODRILL. User-friendly and easy to program, it contains twenty easy-to-configure M-codes to control additional devices. Further customization is achievable via the custom PMC function.

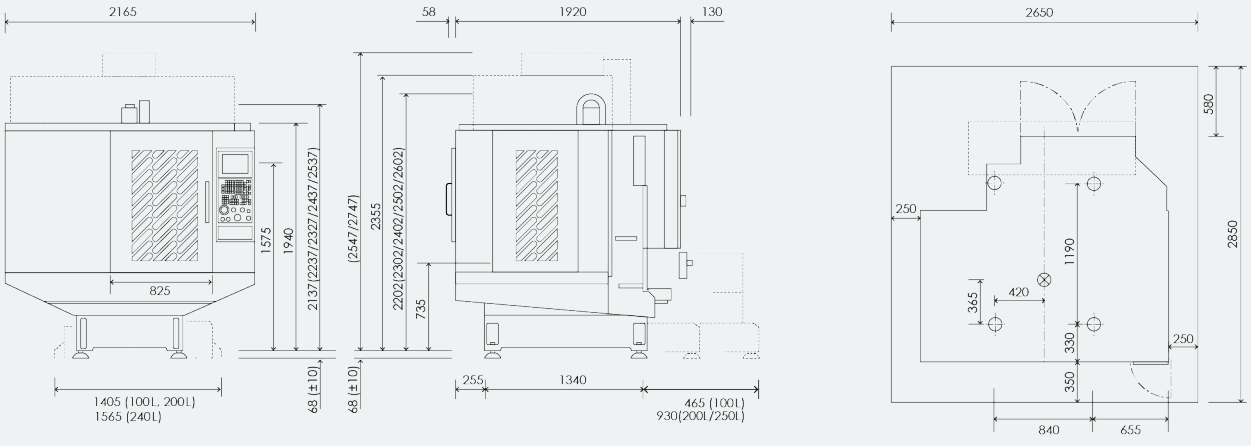
- CF Card
- USB
- easy-to-clean membrane keyboard
- manual pulse generator

- 10.4" color display
- intuitive *i*HMI screen
- easy data input and minimal keypad entry
- improved interface to robot operation screen
- easy auto programming
- easy-to-use control screen
- supports multiple languages
- precise predictive maintenance

Floor Plans


995
43
2090
130
1480
1585
1996
2137 (2237/2327)
525
(2547/2747)
2355
2202 (2302/2402)
735
510
250
1190
2950
365
420
250
350
1080 (140L)
1300 (200L)
68 (±10)
290
1340
715 (140L)
1015 (200L)
840
70


1615
58
1920
130
2100
1575
1940
2137(2237/2327/2437/2537)
550
(2547/2747)
(2355)
2202(2302/2402/2502/2602)
735
580
250
1190
2850
365
420
330
250
350
1405 (100L, 200L)
1565 (240L)
68 (±10)
255
1340
465 (100L)
930 (200L/250L)
840
380


2165
58
1920
130
2650
1575
1940
2137(2237/2327/2437/2537)
825
(2547/2747)
2355
2202(2302/2402/2502/2602)
735
580
250
1190
2850
365
420
330
250
350
1405 (100L, 200L)
1565 (240L)
68 (±10)
255
1340
465 (100L)
930(200L/250L)
840
655

Options

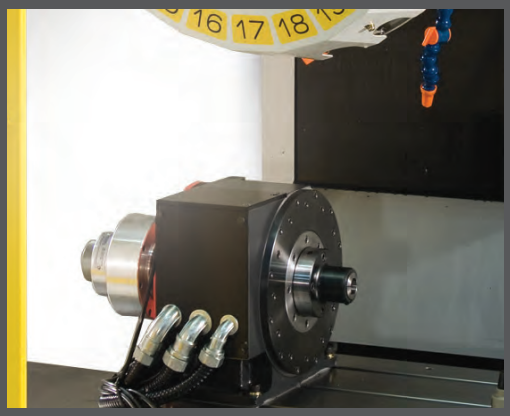
DDR / DDR-T

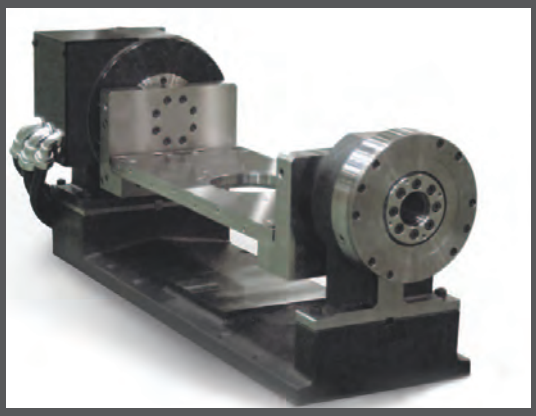
The FANUC DDR is a full fourth-axis table designed specifically to complement the speed and versatility of the ROBODRILL. Capable of 200 rpm, the FANUC DDR can unclamp, rotate 180°, and re-clamp in less than 0.3 seconds.

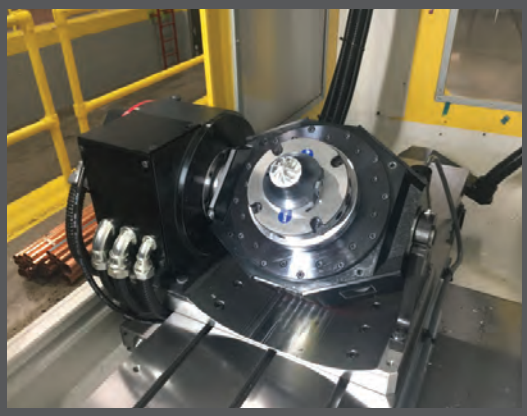
Virtually backlash-free, the DDR's direct drive motor has no gears to wear out or sustain damage. If bumped, it can be easily tuned to original specifications.

A true milling fourth axis, the DDR has a part loading capacity of 220 lb and 369 ft-lb of torque, enough to handle even the most difficult applications.

With its unique combination of speed, strength, and reliability, the DDR is ideal for small volume job shops or OEMs making millions of parts. Priced at thousands of dollars less than comparable fourth-axis tables, it is an exceptional value.







Simultaneous 4 or 5 Axis Machining

(1) or (2) additional axis control can be added to the FANUC 31*i*-B5 to enable simultaneous contour machining. Utilizing an optional FANUC DDR direct drive rotary table, or conventional 4th or 4th and 5th Axis rotary tables, the ROBODRILL becomes a high speed 4/5-Axis VMC.

Other Options

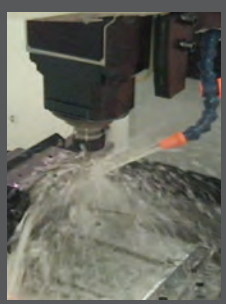
Coolant through spindle

Chip conveyor

Auto door

Part probe

Laser tool setter



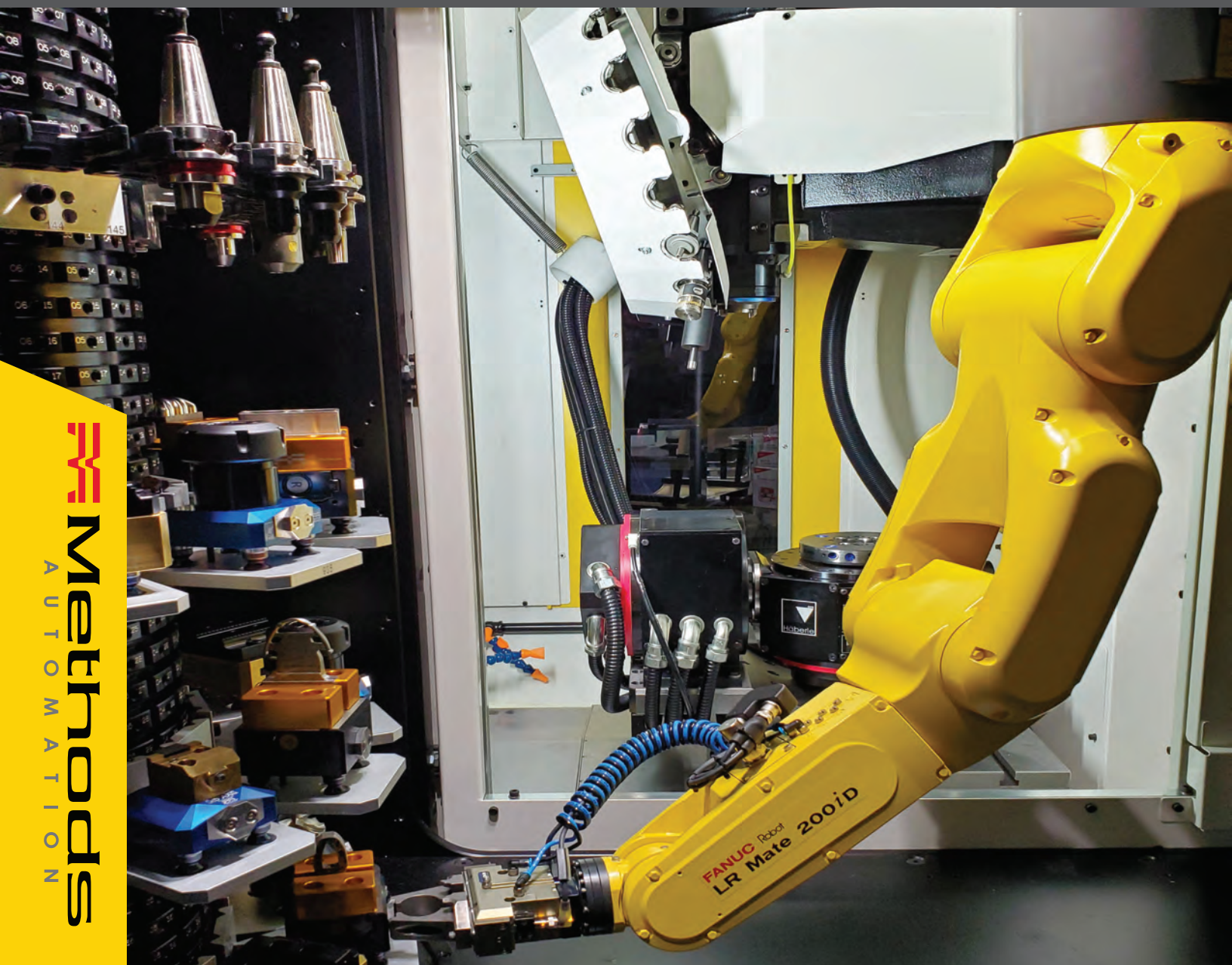
High pressure coolant system

Standard Features

- 21 Position, Bi-Directional Tool Changer
- “Quick” ATC Recovery System
- 5,000,000 Duty Cycle Time
- Rigid Tapping up to 6,000 / 8,000
- “Quick” Tap Recovery System
- High Speed Reverse Tapping
- Thread Milling
- Helical and Linear Interpolation
- 1 Millisecond Servo Response Time
- Three Axis Simultaneous Expandable to Five Axis Simultaneous (Advanced)
- Custom PMC
- Simultaneous ATC / Table Positioning
- 1,889 or 2,125 ipm Rapid Rate – X, Y, Z Axes
- Feed Rates to 1,181 ipm X, Y, Z
- Multi Step Skip
- AI Contour Control I with Upgrade to AICC II 1,000 Block Option
- Nano CNC System
- Ultra Precise 32,000,000 Pulses/Rev encoders
- 1.5 G Acceleration
- Thermal Growth Compensation
- 1,000 Registerable Programs
- Smart Backlash Compensation
- HRV3 Plus
- Tool Compensation Memory C
- Tool Offset Pairs 200 Pairs
- Part Program Storage 2 mb
- 6 + 48 Work Offsets
- Coordinate System Rotation (G68.G69)
- Coordinate System Setting (G92)
- Custom Macro B
- Canned Cycles for Drilling (G73, G74, G81~G89/G80)
- Manual Handle Feed
- Coolant System - 200 liter coolant tank and Spindle Coolant Nozzle
- Coolant & Chip Splash Guard
- 1,000 psi coolant thru prepped spindle
- Skip Function (G31)
- Background Editing
- Dynamic Graphic Display
- On Screen Display of Spindle ‘rpm’ and ‘Load’ Meters including cutting time count down
- Alpha Numeric Keyboard
- Automatic Lubrication System
- Periodic Maintenance Management
- Quick Side (Operator Interface)
- Manual Guide for Milling (Shop Floor Programming System)
- Manuals (1) Each: Operators, Maintenance, Parts, Operators CNC, & Maintenance CNC
- Interior Work Light - LED STYLE
- 2nd Control Slot

Plus-K | Plus-K60

The Plus-K and Plus-K60 is a pre-engineered robotic automation system for storing, loading, and managing workpieces/pallets and additional tools for the medium bed Advanced FANUC ROBODRILL. Two different versions allow adding up to 60 workpiece/pallets and/or over 100 tools depending on the configuration. The low to no setup makes this system very attractive to high mix and mid to low volume work.



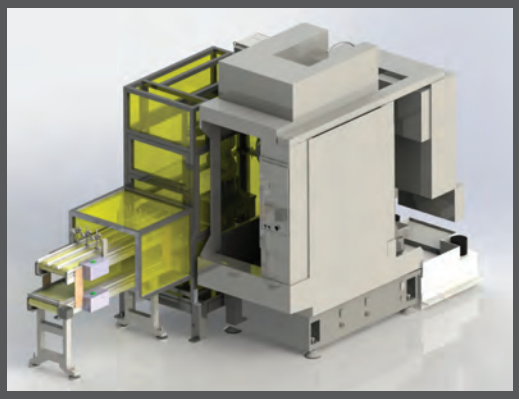
Methods AUTOMATION

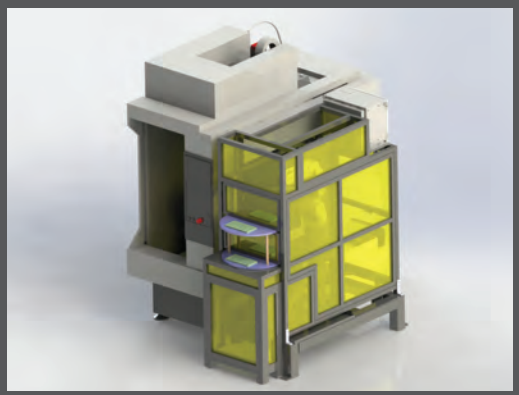
Plus-E

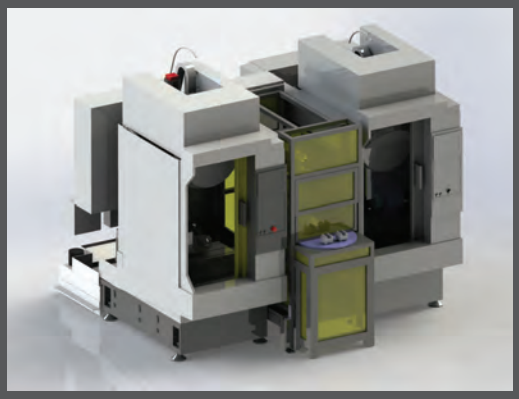
The Plus-E is a pre-engineered elevator based robotic automation system for a FANUC ROBODRILL. This system utilizing an elevator to manipulate a stack of pallets which in turn is accessed by the robot for loading and unloading into a FANUC ROBODRILL. Available with up to 32 pallets this system offers a lot of room for incoming parts and lends itself well to mid to high volume work.

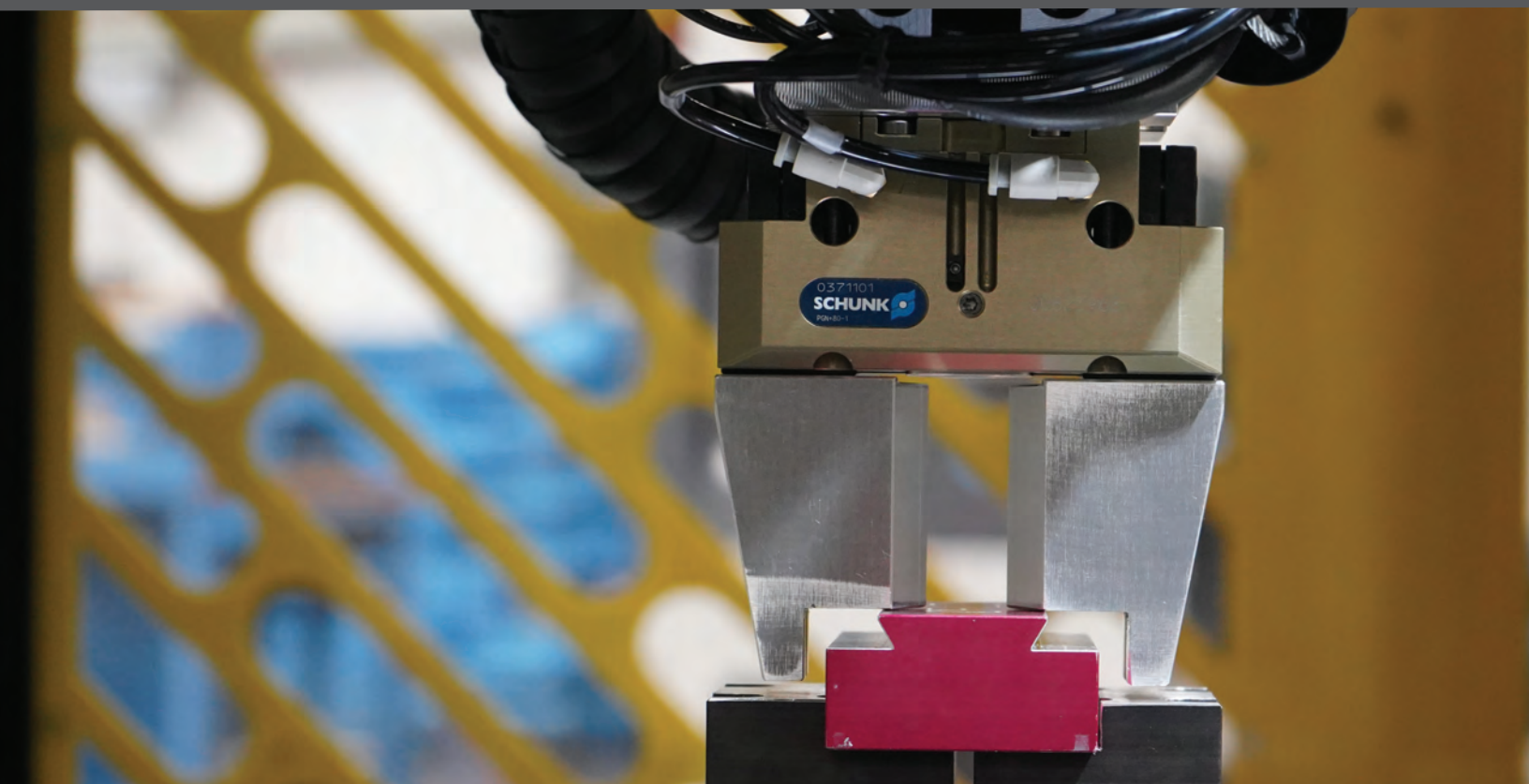
JSC-Pro

The JSC-Pro is a pre-engineered automation system for the FANUC ROBODRILL D21S*i*B5$_{ADV}$ with several different infeed/outfeed solutions available. The JSC-Pro can be configured with a lazy susan type two station exchange system holding vises or pallets, an over/under infeed and outfeed conveyor or even an interface for a vibratory feeder.



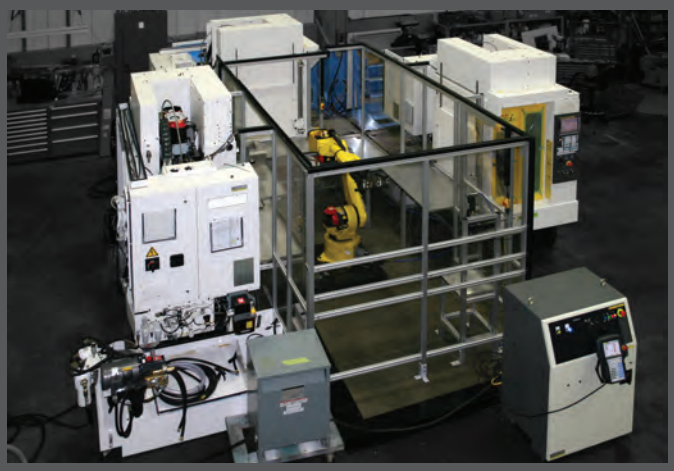


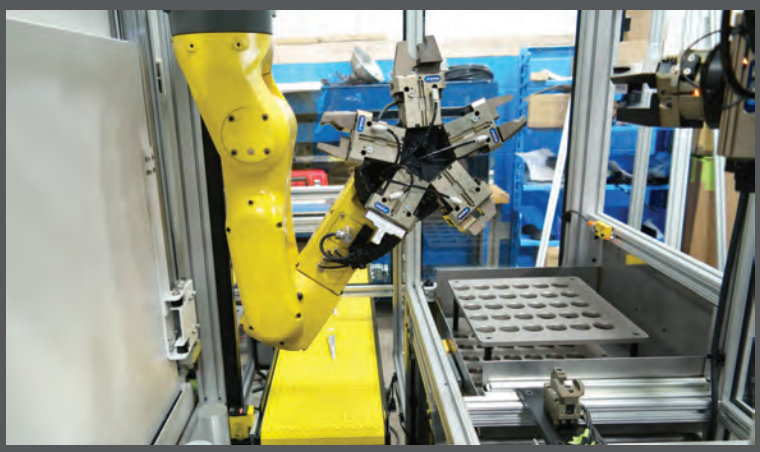




Custom Automation

Sometimes there is not an off the shelf solution for your automation needs. In addition to the ever growing offering of standard automation, Methods Automation has a full team to design and build customized solutions to fit your requirements. This could be multiple machines, non-standard part handling, creative robot end of arm tooling, or post machining ancillary operations such as cleaning, measuring or deburring. Please refer to our Methods Automation brochure for more details on what Methods Automation can do for you.





The JobShop Cell is a re-configurable automation platform for the FANUC ROBODRILL. While automation is well known for its effectiveness in high volume, the ROBODRILL JobShop Cell was designed from the ground up to be flexible, easy to run, and easy to set up. The JobShop Cell comes in multiple machine versions with a lot of different choices for infeed/outfeed and end of arm tooling. Whether set up to run hundreds of thousands of parts or configured to be changed over every day, the ROBODRILL JobShop cell has been the automation choice of manufacturing professionals for years.

For more information see Automation Brochure

FANUC

When you invest in a FANUC ROBODRILL machine, you get the best of two worlds.

First your machine is a FANUC - a name known the world over for innovation in cutting, CNC controls, robotics and automation.

Second your machine is supported by Methods - A company that since 1958 has been developing innovative solutions to customer production needs.

With eight technical centers throughout the Unites States, a national network of knowledgeable dealers, Methods can provide the technical support, training, and service you need to maximize the productivity of your FANUC ROBODRILL.

About Methods

Achieve More with Methods

Founded in 1958, with three employees and a few refurbished machines, Methods Machine Tools, Inc. has grown into one of the largest, most innovative precision machine tools importers in North America. With over 300 employees, eight sales and technology centers, and over 40,000 machines installed throughout the United States, Canada and Mexico, Methods supplies leading-edge precision machine tools and solutions. The founder Mr. Clement McIver, Sr., established principles from the company's beginning that continue to set Methods apart from conventional importers or distributors. "Anyone can sell a machine," said the company's late founder, "but not everyone provides the extra effort that makes a difference in the company's bottom line."

Specifications subject to changes without notice.

Showrooms and Technical Centers
Boston ■ Charlotte ■ Chicago ■ Detroit
Los Angeles ■ Memphis ■ Phoenix ■ San Francisco

Methods
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