

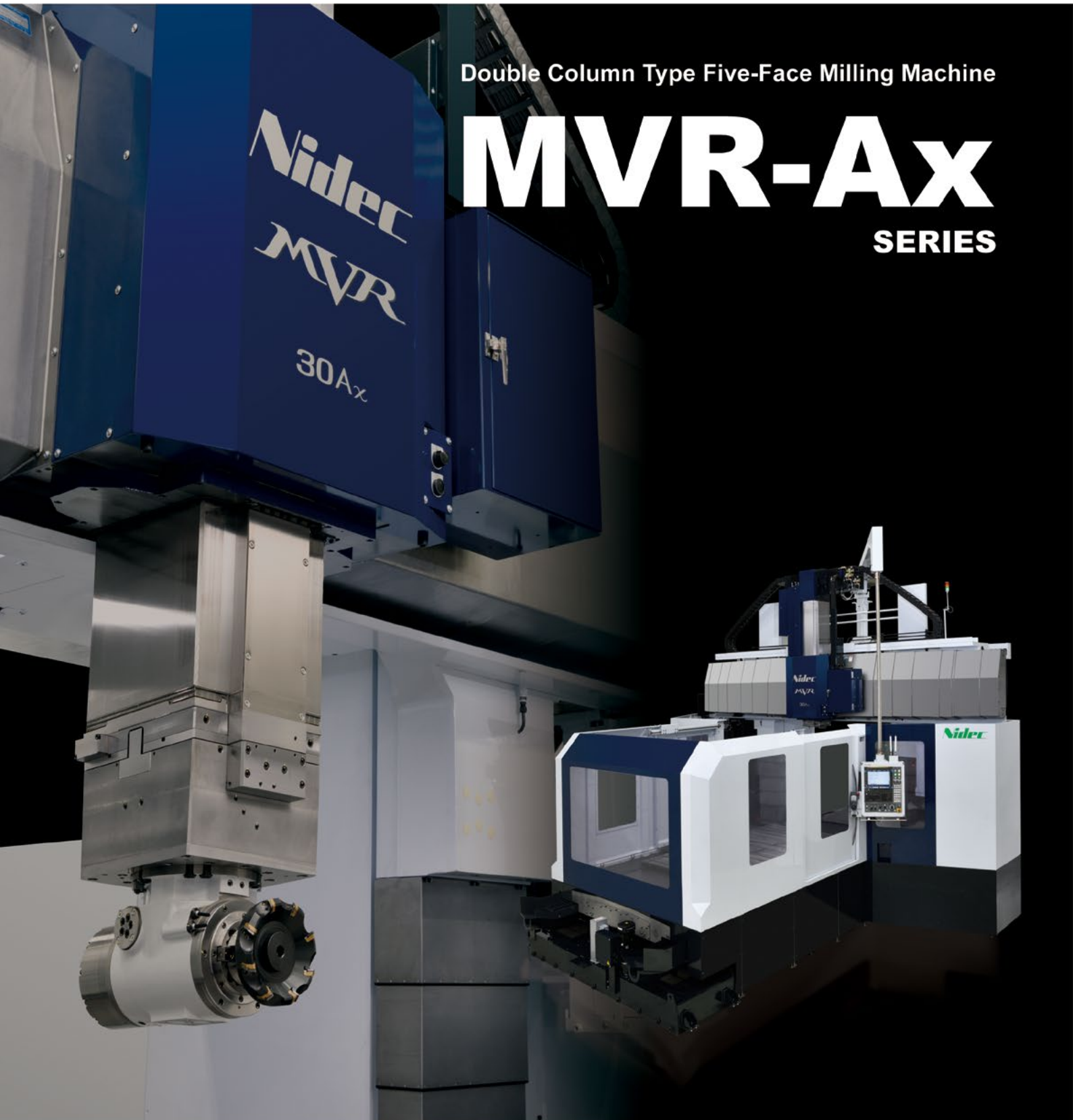
Nidec

All for dreams

Double Column Type Five-Face Milling Machine

MVR-Ax

SERIES



NIDEC MACHINE TOOL CORPORATION

www.nidec.com/en/nidec-machinetool/

Standard machines to meet the diverse needs for machining large components

To improve customers' productivity
based on the concept,
"excellent machining, fast, and easy to operate"

The MVR-Ax series can apply many optional functions,
- ranging from a table size that can accommodate large-size
workpieces to an abundance of attachments to the main axis
to automated functions such as an automatic palette changer
- for a variety of users' applications.



NOTE : The photo includes optional equipment

Best in class heavy duty machining capability

Same conditions for both vertical and horizontal axes.
Powerful heavy cutting is possible.

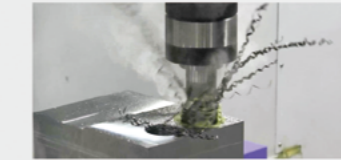


Milling

Material : Rolled steel for general structure (SS400)
Tool diameter : $\phi 160\text{mm}$ 6.3in
Cutting width : 130mm 5.1in
Spindle speed : 420min⁻¹
Cutting depth : 6mm 0.236in
Feed rate : 1,182mm/min 46.5in
Chip volume : 922cc/min 56.3cu.in/

Same conditions for both vertical and horizontal axes.
Efficient processing using large diameter taps.

M64 Tapping
Material Steel(S45C)



Spindle speed : 50mm⁻¹
Feed rate : 300mm/min 11.8in

Right angle head M64 Tapping
Material Steel(S45C)

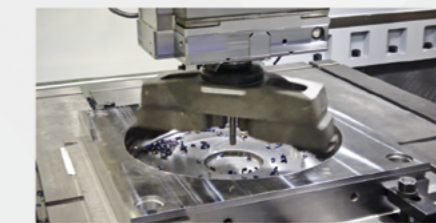


Spindle speed : 50mm⁻¹
Feed rate : 300mm/min 11.8in

The powerful gear drive type spindle achieves fast large diameter boring.

Total mechanical rigidity withstands large-diameter boring

$\phi 563\text{ mm}$ 22.2in Large-diameter Boring

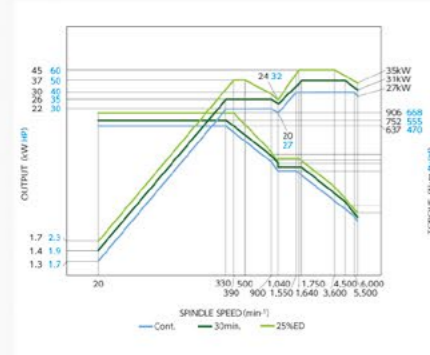


Material Steel (S45C)

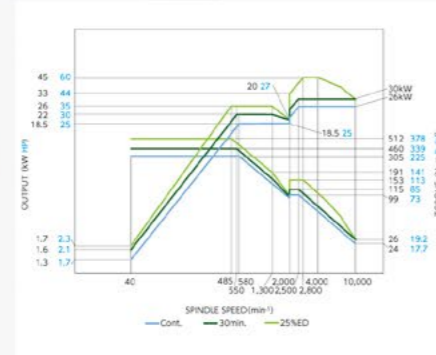
Spindle speed : 85mm⁻¹
Peripheral speed : 150m/min 5.9ipm
Feed rate : 55mm/min 2.2ipm
Cutting depth : each 5mm 0.2in
Torque : 3,170N·m 2,338 ft·lbf
Chip volume : 484cc/min 29.5cu.in/min
Spindle Load : 87%

Spindle Output / Torque

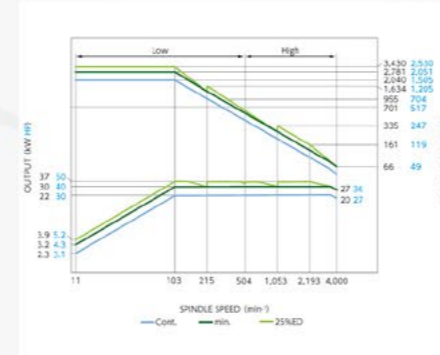
Standard Spindle 6,000min⁻¹
Built-in motor type



High-Speed Spindle(Opt.) 10,000min⁻¹
Built-in motor type



High-Torque Spindle(Opt.) 4,000min⁻¹
Gear drive type

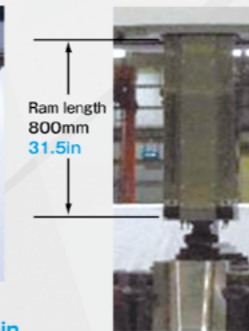


Heavy duty machining example of Z axis position: -800 mm -31.5in

Heavy milling



Machining Condition
Z axis : **-800mm -31.5in**
Tool Diameter : $\phi 160\text{mm}$ 6.3in
Cutting Depth : **5mm 0.20in**
Feed rate : 1,100mm/min 43.3ipm
Cutting width : 130mm 5.1in
Cutting speed : 211mm/min 8.3ipm
Chip volume : **715cc/min 43.6cu.in/min**



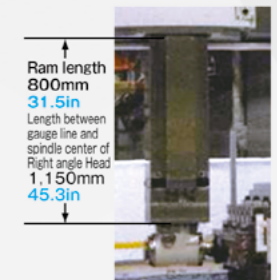
Ram length 800mm 31.5in

Heavy milling test scene when feeding ram

Heavy milling



Machining Condition
Z axis : **-800mm -31.5in**
Tool Diameter : $\phi 160\text{mm}$ 6.3in
Cutting Depth : **4mm 0.16in**
Feed rate : 1,100mm/min 43.3ipm
Cutting width : 130mm 5.1in
Cutting speed : 211mm/min 8.3ipm
Chip volume : **572cc/min 43.6cu.in/min**



Ram length 800mm 31.5in
Length between gauge line and spindle center of Right angle Head 1,150mm 45.3in

Heavy milling test scene when feeding ram

Attachment variation



Small right angle head



Long extension head



Universal head (offset type)



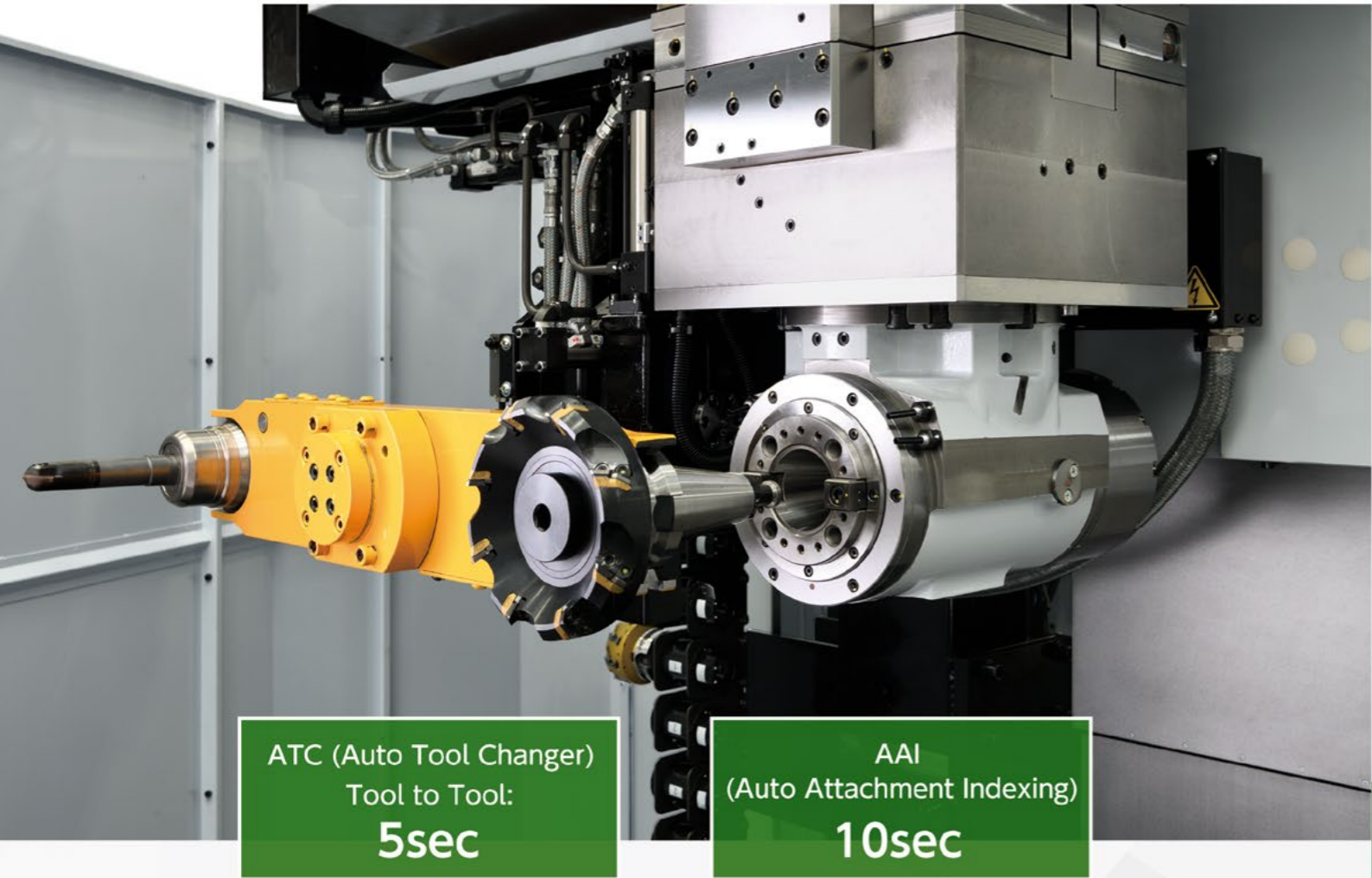
Universal center head

Heavy duty machining example MVR-Ax 6,000min⁻¹ Gear Drive Type (Opt.)

	Material	Tools mm in	Spindle speed	Cutting speed m/min ipm	Width of cut mm in	Depth of cut mm in	Feed rate		Chip removal cm ³ /min cu.in/min	Out put kw HP	Ram position mm in
							mm in/chip	mm in/min			
Main Vertical Spindle	S45C	200 7.9 dia. (10 bl)	320	200 7,874	160 6.3	4 0.16	0.31 0.012	992 39.1	635 38.8	24 31	780 30.7
		63 2.5 dia. (4 bl)	400	79 3,110	63 2.5	50 1.97	0.29 0.011	940 37.0	902 55.0	33 44	500 19.7
	FC300	200 7.9 dia. (10bl)	240	150 5,906	160 6.3	7 0.28	0.11 0.004	176 6.9	554 33.8	26 35	500 19.7
		63 2.5 dia. (4bl)	400	79 3,110	63 2.5	50 1.97	0.14 0.006	252 9.9	794 48.5	26 35	500 19.7
	S45C	600 23.6	69	125 4,921	8 0.3	—	0.26 0.010	36 1.4	520 31.7	Torque 1,700Nm	500 19.7
		M100 3.9	32	10 394	—	—	—	—	—	Torque 1,400Nm	500 19.7
Right Angle Head	S45C	200 7.9 dia. (10bl)	320	200 7,874	160 6.3	5 0.20	0.29 0.011	912 35.9	730 44.5	30 40	400-500 15.7-19.7
		63 2.5 dia. (4 bl)	400	79 3,110	63 2.5	50 1.97	0.32 0.013	1,024 40.3	573 35.0	22 30	600-800 23.6-31.5
	FC300	200 7.9 dia. (10bl)	240	150 5,906	160 6.3	7 0.28	0.08 0.003	128 5.0	403 24.6	20 27	700 27.6
		63 2.5 dia. (4bl)	400	79 3,110	31.5 1.2	50 1.97	0.24 0.009	576 22.7	645 39.4	22 30	700-800 27.6-31.5
	S45C	63 2.5 dia. (4bl)	400	79 3,110	31.5 1.2	50 1.97	0.21 0.008	336 13.2	529 32.3	21 28	750 29.5

The above results are described actual values or theoretical values
It is not guaranteed that the above results are for example based on actual value or theoretical values.
Your results may depends on specifications, tooling and cutting conditions.

High Speed and High Productivity

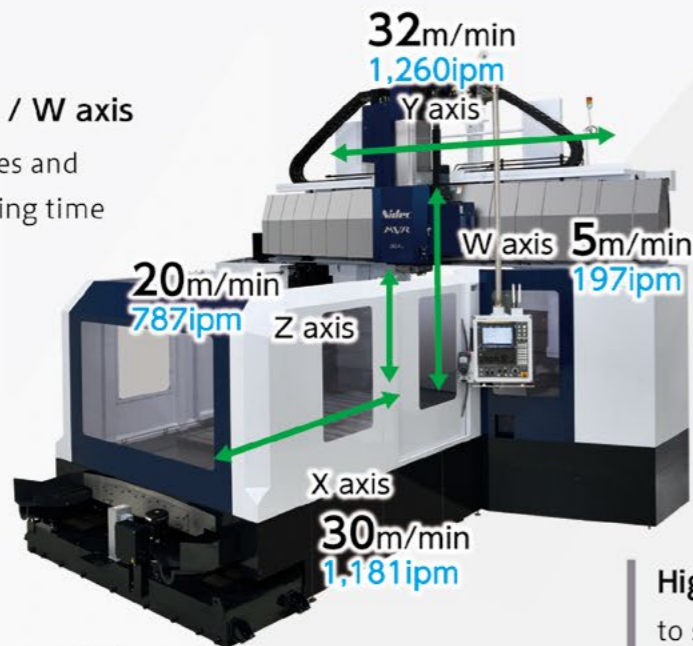


ATC (Auto Tool Changer)
Tool to Tool:
5sec

AAI
(Auto Attachment Indexing)
10sec

Rapid Traverse

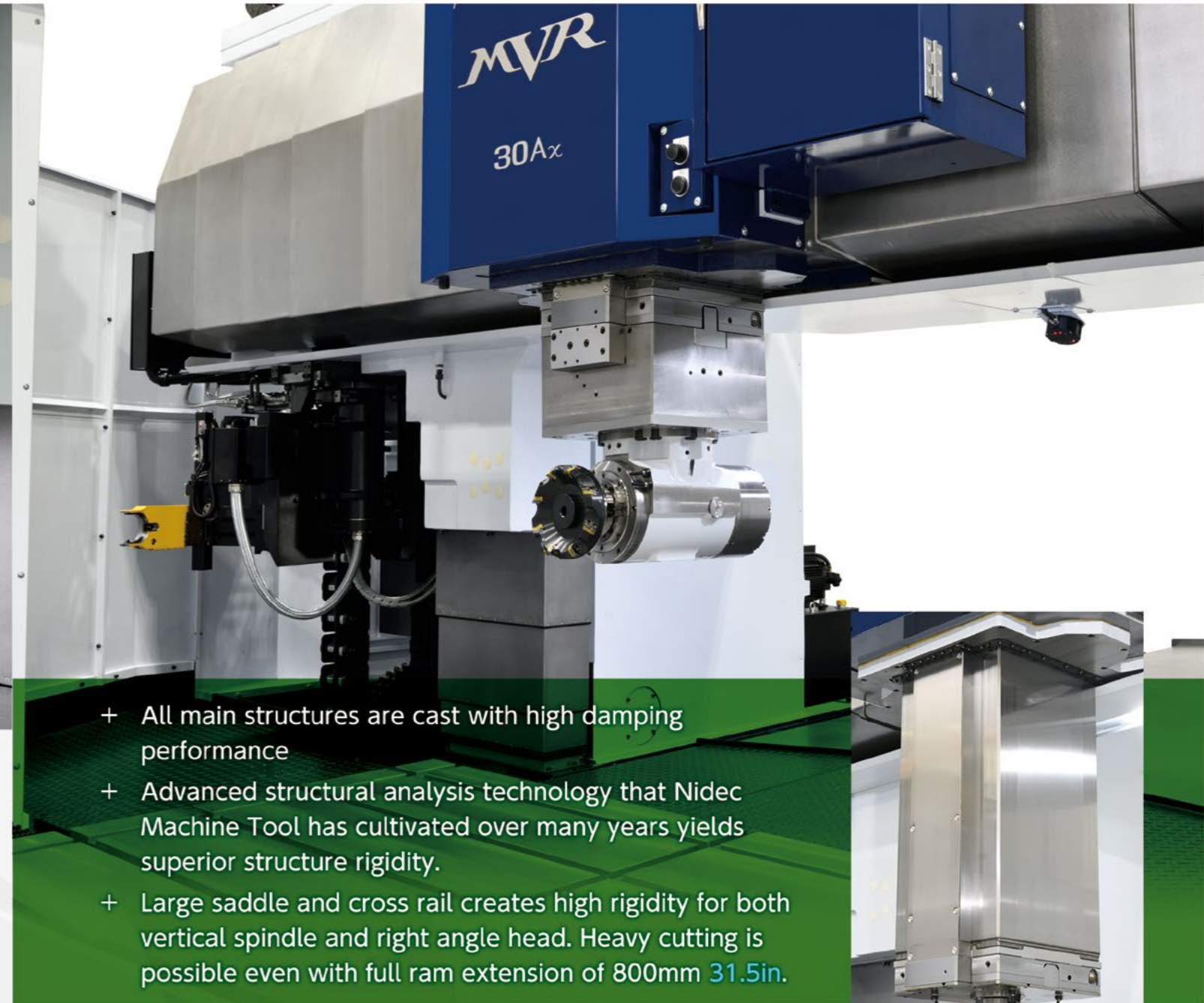
High speed Z axis / W axis
for faster drilling cycles and
reduction of processing time



High speed X and Y axes
to speed up positioning
of wide flat workpieces

※The Rapid Traverse speed changes depending on the size.
Please see the specifications page for the values for each size.

Exceptional Mechanical Rigidity and Damping



- + All main structures are cast with high damping performance
- + Advanced structural analysis technology that Nidec Machine Tool has cultivated over many years yields superior structure rigidity.
- + Large saddle and cross rail creates high rigidity for both vertical spindle and right angle head. Heavy cutting is possible even with full ram extension of 800mm 31.5in.

Extremely rigid right angle machining attachment

The central clamp + 4 clamps firmly connect the ram and the attachment.



Fastening part of Right angle head



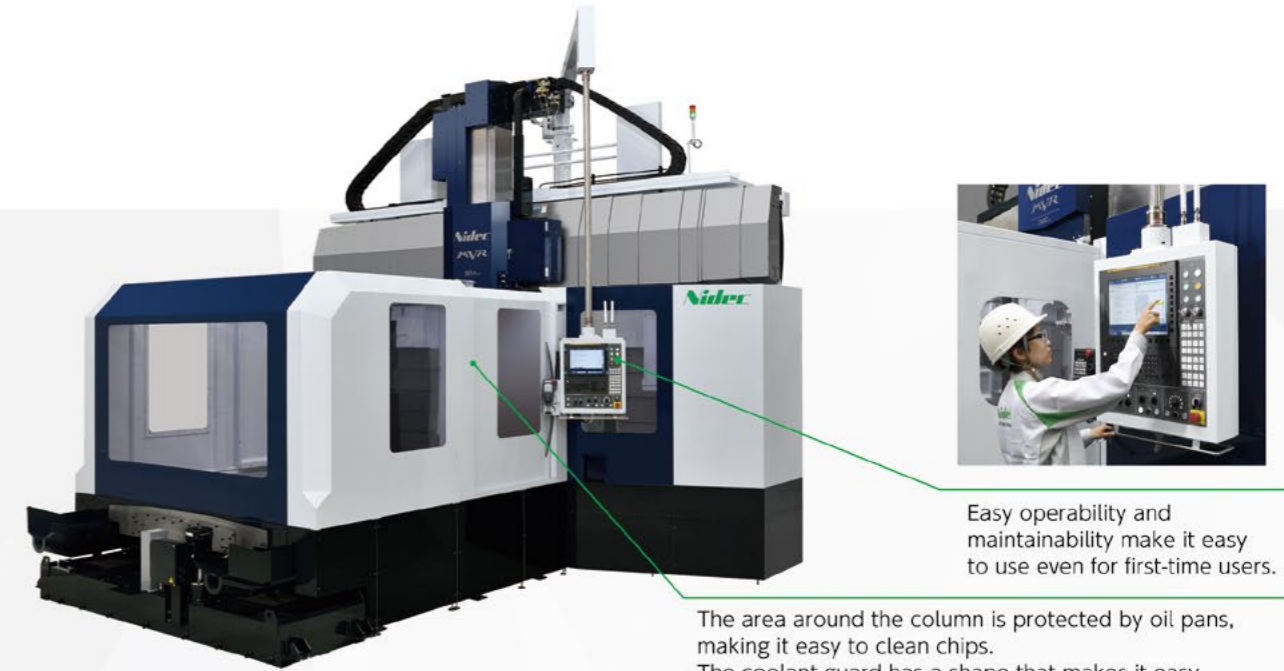
350mm 13.8in strong ram is made of spheroidal graphite cast iron (FCD600) with high tensile strength.

Simple and easy to use

Efficient processing of single-item and high-mix, low-volume production



- Large operation panel with 15" touch screen
- Ergonomic button layout and screen design
- Equipped with the latest NC FANUC 32i-B Plus control system

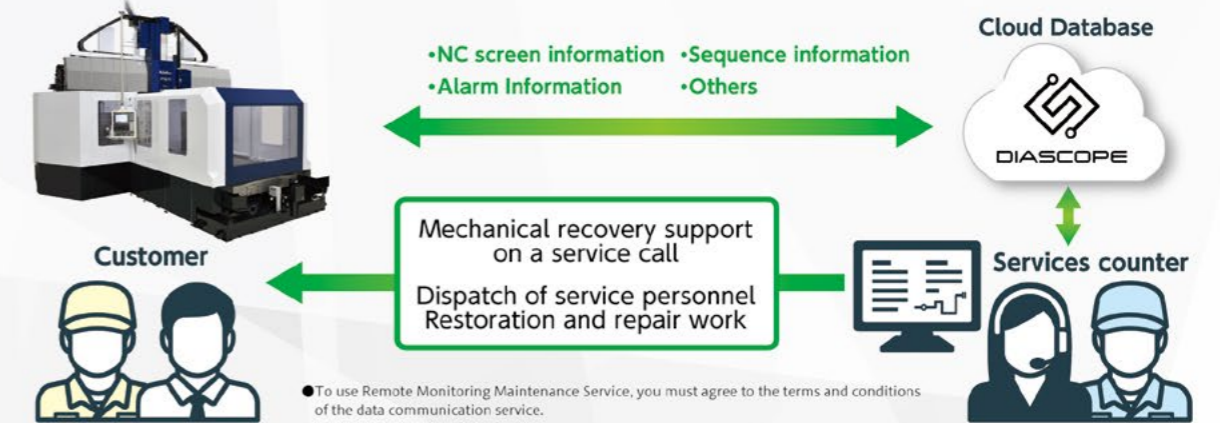


Easy operability and maintainability make it easy to use even for first-time users.

The area around the column is protected by oil pans, making it easy to clean chips. The coolant guard has a shape that makes it easy to install the work while preventing chips from scattering.

Remote Monitoring Maintenance Service

- Continuous monitoring with Nidec's DIASCOPE IoT Platform
- In response to reports of trouble, the support center provides remote access to the machine to instantly grasp the machine status. Based on monitor information, we will guide you to the correct solution to minimize machine downtime.



Nidec Navi Nidec Navi streamlines the work of the operator at each process leading up to machining.

Programming

- **Machining program creation support**
You can easily create complicated machining programs by simply responding to the explanations on the user screen.
- **Program examples that can be created**
Startup macro*, Unequally spaced line at angle, Bolt hole circle, Pocket machining, Half-Circle milling, etc.

* Startup macro; Regardless of whether you use an extension head or a right angle head, all you have to do is enter this G code and it will perform the specified positioning operation.

Centering

- **Manual centering**
With the use of a commercially available touch probe, this function will display step-by-step guidance on the screen.
- **Automatic centering (opt.)**
When using the touch probe of the menu option, centering is possible by inputting the parameters in response to the explanation on the screen.

Tool measurement

- **Tool measurement**
When using "Automatic tool length measurement and compensation and tool breakage monitor" (opt.), tool measurement is possible by inputting the parameters as prompted by the explanation on the screen.

Program debugging

- **Easy collision prevention**
If the spindle invades a certain area around the work during manual intervention*, the alarm will stop before it occurs to prevent a collision accident.

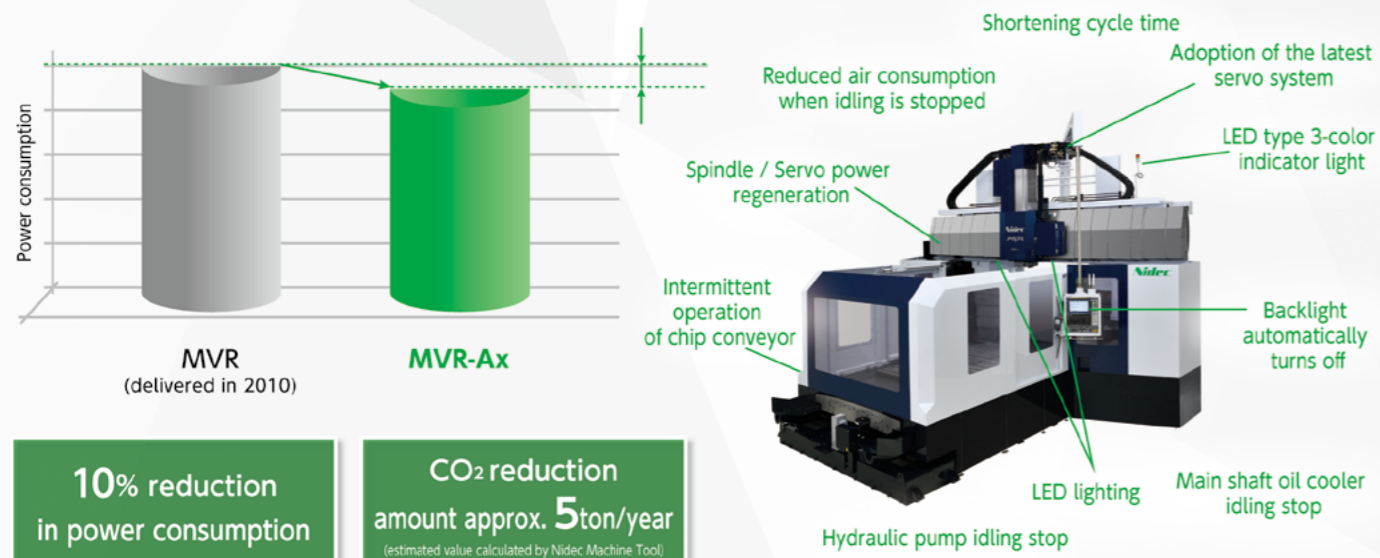
* Manual intervention; rapid traverse and return to origin in manual mode and MDI mode

Recovery from alarm stop

- **Visual Guidance**
When an alarm occurs, the corrective action is visually displayed in 3D. We will guide you through each operation and support quick recovery.

Global Environmental Consciousness

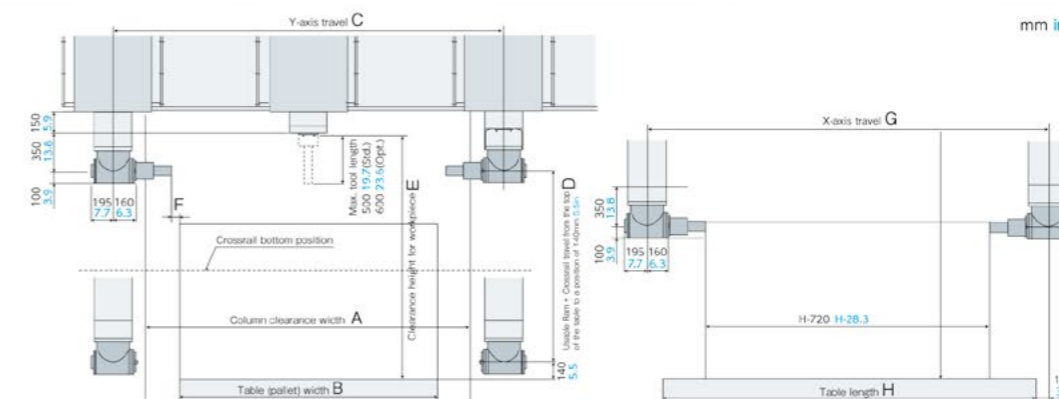
Power consumption



High accuracy machining -Mechanical Structure-



Wide machining area



* Calculated assuming that the tool length is 300mm 11.8in. * There is no interlock at a position 140mm 5.5in from the top of the table.

"Energy saving setting" is also in Nidec Navi

Energy-saving functions for auxiliary equipment and machine operation can be set individually.

項目	設定値	備考
1 省エネモード	ON	
2 コンベア間欠運転	ON	
3 コンベア間欠運転 ON 時間	0 秒	
4 コンベア間欠運転 OFF 時間	120 秒	
5 機内照明自動OFFタイマ	15 分 (0:機能OFF)	
6 NC画面自動OFFタイマ	10 分 (0:機能OFF)	
7 オイルクーラ省エネモード	ON	
8 運転準備OFFモード	ON	
9 油圧ポンプ省エネ運転	ON	

Intermittent conveyor operation

The operation of the chip conveyor has been changed from continuous operation to intermittent operation to reduce power consumption.

NC screen automatic OFF timer

If there is no operation within the set time, the NC screen is automatically turned off.

Operation preparation OFF mode

When the machine stops for a preset period of time, the operation preparation is turned off and the standby power of hydraulic pressure and servo is suppressed.

Energy saving mode

Switch ON/OFF of the entire energy saving function. Even if other individual functions are set to "ON", they will not work if this setting is "OFF".

Machine internal lighting automatic OFF timer

If there is no operation within the set time, the lights under the crossrail will be turned off automatically.

Oil cooler energy saving mode

When the machine stops for a certain period of time, the operation of the oil cooler is stopped to reduce power consumption.

Hydraulic pump energy saving operation

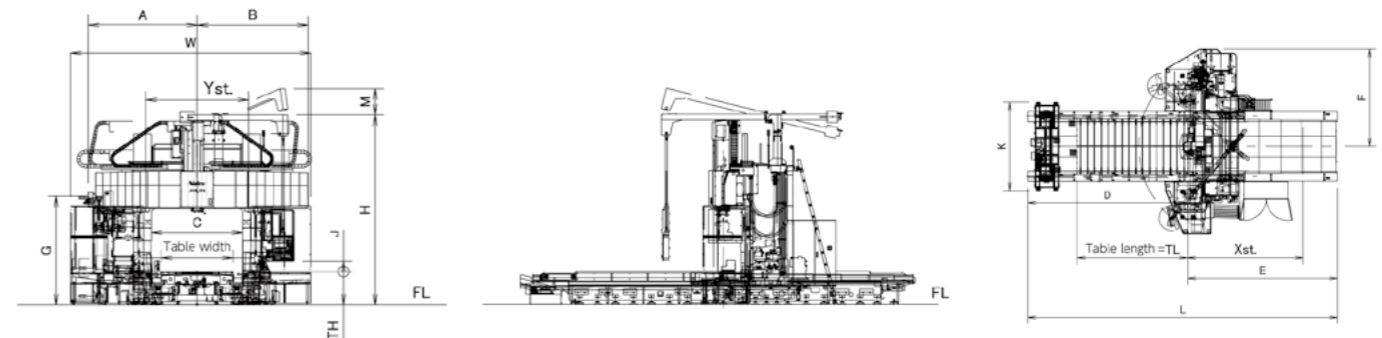
When the machine operation with hydraulic pressure stops for a certain period of time, the hydraulic pressure is turned off. (Operation preparation is not turned off)

ITEM	A	B	C	D	E	F	G	H						
MVR25Ax	2,050	80.7	1,500	59.1	2,500	98.4	1,160	45.7	1,650	65	3,200	126	3,000	118.1
							4,200	165.4	4,000	157.5				
							5,200	204.7	5,000	196.9				
							6,200	244.1	6,000	236.2				
MVR30Ax	2,550	100.4	2,000	78.7	3,000	118.1	1,160	45.7	1,650	65	3,200	126	3,000	118.1
							4,200	165.4	4,000	157.5				
							5,200	204.7	5,000	196.9				
							6,200	244.1	6,000	236.2				
MVR35Ax	3,250	128	2,500	98.4	3,500	137.8	1,360	53.5	1,850	72.8	4,200	165.4	4,000	157.5
							1,660	65.4	2,150	84.6	5,200	204.7	5,000	196.9
							6,200	244.1	6,000	236.2				
							8,200	322.8	8,000	315				
MVR40Ax	3,750	147.6	3,000	118.1	4,000	157.5	1,360	53.5	1,850	72.8	4,200	165.4	4,000	157.5
							1,660	65.4	2,150	84.6	5,200	204.7	5,000	196.9
							6,200	244.1	6,000	236.2				
							8,200	322.8	8,000	315				
MVR45Ax	4,250	167.3	3,500	137.8	4,500	177.2	1,660	65.4	2,150	84.6	6,200	244.1	6,000	236.2
							8,200	322.8	8,000	315				
							10,200	401.6	10,000	393.7				
							10,200	401.6	10,000	393.7				

Specifications

Specifications

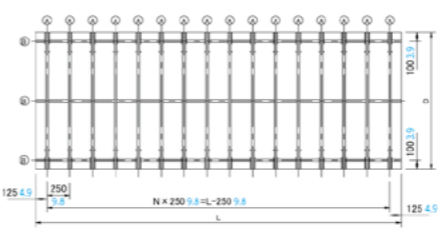
Item	Model	MVR25Ax	MVR30Ax	MVR35Ax	MVR40Ax	MVR45Ax			
Throat clearance between columns	mm in	2,050 80.7	2,550 100.4	3,250 128.0	3,750 147.6	4,250 167.3			
Distance from spindle end to table surface	std. mm in	1,650 65.0	1,650 65.0	1,850 72.8	1,850 72.8	2,150 84.6			
	opt. mm in	2,010 79.1	2,010 79.1	2,150 84.6	2,150 84.6	—			
Table	Working Area	Width	std. mm in	1,500 59.1	2,000 78.7	2,500 98.4	3,000 118.1	3,500 137.8	
			Length	std. mm in	3,000 118.1	3,000 118.1	4,000 157.5	4,000 157.5	6,000 236.2
				opt. mm in	4,000 157.5	4,000 157.5	—	—	—
		opt. mm in		5,000 196.9	5,000 196.9	5,000 196.9	5,000 196.9	—	
		Loading Capacity/ Table length	T-slots in lateral direction	std. kg/mm lb/in	12,000 / 3,000 26,400/118.1	20,000 / 3,000 44,000/118.1	25,000 / 4,000 55,100/157.5	25,000 / 4,000 55,100/157.5	35,000 / 6,000 77,100/236.2
				opt. kg/mm lb/in	15,000 / 4,000 33,000/157.5	25,000 / 4,000 55,100/157.5	—	—	—
	opt. kg/mm lb/in			18,000 / 5,000 39,600/196.9	30,000 / 5,000 66,100/196.9	30,000 / 5,000 66,100/196.9	30,000 / 5,000 66,100/196.9	—	
	T-slots in longitudinal direction		std. kg/mm lb/in	20,000 / 6,000 44,000/236.2	30,000 / 6,000 66,100/236.2	30,000 / 6,000 66,100/236.2	30,000 / 6,000 66,100/236.2	—	
			opt. kg/mm lb/in	20,000 / 8,000 44,000/315.0	30,000 / 8,000 66,100/315.0	30,000 / 8,000 66,100/315.0	30,000 / 8,000 66,100/315.0	30,000 / 8,000 66,100/315.0	
			opt. kg/mm lb/in	—	30,000 / 10,000 66,100/393.7	30,000 / 10,000 66,100/393.7	30,000 / 10,000 66,100/393.7	25,000 / 10,000 55,100/393.7	



ITEM	L	W	H	A	B	C	D	E	F	X st	Y st	TL	TW	TH	J	K	M
MVR25Ax	9,250 364.2 11,250 442.9 13,250 521.7 15,250 600.4 19,650 773.6 24,350 958.7	6,200 244.1	5,250 206.7 5,900 232.3	2,910 114.6	2,850 112.2	2,050 80.7	4,900 192.9 5,900 232.3 6,900 271.7 7,900 311.0 10,100 397.6 12,450 490.2	4,350 171.3 5,350 210.6 6,350 250.0 7,350 289.4 9,550 376.0 11,900 468.5	3,335 131.3	2,500 98.4	3,000 118.1	1,500 59.1	925 36.4	—	—	—	3,218 126.7
MVR30Ax	9,250 364.2 11,250 442.9 13,250 521.7 15,250 600.4 19,650 773.6 24,350 958.7	6,700 263.8	5,250 206.7 5,900 232.3	3,160 124.4	3,100 122.0	2,550 100.4	4,900 192.9 5,900 232.3 6,900 271.7 7,900 311.0 10,100 397.6 12,450 490.2	4,350 171.3 5,350 210.6 6,350 250.0 7,350 289.4 9,550 376.0 11,900 468.5	3,585 141.1	3,000 118.1	2,000 78.7	925 36.4	—	—	—	—	3,218 126.7
MVR35Ax	11,250 442.9 13,250 521.7 15,250 600.4 19,650 773.6 24,350 958.7	7,630 300.4	5,700 224.4 6,350 250.0	3,610 142.1	3,575 140.7	3,250 128.0	4,900 192.9 5,900 232.3 6,900 271.7 7,900 311.0 10,100 397.6 12,450 490.2	4,350 171.3 5,350 210.6 6,350 250.0 7,350 289.4 9,550 376.0 11,900 468.5	4,035 158.9	3,500 137.8	2,500 98.4	1,025 40.4	600 23.6	—	—	—	5,218 205.4
MVR40Ax	11,250 442.9 13,250 521.7 15,250 600.4 19,650 773.6 24,350 958.7	8,130 320.1	5,700 224.4 6,350 250.0	3,860 152.0	3,825 150.6	3,750 147.6	4,900 192.9 5,900 232.3 6,900 271.7 7,900 311.0 10,100 397.6 12,450 490.2	4,350 171.3 5,350 210.6 6,350 250.0 7,350 289.4 9,550 376.0 11,900 468.5	4,285 168.7	4,000 157.5	3,000 118.1	1,025 40.4	—	—	—	—	5,218 205.4
MVR45Ax	15,250 600.4 19,650 773.6 24,350 958.7	8,905 350.6	6,000 236.2 6,650 261.8	4,254 167.5	4,249 167.3	4,250 167.3	4,900 192.9 5,900 232.3 6,900 271.7 7,900 311.0 10,100 397.6 12,450 490.2	4,350 171.3 5,350 210.6 6,350 250.0 7,350 289.4 9,550 376.0 11,900 468.5	4,635 182.5	4,500 177.2	3,500 137.8	1,025 40.4	—	—	—	—	5,218 205.4

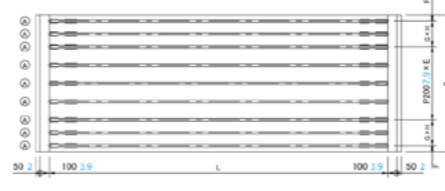
*Gear drive spindle specifications

Table Surface (Std.)

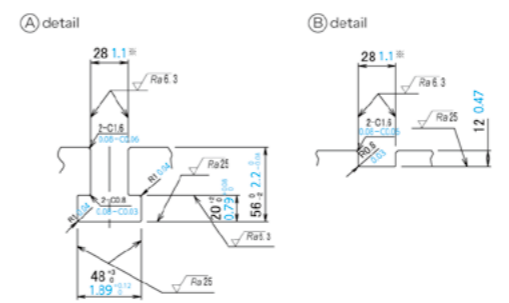


Item	Table width D mm	Table working length L mm	Number of Groove pitches N
MVR25Ax	1,500 59.1	3,000/4,000/5,000/6,000/8,000 118.1/157.5/196.9/236.2/315	11/15/19/23/31
MVR30Ax	2,000 78.7	3,000/4,000/5,000/6,000/8,000/10,000 118.1/157.5/196.9/236.2/315/393.7	11/15/19/23/31/39
MVR35Ax	2,500 98.4	4,000/5,000/6,000/8,000/10,000 157.5/196.9/236.2/315/393.7	15/19/23/31/39
MVR40Ax	3,000 118.1	4,000/5,000/6,000/8,000/10,000 157.5/196.9/236.2/315/393.7	15/19/23/31/39
MVR45Ax	3,500 137.8	6,000/8,000/10,000 236.2/315/393.7	22/31/36

Table Surface (X-axis direction groove specifications)



Item	Table width D mm	Table working length L mm	Number of Groove pitches E	Number of Groove pitches F mm	Number of Groove pitches G mm	Number of Groove pitches H
MVR25Ax	1,500 59.1	2,700/3,700/4,700/5,700/7,700 106.3/145.7/185/224.4/303.1	4	7.0	140	2
MVR30Ax	2,000 78.7	2,700/3,700/4,700/5,700/7,700 106.3/145.7/185/224.4/303.1	8	7.0	130	1
MVR35Ax	2,500 98.4	3,700/4,700/5,700/7,700 145.7/185/224.4/303.1	10	7.0	180	1
MVR40Ax	3,000 118.1	3,700/4,700/5,700/7,700 145.7/185/224.4/303.1	14	7.0	0	0



※Fixing groove standard based on JIS B 0952 (1999)
For special applications of grooves on table surface, please ask NIDEC Machine Tool (Option)

Standard Equipment

- MP scale feedback: W axis
- Spindle nose taper air blow system
- Air blow system
- Tool locking system MASS-II type (60°)
- Counter weight balanced type pendant control box (700 mm up & down)
- Pendant operation panel lower end height: 600mm from the top of the table
- Manual pulse generator: Portable type/one-axis switching type
- Automatic tool changer (ATC) and tool magazine
- Dummy plate
- Right Angle Head: VHRH-30-35-35P-AC
- Main operation panel
- Attachment storage rack for 2-attachment
- Crossrail way covers: Telescopic steel way covers
- Column way covers: Upper half: Steel covers, Lower half: Telescopic steel way covers
- Table bed way covers: Telescopic steel way covers
- Indication lamp (LED) (Red/Yellow/Green)
- Work light (LED) under the crossrail: 10 W × 2 pcs
- Coil type chip conveyor on both sides of the table bed in the front side
- Flood coolant supply system
 - 0.5MPa (71 psi), 20L (5.3gal)/min. (Water-soluble)
 - MVR25/30 : Tank capacity 600 L
 - MVR35/40/45 : Tank capacity 1,000 L

- Cooler unit for spindle housing
- Hydraulic pump unit
- Intermittent lubrication and spindle oil-air lubrication units
- Leveling blocks and anchor bolts
- Wiring materials, electrical equipment, and NC system
- Standard paint colors
- Operator friendly functions (Nidec Navi)
- Tool management function
- 5-face machining software
- Earth leakage breaker: Sensitivity current 200 mA
- Monitoring system "DIASCOPE": Remote monitoring and operation monitoring
- Easy collision prevention
- Relocation detection
- Safety fence around the machine : safety fence ATC/AAC portion only
- Coupler for coolant gun
- Coupler for air gun
- Relocation detection system

Optional Equipment

- MP scale feedback: X, Y, Z axis (W axis Std.)
- Spindle thermal displacement suppression system
- Automatic pallet changer (MVR25Ax/30Ax): Short side replacement type (including 2 pallets)
- Automatic pallet changer (MVR25Ax/30Ax): Shuttle type (including 2 pallets)
- Automatic pallet changer (MVR35Ax/40Ax/45Ax): Cross-over type (including 2 pallets)
- Coolant guard around ATC and AAC portion only
- Coolant guard around ATC , AAC and front table side fences
- Coolant guard around ATC , AAC and front & rear table side fences without ceilings
- Coolant guard around ATC , AAC and front & rear table side fences with rear ceiling
- ATC shutter for Coolant guard
- Double swing-oped doors for loading / unloading workpieces
- Safety fence and safer doors around the machine
- Mortar "Non-shrink NS-GL" for fixing leveling block
- Special clasper for leveling block
- Spindle speed : 10,000min⁻¹ (18.5/26kW) with built-in motor
- Spindle speed : 4,000min⁻¹ (22/30kW) with gear drive
- Tool locking system with pull-stud: MAS-I type (45°) instead of MAS-II type (60°)
- Tool flange shape with CV type instead of BT type
- Column riser block for MVR25Ax, 30Ax: 360 mm
- Column riser block for MVR35Ax, 40Ax: 300 mm
- Extension of Y-axis stroke
- Flood coolant supply system: Oil-soluble coolant instead of water-soluble
- Coolant tank of MVR25Ax, 30Ax: 1,000 L tank instead of 600 L tank
- Coolant temperature control system
- Oil skimmer on coolant tank
- Filter stand for coolant filtration
- Hinged steel belt chip conveyor: Parallel to table longitudinal direction x2
- Addition of grating on the chip conveyor on both sides of the table bed. (full length on both sides)
- Hinged steel belt chip conveyor (Elevating type): Orthogonal to table longitudinal direction.
- Power driven pendant control box: 1,000 mm (39.4 in) up & down
- Coolant/air supply system through the spindle (Pump pressure 1.0 MPa(142 psi),20L/min)
- Coolant/air supply system through the spindle (Pump pressure 3.0 MPa(426 psi),20L/min)
- Mist coolant supply system (SMC)
- Micro mist coolant supply system (Cooltech, Water-soluble coolant)
- Micro mist coolant supply system (Blube, Oil-soluble coolant)
- ATC (Automatic Tool Changer) tool magazine size:
 - Round type : 80, 100
 - Square type : 120
 - Zigzag type : 180
- Max tool length for ATC: 600 mm
- Max tool weight for ATC: 30 kg
- Deletion of Std. ATC magazine
- Operation panel for ATC magazine (touch panel)
- Air conditioner of NC panel
- Installation of an outlet (single-plug outlet rated at 100 VAC, 3A) to the control panel door
- Control panel illumination (LED) synchronized with the opening/closing of the door
- Yearly check
- Chip box
- Hydraulic pump unit (Inverter type)
- Preparation of the contacts for external M codes
- 3D data for machine (IGES type)
- GB standard as Chinese standard
- KCs standard as South Korea standard
- Language on NC, Machine plate and manuals: English
- Language on NC, Machine plate and manuals: Chinese
- Language on NC, Machine plate and manuals: Korean
- Standard Bar
- Red warning light.
- Ram lubrication oil recovering system.
- Air compressor (with air dryer): 1,500 NL/min
- Air dryer
- Custome macro desinated by customers
- Shaping function combined with C-axis control using flat cutting tool
- W-axis cutting feed (Std. for MVR45Ax)
- Machine layout drawing
- Addition of machine operation manuals (Hard copy)
- Addition of parts list (Hard copy)
- Spare parts for one year
- NC maintenance contract
- NAS machining accuracy verification (at the factory)
- Five-face machining accuracy verification (at the factory)
- Special color desinated by customers
- Operation training(2 days)
- Small type extension milling head (built-in type) : VMEH-5-60-35P-AC (5 kW [6.5 HP], 3,000 min⁻¹)
- Universal head (Offset type) : VAUH-15-44-35P-AC (15 kW [20 HP], 5,000 min⁻¹)
- Universal head (Center head type) : VAUH-15-54-35P-AC (15 kW [20 HP], 6,000 min⁻¹)
- Addition of attachment rack for each attachment (Max 2 sets only)
 - For additional Right angle head
 - For Extension milling head
 - For Universal milling head
- Addition of attachment rack for additional Five attachments

*1: 4,000 min⁻¹ spindle (Opt.) should be required.
*2: 10,000 min⁻¹ spindle (Opt.) should be required.

Optional Attachment

- Strong type right angle head : VHRH-30S-35-35P-AC (30 kW [40 HP], 4,000 min⁻¹)*1
- High speed type right angle head : VHRH-15-35-35P-AC (15 kW [20 HP], 10,000 min⁻¹)*2
- Small type right angle head : VHRH-8-52-35P-AC (8 kW [11 HP], 500 min⁻¹)
- Extension milling head(long) : VMEH-25-50-35P-AC (25 kW [34 HP], 6,000 min⁻¹)
- Extension milling head(short) : VMEH-30-35-35P-AC (30 kW [40 HP], 6,000 min⁻¹)
- Small type extension milling head: VMEH-8-50-35P-AC (8 kW [11 HP], 3,000 min⁻¹)
- High speed extension milling head: VMEHH-30-35-35P-AC (30 kW [40 HP], 10,000 min⁻¹)*2
- High speed extension milling head : VMEHH-18.5-60-35P-AC (18.5 kW [25 HP], 15,000 min⁻¹)

Monitoring Function

- Overload monitor by the soft meter method including simple adaptive control
- Tool life monitor and Spare tool automatic replacement
- Automatic tool length measurement and compensation & Tool breakage monitoring
- Automatic workpiece measuring with standard measuring macro programs
- Manual workpiece measuring (Customer needs to prepare the probe sensor)

- Operation time accumulation
- Production number control
- Operation result output: Display/output to our original screens
- Automatic power OFF
- Automatic power ON

NC Specifications FANUC Series 32i-B Plus (For detailed specifications, refer to the NC operation manual.)

Standard Functions

Item	Description
Controlled axis	
Stored stroke check 1	
Stored stroke check 2,3	
Stroke limit check before move	
Mirror image	X,Y axis
inch/metric conversion	G20,G21

Operation	
Program / Sequence number search	
Sequence number comparison stop	
Jog feed	0~4,000mm/min. 157.5 ipm (22 step)
Manual reference position return	
Manual handle feed	Potable type manual handle, x1, x10, x100
3-dimensional handle feed	Tool direction + normal direction
Manual handle interruption	One dimension

Interpolation functions	
Single direction positioning	G60
Exact stop mode / Exact stop	G61,G09
Dwell	G04
Helical interpolation	G02,G03, Circular interpolation plus max. 2 axes linear interpolation.
Reference position return / check	G28,G27
2nd reference position return	G30 (P2)
3rd/4th reference position return	G30 (P3,P4)
Tapping mode / Cutting mode	G63/G64
High speed skip	G31

Feed function	
Feed per minute	G94, mm/min ipm
Tangential speed constant control	
Cutting feedrate clamp	
Automatic acceleration / deceleration	Rapid traverse: linear, Cutoff feed:linear+exponential
Override cancel	M17 : Enable / M18 : Disable

Program input	
Optional block skip	Total 3
Decimal point programming / pocket calculator type decimal point programming	
Input unit 10 time multiply	0.01mm, 0.01deg, 0.001inch
Plane selection	G17,G18,G19
Coordination system setting	
Automatic coordination system setting	
Workpiece coordinate system	G54~G59, 6 pairs
Workpiece coordinate system preset	G92.1
Addition of workpiece coordinate system pair	G54.1, 48 pairs
Manual absolute on and off	
Optional chamfering / corner R	
Programmable data input	G10
Sub program call	M98, 10 folds nested
Custom macro	G65,G66,G66.1, 5 folds nested
Addition of custom macro common variables	600 (total), #100 ~ #199, #500 ~ #999
Interruption type custom macro	
Coordinate system rotation	G68, G69
3-dimensional coordinate conversion	
Canned cycles	G73, G74, G76, G80~G89
Circular interpolation by R programming	12-digit
Program format for FS15	For detailed specifications, refer to the NC operation manual.

Auxiliary / Spindle speed function	
2nd Auxiliary function	U5 digit
Spindle speed function	S5 digit

Tool function / Tool compensation	
Tool offset pairs	±7-digit 400
Tool offset memory C	Distinction between geometry and wear, or between cutter and tool length compensation
Tool length compensation	G43,G44,G49
Tool offset	G45,G46,G47,G48
Cutter compensation C	
Tool Management System	T8-digit
Automatic tool length measurement	

Editing operation	
Part program storage capacity	4Mbyte (10,240m)
Program editing	Number of registerable program number 500
Background editing	Extending program Editing function
Program protect	
Playback	

Standard Functions

Item	Description
Setting and display	
Status / Clock / Cutting position display	
Program display	Program name 31 characters
Self diagnosis function	Self diagnosis in NC system
Alarm display / Alarm history display	
Run hour and parts count display	
Dynamic graphic display	
Actual cutting federate display	
Multi-language display	
Data protect Function	English / Japanese / Chinese / Korean version
Erase CRT screen display	1 type

Data input/output	
USB memory input/output	
Embedded Ethernet interface	100base-Tx1ch
Display	
Settings display device	15" color touch panel

Optional Functions

Item	Description
Operation	
Tool retract and recover	
Interpolation functions	
Conical / spiral interpolation	G02,G03
Polar coordinate interpolation	G12.1, G13.1
Threading, synchronous cutting	Including "Dwell in seconds" and "Feed per revolution(G95)"
Multi step skip	This function is required for Tool breakage monitor / Automatic tool length measurement
Avoiding OT area intrusion	

Feed function	
One-digit F code feed	
Feed stop	

Program input	
Polar coordinate command	G15, G16
Addition of workpiece coordinate system pair	G54.1, 300 pairs
Automatic corner override	G62
Scaling	G50, G51
Programmable mirror image	G50.1, G51.1
Figure copy	G72.1, G72.2
Retrace	Cannot select this function if interruption type custom macro is selected

Auxiliary / Spindle speed function	
Rigid tapping	Including 3D rigid tap and rigid tap return

Tool function / Tool compensation	
Tool offset pairs	±7-digit 999
3-dimensional cutter compensation	G40, G41
Tool Life Management	240 pairs, 1000 pairs, Tool Management system version

Editing operation	
Part program storage capacity	8Mbyte (20,480m)
Number of registerable program	4000 pairs
Extending the number of memory card program registrations	Number of program : 500 or 1000
Machining time stamp	

Hi-speed cutting function	
AI Contour Control I	Number of blocks read ahead : 30 blocks, designed mainly for part machining
AI Contour Control II	Number of blocks read ahead : 200 blocks, machining of successive minute straight lines

Data input/output	
Reader/puncher interface	RS232C x 1ch
Reader/puncher interface expansion of receiving buffer	Remote Buffer Interface
Data server	Memory device : ATA FLASH CARD, I/F : 100base-T(1ch.)
Program Transfer Tool	For CNC Part program storage memory, Application software for PC



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Machine specifications such as dimensions etc., are fixed using SI units including the metric system.
In case data are shown in other units in blue, such as inches, pounds and gallons etc. they are for reference only and the formal data
in black supersedes any equivalent data given in blue when fractions caused by conversion become an issue.
Specifications are subject to change without prior notice.
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