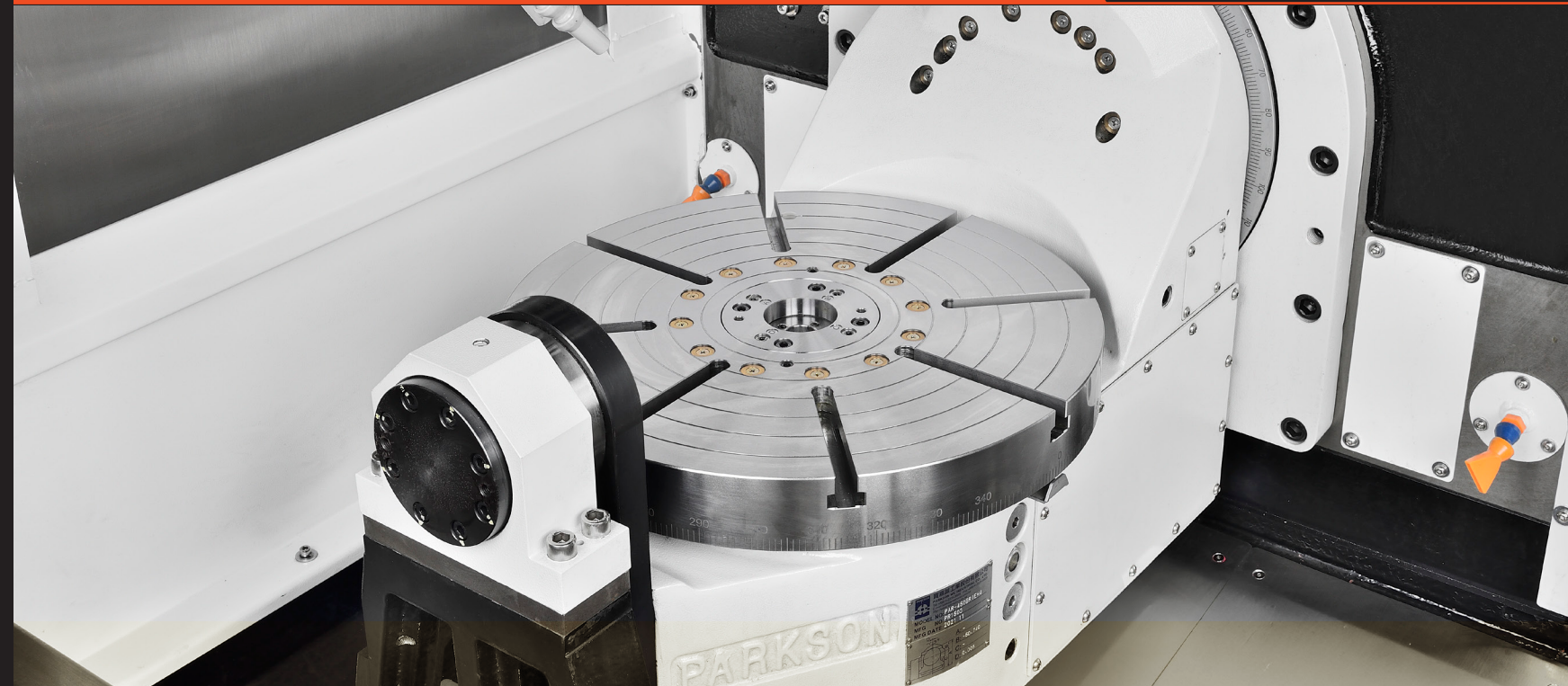




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3-5 Axis High Speed High-Accuracy Vertical Machining Centers



GEN MILL

2026 MACHINE CATALOG



3-5 AXIS HIGH SPEED CNC VERTICAL MACHINING CENTERS



GEN MILL

3-5 Axis High Speed High-Accuracy Vertical Machining Centers

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HEADQUARTERS LOCATED IN CHATSWORTH, CA



FEATURING A LARGE 4,000 SQ. Ft SHOWROOM



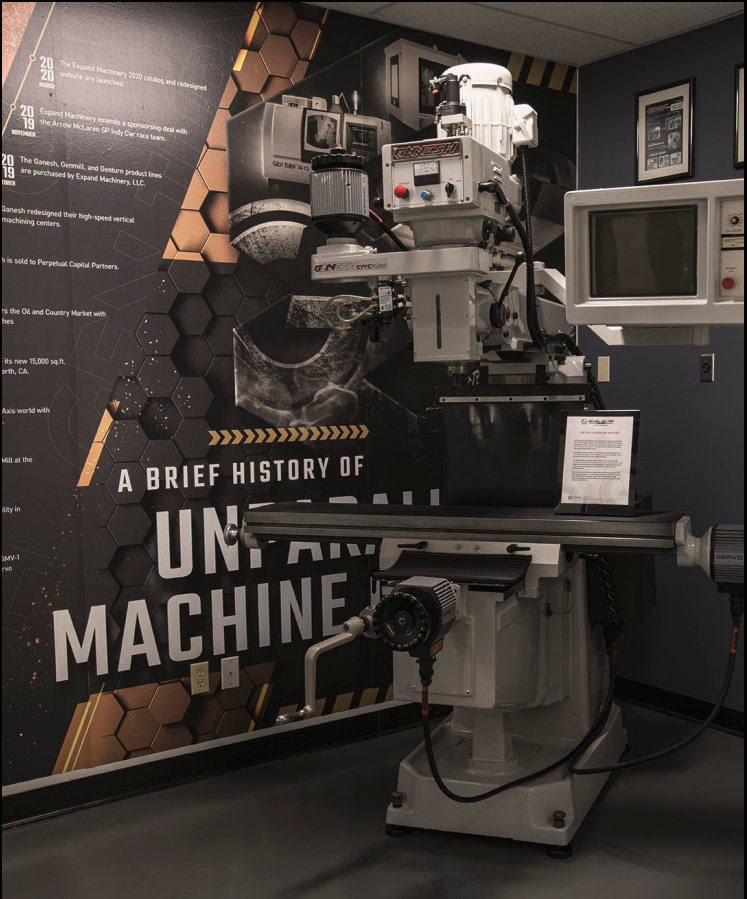
FULLY STOCKED PARTS ROOM



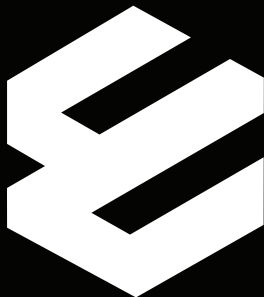
TRAINING CENTER



PRODUCTION AREA



COMPANY HISTORY ROOM



It began with a dream in 1985 to deliver superior quality machine tools to the market that provided the highest value and productivity available. We are still driven by this same commitment to you.



RACING SPONSORSHIPS WITH ARROW MCLAREN INDYCAR TEAM

“

At Arrow McLaren, we're focused on building a high-performing team that competes for wins, poles and the championship. We're always looking for any way we can improve our race cars each and every race weekend. Our partners at Expand Machinery help give us the tools and machinery we need to push forward and fight to be at the top of the NTT INDYCAR SERIES.”

Gavin Ward
Team Principal, Arrow McLaren

PROUD PARTNER OF





MADE IN JAPAN

PM320-5X

5-Axis Super Precision Compact VMC

- + 25,000 RPM with Built In Spindle (Optional 45,000 RPM)
 - + 50 Station HSK-E40 High Speed ATC
 - + Optional 2,000 RPM Turning Optional (PM-320-5X-T)
 - + 100 mm Diameter Trunnion
- + Fanuc 31i-B5 5 axis Simultaneous CNC Control
 - + Glass Scales Included
 - + Tool and Part Probing Included
 - + Chip Conveyor Included

Rotary Table	Table Size	100 mm	3.937"
	Tilt Angle	-20 / +120 degrees	
	Tool Nose to Rotary Table	100 mm – 480 mm	3.937" - 18.8"
	Max C-Axis Rotation	100 rpm	
	Max B-Axis Rotation	75 rpm	
	Workpiece Weight Limit	30 kg	66 lbs. (including fixture)
Axis Travel	X-Axis Travel	320 mm	12.59"
	Y-Axis Travel	340 mm	13.38"
	Z-Axis Travel	380 mm	14.96"
	Rapid Traverse Rate	300 mm / min	1,181 ipm
Spindle	Spindle Taper	HSK-E40	
	Spindle Speed	25,000 rpm standard	45,000 rpm (optional)
	Spindle Power	25,000 rpm = 15 / 7.5 kW	45,000 rpm = 15 / 11.0 kW (optional)
Automatic Tool Changer	Tool Count (optional)	64	HSK-E32 random access tool positions
	Tool Count	50	HSK-E40 random access tool positions
	Tool Change Time	1.9-seconds tool-to-tool	
	Maximum Tool Diameter	35 mm	1.378"
	Maximum Tool Length	140 mm	5.512"
Specifications	Coolant Tank Capacity	100 liters	26 gallons
	Chip Conveyor Length	1,080 mm	42.51"
	Power Requirements	220 vac ±5%, 60-Hz	25 kVA
	Machine Dimensions W x D x H	1,200 x 2,690 x 2,500 mm	48" x 106" x 98"
	Machine Weight	4,100 kg	9,040 lbs.
Warranty	1-year machine warranty		
	2-year Fanuc control, motors & drives warranty		
	Machines need a stable 220 Volts, 3 Phase – Please use appropriate transformers or voltage stabilizers. Note: Balanced toolholders with G2.5 rating required for spindle speeds above 10,000 rpm!		



5X-8

High Speed VMC with built-in 8" Trunnion

- +

12,000 RPM Inline Direct-Drive Beltless "Big-Plus" Spindle
- +

15-HP Spindle Motor with Synchronous Rigid Tapping Capability
- +

1,417 IPM Rapid Rates in X & Y Axis
- +

24-Tool High-Speed Twin-Arm Tool Changer
- +

300 PSI "Through-the-Spindle" Coolant System with Rotary Coupling

Axis Travel	X-Travel	25.59"	650 mm
	Y-Travel	19.68"	500 mm
	Z-Travel	17.71"	450 mm
	Spindle Nose to Rotary Table Surface	0" - 17.71"	0 – 450 mm
	Spindle Center to Z-axis way covers	20.27"	515 mm (throat dimension)
Tilting Rotary Table	Platter diameter	Ø 8.27"	Ø 210 mm
	Center bore diameter	Ø40 mm H7	
	T-Slot width	12 mm H7	Hardened & ground table & T-slots
	Guide block width	18 mm	
	A-Axis Tilting Servo Motor	Mitsubishi HF-224T	
	C-Axis Rotary Servo Motor	Mitsubishi HF-104T	
	Torque	7 kg-cm2	
	Indexing resolution / Accuracy, A / C	0.001°	50 sec. / 20 sec.
	Indexing repeatability, A / C	±4 sec. / ±3 sec.	
	Feedback System A / C	Heidenhain Encoder (ECN-223M w/ 10 sec. resolution)	
	Tilting angle range	+20° - -110° (130° total range)	
	Brake Torque A / C	423 ft. lbs. / 256 ft. lbs. (58.5 / 35.5 kg/m)	
	Cutting Torque limit	17 kg/ m	
	Rotational speed A / C	33 /22 rpm	
	Transmission Ratio A / C	1:90 / 1:120	
	Work load capacity	165 lbs.	(75 kg) Horizontal
Spindle	Work load capacity	110 lbs.	(50 kg) In Tilt (10-90°)
	Maximum Work Table Load	165 lbs.	75 kgs for rated accuracy
	Maximum Part Swing	Ø12.5"	Ø 317 mm
	Spindle Motor – S1 / S2 / S3 = 7.5 / 11 / 15 kW	20-Horsepower Peak	15-HP 30-minute duty-rating
	Spindle Speed – Inline Direct-Drive	12,000 rpm	(15,000 & 24,000 rpm optional)
Axis Feeds	Spindle Torque	50 ft-lb @ 1,500 rpm	
	Retention Knob (pull stud)	C40-4502H (coolant)	C40-4502S (solid)
	Retention System / Holding Capability	Bellville Spring Stack	1,650-1,760 lbs.
	Spindle Runout	≤ 0.000040" T.I.R.	
	Rapid Traverse X, Y	1,417 ipm	(36 m / minute)
Tool Changer	Rapid Traverse Z	944 ipm	(24 m / minute)
	Cutting Feedrate	0.04 - 394 ipm	(10 m / minute)
	Axis Drive Motor Power – X, Y	2.7-HP	2.0 kW
	Axis Drive Motor Power - Z	4.7-HP	3.5 kW
	Ballscrews – X, Y, Z	32 mm ballscrews	12 mm pitch
	Least Input Command Increment	0.0001"/ 0.000040"	0.001 mm / (40-millionths in metric)
Specifications	Tool Capacity	30 Tool Twin-Arm	Hi-Speed Tool Changer
	Tool Shank	CAT#40 Taper	BT#40 optional
	Tool Change Time	1.7-sec. tool-to-tool	Inverter Motor Driven
	Maximum Tool Diameter / w/adjacent tool	5.90" / 3.15"	150 mm / 80 mm
	Maximum Tool Length / Weight	11.81"/ 15 lbs.	300 mm/ 7 kg
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
	Air Service Requirements	85 psi @ 14-scfm	20 kg/cm²
	Coolant Capacity	68-gallons	256 liters
	Electrical Requirements - connected load	220 vac ±5%, 60-Hz	30 kVA
	Floor space requirements (W x D x H)	100" x 86" x 113"	254 x 219 x 288 cm (add 48" for conveyor)
	Machine Weight	12,760 lbs.	5,788 kg
	Warranty – 1-year machine warranty	3-year Mitsubishi control, motors, & drives warranty	



5X-12

5-Axis High Speed VMC with built-in 12" Trunnion

- + Glass Scale Feedback on All 5-Axis
 - + Roller Bearing Ways (twice as rigid as ball ways)
 - + 40-Tool Double Arm ATC
 - + 1,417 IPM Rapid Rates
 - + 12,000 RPM Inline Direct-Drive Beltless "Big-Plus" Spindle
- + Spindle Chiller for Consistent Thermal Stability
 - + 300-PSI Through-the-Tool Coolant System
 - + Available as 4 + 1 or 5 Axis simultaneous

Axis Travel	X-Travel	34.64"	880 mm
	Y-Travel	23.62"	600 mm
	Z-Travel	19.97"	482 mm
	Spindle Nose to Rotary Table Surface	4.72" - 18.97"	120 – 480 mm
	Spindle Center to Z-axis way covers	22.44"	570 mm (throat dimension)
Tilting Rotary Table	Platter diameter	Ø 12.6"	Ø 320 mm
	Center bore diameter	Ø 50 H7	
	T-Slot width	12 mm H7 / 4	Hardened & ground table & T-slots
	Guide block width	18 mm	
	A-Axis Tilting Servo Motor	Mitsubishi HF-224T	
	C-Axis Rotary Servo Motor	Mitsubishi HF-104T	
	Torque	7 kg-cm2	
	Indexing resolution	0.001°	
	Feedback System A / C	Glass Scales (10 arc sec. resolution)	
	Tilting angle range	+30° - -111° (141° total range)	
	Brake Torque A / C	140 / 70 kg/m	
	Cutting Torque limit	25 kg/m	
	Rotational speed A / C	25.0 / 25.0 rpm	
	Transmission Ratio A / C	1:120 / 1:90	
	Work Load Capacity	330 lbs.	("A" Axis at 0-10 degrees)
Spindle	Work Load Capacity	220 lbs.	("A" Axis at 10-90 degrees)
	Maximum Part Swing	Ø16.3"	Ø 414 mm
	Spindle Motor – S1 / S2 / S3 = 7.5 / 11 / 15 kW	25-Horsepower Peak	20-HP 30-minute duty-rating
	Spindle Speed – Inline Direct-Drive	12,000 rpm	(15,000 rpm optional)
	Spindle Torque	90 ft-lb @ 1,500 rpm	
	Retention Knob (pull stud)	C40-4502H (coolant)	C40-4502S (solid)
Axis Feeds	Retention System / Holding Capability	Bellville Spring Stack	1,650-1,760 lbs.
	Spindle Runout	≤ 0.000040" T.I.R.	
	Accuracy X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.005 mm over 300 mm travel
	Repeatability X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.003 mm over 300 mm travel
	Least Input Command Increment	0.0001" / 0.000040"	0.001 mm / (40-millionths in metric)
	Rapid Traverse - X and Y	1,417 ipm	36 m / minute
	Rapid Traverse- Z	1,260 ipm	32 m / minute
	Cutting Feedrate	0.02 - 393 ipm	10 m / minute
Tool Changer	Axis Drive Motor Power - X, Y, Z	5-HP	3.5 kW
	Ballscrews – X, Y, Z	40 mm ballscrews with 12 mm pitch	
	Tool Capacity	40 Tool Twin-Arm	Chain-Drive Storage Rack
	Tool Shank	CAT#40 Taper	BT#40 optional
	Tool Change Time	2.8-sec. tool-to-tool	
	Maximum Tool Diameter / w/ adjacent tool	5.90" / 3.15"	150 mm / 80 mm
Specifications	Maximum Tool Length / Weight	11.81" / 15 lbs.	300 mm / 7 kg
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
	Air Service Requirements	85 psi @ 14-scfm	20 kg / cm²
	Coolant Capacity	97-gallons / 300 psi	367 liters / 20-bar
	Electrical Requirements - connected load	220 vac ±5%, 60-Hz	38 kVA
	Floor space requirements (W x D x H)	115" x 82" x 116"	(add 48" on left side for conveyor)
	Machine Weight	15,708 lbs.	7,120 kg
	Warranty – 1-year machine warranty		
		3-year Mitsubishi control, motors, & drives warranty	



5X-16

5-Axis High Precision 17.7" VMC with Probes, Glass Scales

- + Glass Scale Feedback on All 5-Axis
 - + Roller Bearing Ways (twice as rigid as ball ways)
 - + 40-Tool Double Arm ATC
 - + 1,417 IPM Rapid Rates
 - + 15,000 RPM Inline Direct-Drive Beltless "Big-Plus" Spindle
- + Spindle Chiller for Consistent Thermal Stability
 - + 300-PSI Through-the-Tool Coolant System
 - + Available as 4 + 1 or 5 Axis simultaneous

Axis Travel	X-Axis Travel	15.75"	400 mm
	Y-Axis Travel	13.78"	350 mm
	Z-Axis Travel	13.78"	350 mm
	Spindle Nose to Work Table Surface	5.9" – 19.68"	150 – 500 mm
	Spindle Center to Z-axis way covers	16.73"	425 mm (throat dimension)
	Maximum Workpiece Dimension	430 mm	430 mm diameter / 380 mm height
Spindle	Spindle Motor – 7.5 / 11 kW	20-Horsepower Peak	15-HP 30-minute duty-rating
	Spindle Speed	15,000 rpm Direct-Drive	
	Spindle Torque- Duel Winding Motor	70 ft-lb 0-1,500 rpm	(95.5 Nm)
	Spindle Taper Material / Hardness	SCM415 / HRC 58-62	
	Retention System / Holding Capability	Bellville Spring Stack	1,650-1,760 lbs.
	Spindle Runout	≤ 0.000040" T.I.R.	
	Spindle Bearings - Front	110 mm GMN, P4 class-2 bearings	
	Spindle Bearings – Rear	110 mm GMN, P4 class-2 bearings	
Axis Feeds	Rapid Traverse	X, Y, Z	1,417 ipm (36 m / minute)
	Cutting Feed rate	0.04 - 394 ipm	10,000 mm / min
	Axis Drive Motor Power – X, Y	4.7-HP	(3.5 kW)
	Axis Drive Motor Power - Z	4.7-HP	(3.5 kW) w/ brake
	Ballscrews – X, Y, Z	40 mm Diameter	12 mm pitch
	Least Input Command Increment	0.0001" / 0.000040"	0.001 mm / (40-millionths in metric)
Tool Changer	Tool Capacity	60-Tool Twin-Arm	High Speed Tool Changer
	Tool Shank	CAT#40 Taper	BT#40, HSK 63 optional
	Tool Change Time – Tool-to-Tool	3.2-sec. Tool-to-Tool	
	Maximum Tool Diameter / w/adjacent tool	3.93" / 2.95"	100 mm / 75 mm
	Maximum Tool Length (from gage line)	10"	250 mm
	Maximum Tool Weight	15 lbs.	7 kg
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
Specifications	Air Service Requirements	85 psi @ 14-scfm	6 kg/cm ²
	Electrical Requirements - connected load	65 kVA	220 vac ±5%, 60-Hz
	Coolant Capacity / Pressure	87 gallons / 300 psi	330 liters / 20-bar
	Machine Weight	16,534 lbs.	7,500 kg
	Warranty – 1-year machine warranty	3-year Mitsubishi control, motors, & drive warranty	



5X-24

Full 5-Axis Machining Capability

- +

Ø 25.6" Tilting Rotary Table
- +

Precision Glass-Scale Feedback on X, Y, Z, and B & C axis
- +

15,000 RPM Inline Direct-Drive Beltless "Big-Plus" Spindle
- +

1,417 IPM rapid rates in X, & Y axis for fast production
- +

60-Tool High-Speed Twin-Arm Tool Changer
- +

Roller-bearing style heavy-duty linear way system use on all linear axes

Axis Travel	X-Axis Travel	24.41"	620 mm
	Y-Axis Travel	20.47"	520 mm
	Z-Axis Travel	18.11"	460 mm
	Spindle Nose to Work Table Surface	5.51" – 23.62"	140 – 600 mm
	Spindle Center to Z-axis way covers	17.71"	450 mm (throat dimension)
	Maximum Workpiece Dimension	Ø20.47" x 13" tall	Ø520 x 330 mm tall
Spindle	Spindle Motor – S1 / S2 / S3 = 11/15 / 18.5 kW	25-Horsepower Peak	20-HP 30-minute duty-rating
	Spindle Speed	15,000 rpm Direct-Drive	(20,000 rpm optional)
	Spindle Torque- Duel Winding Motor	70 ft-lb 0-1,500 rpm	(95.5 Nm)
	Spindle Taper Material / Hardness	SCM415 / HRC 58-62	
	Retention System / Holding Capability	Bellville Spring Stack	1,650-1,760 lbs.
	Spindle Runout	≤ 0.000040" T.I.R.	
	Spindle Bearings - Front	110 mm NSK 70BNR2, P4 class-7 bearings	
	Spindle Bearings – Rear	110 mm NSK 70BNR2, P4 class-7 bearings	
Axis Feeds	Rapid Traverse	X, Y, Z	1,417 ipm (36 m / minute)
	Cutting Feed rate	0.04 - 394 ipm	10,000 mm / min
	Axis Drive Motor Power – X, Y	6-HP	(4.5 kW)
	Axis Drive Motor Power - Z	6-HP	(4.5 kW) w/ brake
	Ballscrews – X, Y, Z	40 mm Diameter	12 mm pitch
	Thrust Force – X, Y, Z (maximum / constant)	8,268 lbs. / 2,862 lbs.	65 Nm / 22.5 Nm
	Least Input Command Increment	0.0001" / 0.000040"	0.001 mm / (40-millionths in metric)
Tool Changer	Tool Capacity	60-Tool Twin-Arm	High Speed Tool Changer
	Tool Shank	CAT#40 Taper	BT#40, HSK 63 optional
	Tool Change Time – Tool-to-Tool	3.2-sec. Tool-to-Tool	
	Maximum Tool Diameter / w/adjacent tool	3.93" / 2.95"	100 mm / 75 mm
	Maximum Tool Length (from gage line)	10"	250 mm
	Maximum Tool Weight	15 lbs.	7 kg
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
Specifications	Air Service Requirements	85 psi @ 14-scfm	6 kg/cm ²
	Electrical Requirements - connected load	75 kVA	220 vac ±5%, 60-Hz
	Coolant Capacity / Pressure	106 gallons / 300 psi	400 liters / 20-bar
	Floor space requirements (W x D x H)	60" x 177" x 125"	405 x 450 x 315 cm
	Shipping dimensions (W x D x H)	97" x 102" x 115"	421 x 258 x 291 cm
	Machine Weight	21,384 lbs.	9,700 kg
	Warranty – 1-year machine warranty	3-year Mitsubishi control, motors, & drive warranty	



HSD-1000

Double Column Super Precision VMC

- + Heavy-Duty Double-Column Bridge-Style Construction. Like a CMM!
- + 15,000 RPM Inline Direct-Drive Beltless Spindle (other speeds available)
- + Dual contact precision ground Cat-40 spindle (HSK available)
- + 1,181 IPM rapid rates in all three axes for fast production
- + Super High-Speed CNC Control! 2,700 block look-ahead. 4,500 BPS!
- + 48-Tool Automatic Tool Changer
- + Optional 50 Nano-meter Linear Scale Resolution in X, Y, Z axes
- + Large X, Y, Z-axis travels for big work -40.15" x 33.46" x 19.68"

Axis Travel	X-Axis Travel	40.15"	1,020 mm
	Y-Axis Travel	33.46"	850 mm
	Z-Axis Travel	19.68"	500 mm (750 mm option)
	Spindle Nose to Work Table Surface	7.87" – 31.49"	200 – 800 mm
Table	Hardened & ground table & T-slots		
	Table Size (L x W)	47.24" x 39.37"	1,200 mm X 1,000 mm
	T-slot width (6 T-slots total)	30 mm	
	Max. Table Load (evenly distributed)	2,000 lbs.	900 kgs
Spindle	Spindle Speed	15,000 rpm	Spindle chiller included
	Spindle Cooling	Closed circuit refrigeration w/ digital temperature controller	
Axis Feeds	Rapid Traverse X, Y, & Z	1,181 ipm	30 m / minute
	Cutting Feed rate	0.04 - 590 ipm	1,498 mm / min
	Axis Drive Motor Power – X, Y	4.7-HP (3.5 kW)	Mitsubishi HF-345S-3000
	Axis Drive Motor Power - Z	4.7-HP (3.5 kW)	Mitsubishi HF-345BS w/ brake
	Ballscrews – X, Y, Z	50 mm Diameter	10 mm pitch R32-5B1-FDV
	Linear Guideways (X,Y,Z)	45 mm Heavy-Duty	Roller Bearing Linear Guideways
	Least Input Command Increment	0.0001" / 0.000040"	0.001 mm / (40-millionths in metric)
	Heidenhein Linear Scale Resolution	0.05 micro meter	50 nano-meter
Tool Changer	Tool Capacity	48-Tools	
	Tool Shank	CAT#40 Taper	Dual Contact (Shank & Flange)
	Tool Change Time	2.7-sec. Tool-to-Tool	
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
Specifications	Air Service Requirements	85 psi @ 5-scfm	7 kg/cm ²
	Electrical Requirements - connected load	220 vac ±5%, 60-Hz	45 kVA, 75 Amps
	Coolant Capacity / Pressure	82-gallons	310 liters
	Floor space requirements (W x D x H)	130" x 118" x 113"	330 x 300 cm (add 48" for conveyor)
	Machine Weight	28,665 lbs.	13,000 kg
Warranty	Warranty – 1-year machine warranty		
	3-year Mitsubishi control, motors, & drive warranty		



2416

24.01" x 15.75" 3 Axis High Speed Vertical Machining Center

- +

24 Tool High Speed Double Arm ATC
- +

1,417 IPM Rapid Rates
- +

12,000 RPM Double-Ground "Big-Plus" Spindle
- +

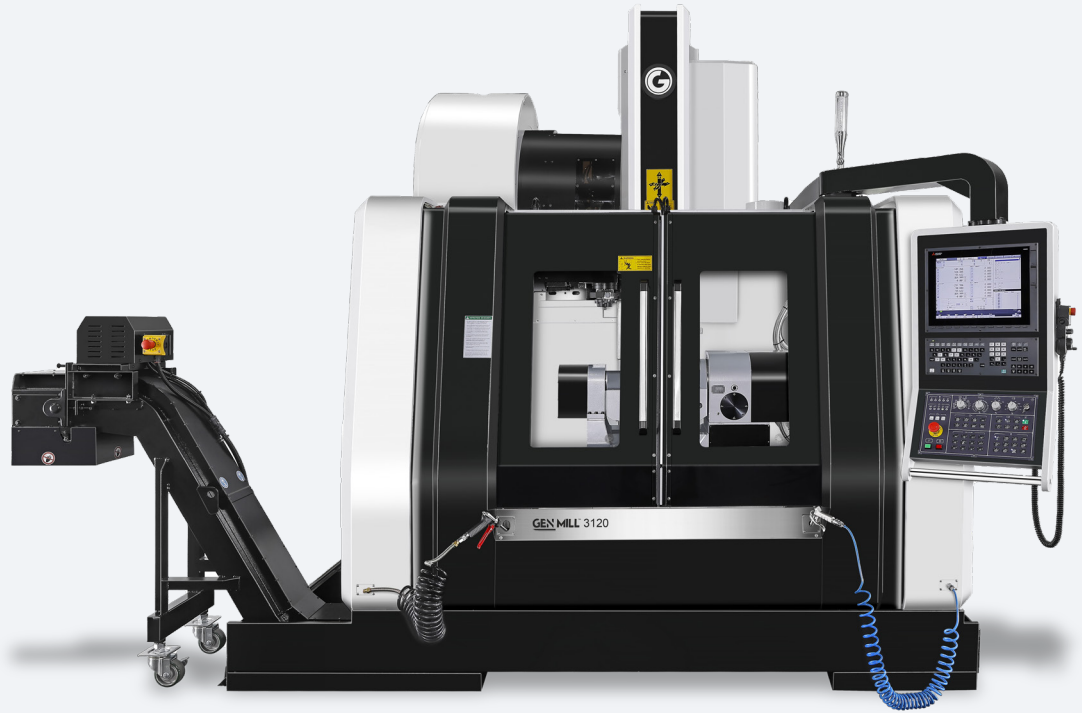
Spindle Chiller for Consistent Thermal Stability
- +

300-PSI Through-the-Tool Coolant System
- +

2,700 Block Look-Ahead High-Speed Machining
- +

4th & 5th Axis Wiring

Axis Travel	X-Axis Travel	24.01"	610 mm
	Y-Axis Travel	15.75"	400 mm
	Z-Axis Travel	17.72"	450 mm
	Spindle Nose to Work Table Surface	5.11" – 22.83"	130 – 580 mm
	Spindle Center to Z-axis way covers	15.35"	390 mm (throat dimension)
Table	Table Size (L x W)	25.59" x 15.75"	650 mm X 400 mm
	T-slot width (3 T-slots total)	18 mm on 100 mm centers	
	Max. Table Load	882 lbs.	400 kgs load
Spindle	Spindle Motor – S1 / S2 / S3 = 5.5 / 7.5 / 11 kW	15-Horsepower Peak	10-HP 30-min. duty-rating
	Spindle Speed – Inline Direct-Drive	12,000 rpm	15,000 rpm optional
	Spindle Taper Material / Hardness	SCM415 / HRC 58-62	
	Spindle Runout	≤ 0.000040" T.I.R.	
	Retention System / Holding Capability	Bellville Spring Stack	1,650-1,760 lbs.
Axis Feeds	Retention Knob (pull stud)	C40-4502H (coolant)	Japanese Standard
	Accuracy X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.005 mm over 300 mm travel
	Repeatability X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.003 mm over 300 mm travel
	Least Input Command Increment	0.0001" / 0.000040"	0.001 mm / (40-millionths in metric)
	Rapid Traverse - X, Y	1,417 ipm	36 m / minute
	Rapid Traverse- Z	1,260 ipm	32 m / minute
	Cutting Feedrate	0.02 - 393 ipm	10 m / minute
	Axis Drive Motor Power – X, Y	2.7-HP	2.0 kW
	Axis Drive Motor Power - Z	3.35-HP	2.5 kW
	Ballscrews – X, Y, Z	32 mm ballscrews	12 mm pitch
	Linear Ways – X, Y, Z	30 / 35 / 35 mm	Premium Cross-Roller
Tool Changer	Tool Capacity (24+1)	24-Tool Twin-Arm	Hi-Speed Tool Changer
	Tool Shank	CAT#40 Taper	BT#40 optional
	Tool Change Time	2.2-sec. Tool-to-Tool	
	Maximum Tool Diameter / w/ adjacent tool	5.90" / 3.15"	150 mm / 80 mm
	Maximum Tool Length (from gage line)	11.81"	300 mm
	Maximum Tool Weight	15 lbs.	7 kg
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
Specifications	Air Service Requirements	85 psi @ 14-scfm	
	Electrical Requirements - connected load	220 vac ±5%, 60-Hz	25 kVA
	Coolant Capacity / Pressure	68-gallons	256 liters
	Machine Weight	9,923 lbs.	4,500 kg
Warranty	Warranty – 1-year machine warranty		
	3-year Mitsubishi control, motors, & drive warranty		



3120

31.50" X 19.68" High Speed Vertical Machining Center

- + 12,000 RPM Direct-Drive Beltless Spindle
- + Belt Type Chip Conveyor with 38" barrel height discharge
- + Mitsubishi M830 CNC Control, 2,700 Block Look Ahead
- + 30-Tool High-Speed Twin-Arm Tool-Changer
- + 300 PSI "Through-the-Spindle" Coolant with rotary union
- + Chip Wash- Down System
- + Full Machine Enclosure w/ Top Covers & precut exhaust duct

Axis Travel	X-Axis Travel	31.496"	800 mm
	Y-Axis Travel	19.685"	500 mm
	Z-Axis Travel	19.685"	500 mm
	Spindle Nose to Work Table Surface	4.72" – 24.40"	120 – 620 mm
	Spindle Center to Z-axis way covers	20.27"	515 mm (throat dimension)
Table	Table Size (L x W)	37.40" x 19.68"	950 mm X 500 mm
	T-slot width (3 T-slots total)	18 mm on 100 mm centers	
	Max. Table Load	1,323 lbs.	600 kgs load
Spindle	Spindle Motor – S1 / S2 / S3	5.5 / 7.5 / 11 kW	
	Spindle Speed – Inline Direct-Drive	20-Horsepower Peak 12,000 rpm	15-HP 30-min. duty-rating 15,000 rpm optional
	Spindle Torque	50 ft-lb @ 1,500 rpm	
	Spindle Taper Material / Hardness	SCM415 / HRC 58-62	
	Spindle Runout	≤ 0.000040" T.I.R.	
	Retention System / Holding Capability	Bellville Spring Stack	1,650-1,760 lbs.
	Retention Knob (pull stud)	C40-4502H (coolant)	Japanese Standard
Axis Feeds	Accuracy X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.005 mm over 300 mm travel
	Repeatability X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.003 mm over 300 mm travel
	Least Input Command Increment	0.0001" / 0.000040"	0.001 mm / (40-millionths in metric)
	Rapid Traverse - X and Y	1,417 ipm	36 m / minute
	Rapid Traverse- Z	1,260 ipm	32 m / minute
	Cutting Feedrate	0.02 – 393 ipm	10 m / minute
	Axis Drive Motor Power – X, Y	2.7-HP	2.0 kW
	Axis Drive Motor Power - Z	4-HP	3.0 kW
	Ball screws – X, Y, Z	32 mm ballscrews	12 mm pitch
Tool Changer	Tool Capacity (30+1)	30-Tool Twin-Arm	Hi-Speed Tool Changer
	Tool Shank	CAT#40 Taper	BT#40 optional
	Tool Change Time	2.2-sec. Tool-to-Tool	
	Maximum Tool Diameter / w/ adjacent tool	5.90" / 3.15"	150 mm / 80 mm
	Maximum Tool Length (from gage line)	11.81"	300 mm
	Maximum Tool Weight	15 lbs.	7 kg
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
Specifications	Air Service Requirements	85 psi @ 14-scfm	
	Electrical Requirements - connected load	220 vac ±5%, 60-Hz	25 kVA
	Coolant Capacity / Pressure	68-gallons	256 liters
	Machine Weight	11,023 lbs.	5,000 kg
Warranty	Warranty – 1-year machine warranty		
	3-year Mitsubishi control, motors, & drive warranty		



4024

40.55" X 23.62" 3 Axis High Speed Vertical Machining Center

- +

30 Tool High Speed Double Arm ATC
- +

1,417 Inch per Minute Rapid Rates
- +

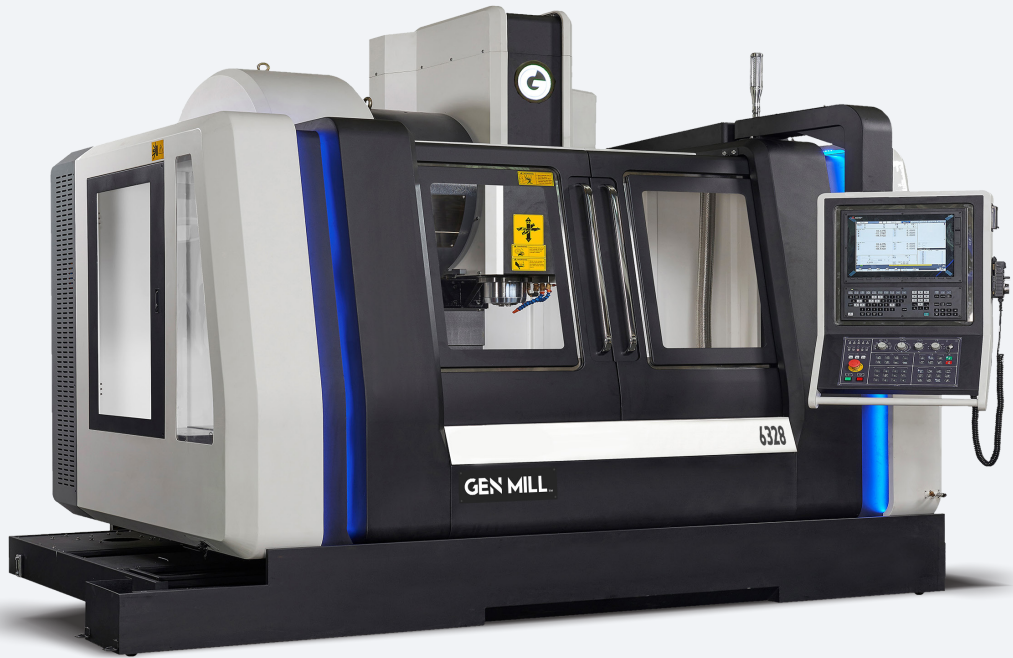
Spindle Chiller for Consistent Thermal Stability
- +

300 PSI Through-the-Tool Coolant System
- +

2,700 Block Look-Ahead High-Speed Machining
- +

4th & 5th Axis Wiring

Axis Travel	X-Axis Travel	40.55"	1,030 mm
	Y-Axis Travel	23. 62"	600 mm
	Z-Axis Travel	25.59"	650 mm
	Spindle Nose to Work Table Surface	5.1" – 30.56"	130 – 775 mm
	Spindle Center to Z-axis way covers	22.83"	580 mm (throat dimension)
Table	Table Size (L x W)	45.66" x 19.68"	1,160 mm X 500 mm
	T-slot width (3 T-slots total)	0.709" slot width	18 mm on 100 mm centers
	Max. Table Load	1,763 lbs.	800 kgs for full accuracy
Spindle	Spindle Motor – S1 / S2 / S3 = 5.5 / 7.5 / 11 kW	30-Horsepower Peak	25-HP 30-min. duty-rating
	Spindle Speed – Inline Direct-Drive	12,000 rpm	15,000 rpm optional
	Spindle Torque	110 ft-lb @ 1,400 rpm	
	Spindle Taper Material / Hardness	SCM415 / HRC 58-62	
	Spindle Runout	≤ 0.000040" T.I.R.	
	Retention System / Holding Capability	Bellville Spring Stack	1,650-1,760 lbs.
	Retention Knob (pull stud)	C40-4502H (coolant)	Japanese Standard
Axis Feeds	Accuracy X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.005 mm over 300 mm travel
	Repeatability X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.003 mm over 300 mm travel
	Least Input Command Increment	0.0001" / 0.000040"	0.001 mm / (40-millionths in metric)
	Rapid Traverse - X and Y	1,417 ipm	36 m / minute
	Rapid Traverse- Z	1,260 ipm	32 m / minute
	Cutting Feedrate	0.02 - 393 ipm	10 m / minute
	Axis Drive Motor Power – X, Y	5-HP	3.5 kW
	Axis Drive Motor Power - Z	5-HP	3.5 kW
	Ball screws – X, Y, Z	40 mm ballscrews	12 mm pitch
Tool Changer	Tool Capacity (30+1)	30-Tool Twin-Arm	Hi-Speed Tool Changer
	Tool Shank	CAT#40 Taper	BT#40 optional
	Tool Change Time	2.2-sec. Tool-to-Tool	
	Maximum Tool Diameter / w/ adjacent tool	5.90" / 3.15"	150 mm / 80 mm
	Maximum Tool Length (from gage line)	11.81"	300 mm
	Maximum Tool Weight	15 lbs.	7 kg
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
Specifications	Air Service Requirements	85 psi @ 14-scfm	
	Electrical Requirements - connected load	220 vac ±5%, 60-Hz	33 kVA
	Coolant Capacity / Pressure	97-gallons / 300 psi	367 liters / 20-bar
	Machine Weight	15,708 lbs.	7,120 kg
Warranty	Warranty – 1-year machine warranty		
	3-year Mitsubishi control, motors, & drive warranty		



6328

63.1" x 27.56" 3 Axis High Speed Vertical Machining Center

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Axis Travel	X-Axis Travel (6 cross-roller trucks)	63"	1,600 mm
	Y-Axis Travel (4 cross-roller ways w/ 8 trucks)	27.56"	700 mm
	Z-Axis Travel (Box Ways)	27.56"	700 mm
	Spindle Nose to Work Table Surface	5.9" – 31.5"	150 – 800 mm
	Spindle Center to Z-axis way covers	28.74"	730 mm (throat dimension)
Table	Table Size (L x W)	68.9" x 27.56"	1,750 mm X 700 mm
	T-slot width (5 T-slots total)	0.709" slot width	18 mm on 100 mm centers
	Max. Table Load	3,397 lbs.	1,500 kgs for full accuracy
Spindle	Spindle Motor – S1 / S2 / S3 = 15 / 18.5 / 26 kW	35-Horsepower Peak	25-HP 30-min. duty-rating
	Spindle Speed – Inline Direct-Drive	12,000 rpm	15,000 rpm optional
	Spindle Torque	110 ft-lb @ 1,400 rpm	
	Spindle Taper Material / Hardness	SCM415 / HRC 58-62	
	Spindle Runout	≤ 0.000040" T.I.R.	
	Retention System / Holding Capability	Bellville Spring Stack	1,650-1,760 lbs.
	Retention Knob (pull stud)	C40-4502H (coolant)	Japanese Standard
Axis Feeds	Accuracy X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.005 mm over 300 mm travel
	Repeatability X, Y, & Z axis (JIS6338)	± 0.0002" / 12"	± 0.003 mm over 300 mm travel
	Least Input Command Increment	0.0001" / 0.000040"	0.001 mm / (40-millionths in metric)
	Rapid Traverse - X and Y	944 ipm	24 m / minute
	Rapid Traverse- Z	944 ipm	24 m / minute
	Cutting Feedrate	0.04 - 393 ipm	10 m / minute
	Maximum Thrust Force	4,408 lbs.	2,000 kg
	Constant Thrust Force	2,204 lbs.	1,000 kg
	Ballscrews – X, Y	50 mm ballscrews	10 mm pitch
	Ballscrews – Z	40 mm ballscrews	10 mm pitch
Tool Changer	Tool Capacity (40+1)	40-Tool Twin-Arm	Hi-Speed Tool Changer
	Tool Shank	CAT#40 Taper	(CAT#50, BT#40/50 optional)
	Tool Change Time	2.8-sec. Tool-to-Tool	
	Maximum Tool Diameter / w/ adjacent tool	5.90" / 3.15"	150 mm / 80 mm
	Maximum Tool Length (from gage line)	11.81"	300 mm
	Maximum Tool Weight	15 lbs.	7 kg
	Tool Selection / Tool Access	Random access	Bi-directional shortest path
Specifications	Air Service Requirements	85 psi @ 14-scfm	
	Electrical Requirements - connected load	220 vac ±5%, 60-Hz	38 kVA
	Coolant Capacity / Pressure	148-gallons	560 liters
	Machine Weight	26,455 lbs.	12,000 kg
Warranty	Warranty – 1-year machine warranty		
	3-year Mitsubishi control, motors, & drive warranty		