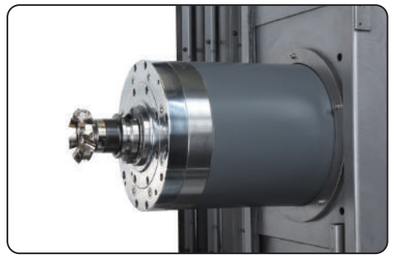
HS-450i *Standard Features*

- Large Travels: X 640mm × Y 610mm × Z 680mm
- Large Work Envelope: Ø785mm × 1,000mm
- One-piece Stepped Machine Base with Heavy Ribbed
- AVEREX-FANUC MPro III
- 15,000 rpm, 37 kW / 249 Nm **BIG-PLUS**® BBT-40 Spindle
- **Tsudakoma**® 0.001° Full 4th Axis Rotary Table
- 80 Tools Automatic Tool Changer (1 Sec. T-T)
- 60m/min Rapid Traverse
- 1G Acceleration and Deceleration
- **THK**® Roller Guide Ways
- **TSUBAKI**® core-cooled Ballscrews
- Thermal Compensation (Chilled Spindle, Ballscrews and Bearings)
- Pressurized Oil-Air Lubricated Spindle, Ballscrews and Guide Ways
- Mechanical Lock Pallet Clamping System with Air Seal Detection
- Air Cutting Through Spindle
- 30 Bar Through Spindle Coolant, Prepared for Optional 70 Bar
- Overhead Automatic Pallet Wash System & Z-axis Way Cover Wash
- Programmable Spindle Tool Load Monitoring
- Automatic Machine Power On / Off and Warm-up within 7 Days



Powerful Spindle



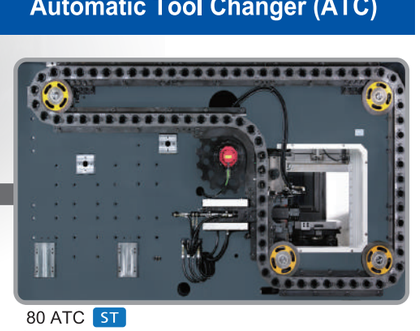
- 15,000 rpm / 37 kW / 249 Nm Max. Spindle Output
- 12,000 rpm / 48 kW / 287 Nm Max. Spindle Output (Optional)
- 20,000 rpm / 22 kW / 60 Nm Max. Spindle Output (Optional)

AVEREX-FANUC MPro III / NC Standard Features

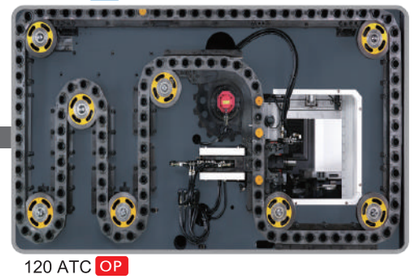


- 10.4” Color LCD
- AICC II Nano Control with 200 Blocks Look Ahead
- JERK Control
- HRV-III+ High Performance Servo Drives
- Full 4 axes Control
- 300 Pairs Workpiece Coordinate Offsets
- Helical Interpolation G02 / G03
- Circular Interpolation G02 / G03
- Rigid Tapping M29
- Canned Cycle G73 / G74 / G76 / G80 to G89
- Ethernet and CF/USB Device
- Tool Life Management
- Tool Offset Memory C
- 200 Pairs Tool Offsets
- Manual Guide i
- 1,280 meter Part Program Memory
- Custom Marco B
- 1,000 Registerable Programs
- Programmable Spindle Tool Load Monitoring M37 / M38
- Programmable Data Input G10 / G11

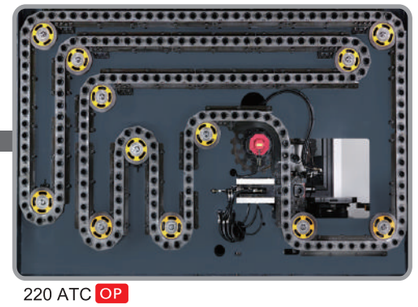
Automatic Tool Changer (ATC)



80 ATC ST

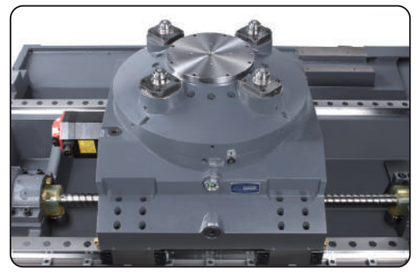


120 ATC OP

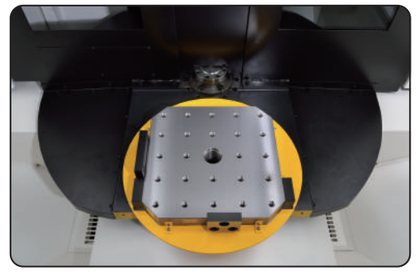


220 ATC OP

Automatic Pallet Changer (APC)



0.001° Full 4th Axis Rotary Table



5 Sec. Pallet changing



HS-450i 2 APC with 80 Tools



6 Pallet Pool Expansion Unit

Multi-pallet Expansion, Fast, Easy & Affordable

Start with the standard HS-450i (2APC, 80 Tools) and expand to 6 pallets with 120 or 220 tools storage capacities as needed to boost production efficiency.



HS-450i with AVEREX-FANUC MPro III SPECIFICATIONS

	DESCRIPTIONS	IMPERIAL	METRIC
TRAVEL	X-axis, Y-axis, Z-axis	25.2", 24.0", 26.8"	640 mm, 610 mm, 680 mm
	Spindle center to pallet surface	2.0" - 26.0"	50 - 660 mm
	Spindle nose to pallet center	3.9" - 30.7"	100 - 780 mm
	Pallet top height (from the floor)	43.3"	1,100 mm
TABLE	Table size (2 pallets)	15.7" x 15.7" 19.7" x 19.7" Optional	400 mm x 400 mm 500 mm x 500 mm Optional
	Workpiece max. size	Ø30.9" x 39.4" for 2APC Ø30.9" x 35.4" for 6APC	Ø785 mm x 1000 mm for 2APC Ø785 mm x 900 mm for 6APC
	Max. payload	1,210 lb	550 kg
	Configuration	M16x25L P=3.1" (P=3.9" for 500 mm pallet)	M16x25L P=80mm (P=100 mm for 500 mm pallet)
	Min. indexing degree	0.001°	0.001°
	Indexing speed	1.1 sec. /90 °	1.1 sec. /90 °
	Pallet clamping system	Mechanical Lock	Mechanical Lock
	Pallet clamping force	8,642 lb-ft	3,920 kgf
	B-axis clamping torque	2,582 lb-ft	3,500 Nm
SPINDLE	Spindle speed	40-15,000 rpm / 40-20,000 rpm (Optional)	40-15,000 min^{-1} / 40-20,000 min^{-1} (Optional)
	Spindle rated torque	184 lb-ft (S3 15%) 110 lb-ft (Cont.)	249 Nm (S3 15%) 150 Nm (Cont.)
	Spindle acceleration / deceleration	3.2 sec. (0-15K rpm) / 3.3 sec. (15K-0 rpm)	3.2 sec. (0-15K min^{-1}) / 3.3 sec. (15K-0 min^{-1})
	Spindle taper	ISO 7/24 Taper NT No. 40	ISO 7/24 Taper NT No. 40
	Through spindle coolant	435 psi	3.0 MPa
FEED	Rapid feed (X/Y/Z)	2,362 ipm	60,000 mm/min
	Cutting feed (X/Y/Z)	1,575 ipm	40,000 mm/min
	Table rotating speed	33.3 rpm	33.3 min^{-1}
	Guide ways (X/Y/Z)	Roller ways	Roller ways
	Acceleration (X/Y/Z)	1 G	1 G
	Ballscrews size	Ø1.5747"	Ø40 mm
ATC	Type of tool shank	BBT-40 / CAT-40, DIN-40 (Optional)	BBT-40 / CAT-40, DIN-40 (Optional)
	Type of pull-stud	JIS / DIN 69872 (Optional)	JIS / DIN 69872 (Optional)
	Number of tools	80 / Optional 120, 220	80 / Optional 120, 220
	Max. tool diameter (Adjacent pots full / empty)	Ø3.7" / Ø7.2"	Ø95 mm / Ø185 mm
	Max. tool length	15.7"	400 mm
	Max. tool weight	17.6 lb	8 kg
	Tool selection system	Random / Fixed	Random / Fixed
	Tool to tool	1 sec. (2.1 : Heavy tool programmable)	1 sec. (2.1 : Heavy tool programmable)
	Chip to chip	3.4 sec. (4.4 : Heavy tool programmable)	3.4 sec. (4.4 : Heavy tool programmable)
APC	Number of pallets	2, Optional 6	2, Optional 6
	Pallet change system	Rotation	Rotation
	APC exchange time	5 sec.	5 sec.
MOTOR	Spindle motor	50 / 20 hp	37 / 15 kW
	Feed axes motors (X/Y/Z/B)	6.0 / 7.3 / 6.0 / 3.6 hp	4.5 / 5.5 / 4.5 / 2.7 kW
	Lubrication pump motor	0.024 hp	18 W
	Spindle coolant pump	2.1 hp	1.58 kW
	Chips flush (base) coolant pump	0.25 hp	0.35 kW
	Through spindle coolant pump	3.0 hp	2.24 kW
	Overhead shower flush coolant pump	2.1 hp	1.58 kW
	Hydraulic pump	3.0 hp	2.23 kW
	Spindle oil chiller	2.6 hp	1.95 kW
SUPPLY	Electric voltage	200 - 230 volt	200 - 230 volt
	Electric power supply	50 kVA	50 kVA
	Air pressure	87.0 psi	0.6 MPa
	Air volume	132 gal/min	500 liter/min
TANK	Hydraulic unit tank	15.9 gallon	60 liters
	Coolant tank	198.1 gallon	750 liters
	Lubrication unit tank	0.47 gallon	1.8 liters
SIZE	Machine dimension (L x W x H)	186.2" x 104.7" x 102.4"	4,730 x 2,660 x 2,600 mm
	Required floor space (L x W x H)	211.6" x 152.8" x 102.4"	5,375 x 3,880 x 2,600 mm
	Machine weight	25,740 lb	11,700 kg

Specifications subject to change without notice.

Standard Accessories

- Full chip enclosure
- High quality 3-axes telescopic way covers
- Safety door
- Sealed electric cabinet
- Heat exchanger for electric cabinet
- Chiller for spindle and x/y/z axes
- Central oil-air lubrication system
- Air through spindle (cutting)
- Spindle air seal
- Spindle air blow (ATC)
- Cutting air blow
- 30 Bar through spindle coolant, prepared for optional 70 Bar
- Flood coolant system
- Oil skimmer
- Floating ball type level detection for coolant tank
- Dual chip augers
- Manual Guide i
- Multi-language display
- Programmable spindle tool load monitoring
- Programmable ATC speed (heavy tools)
- Automatic power on / off and warm-up within 7 days
- 3-color machine status indicator
- Fluorescent lamps at operation and loading station
- Leveling blocks and screws
- Maintenance tools
- Manuals

Optional Accessories

- 6 pallet APC
- 120T or 220T tools magazine
- Chip conveyor and chips cart
- 500 mm x 500 mm pallet
- Hydraulic overhead arms for fixtures
- A/C for heat exchanger of E-cabinet
- Linear scale (X/Y/Z/B)
- Workpiece measurement
- Tool measurement
- Tool breakage detection
- Chiller for coolant tank
- Oil mist collector
- Rotary wiper
- Energy-saving function
- CE certified EN ISO 13849-1
- Tool shank and pull stud

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08/2017

AVEREX



HS-450i

Ultimate High Speed Horizontal Machining Center