



Specification of AVEREX HS-450i Plus

Machine Model		Averex HS-450i	Averex HS-450i Plus	
Controller		AVEREX-FANUC MPro III (31i-MB)	AVEREC-FANUC MPro I (0i-MF) Opt. AVEREX-FANUC MPro III (31i-MB)	
Travels	X / Y / Z	640x610x680 mm	700×740×680 mm	
	Distance between Pallet surface and Spindle center	50 - 660 mm	50 - 790 mm	
	Distance between Pallet center and Spindle nose	100 - 780 mm	100 - 780 mm	
	Table top height (from the floor)	1,100mm	Ditto	
Spindle		Std. #40	Std. #40	Opt. #50
	Spindle speed	15,000 rpm	Ditto	10,000 rpm
	Spindle Speed Option	Opt. 12k, 20k	Ditto	
	Spindle power	Con.: 15 kW	Ditto	Con.:22 kW
		30 min: 18.5 kW		30 min: 26 kW
		15 min: 22 kW		15 min: 30 kW
		2 min: 35 kW		5 min: 30 kW
	Spindle torque	Con.: 100 Nm	Ditto	Con.: 140 Nm
		30 min: 125Nm		30 min: 166 Nm
		15 min: 150 Nm		15 min: 191 Nm
		2 min: 200 Nm		5 min: 286 Nm
	Spindle taper	BBT40	Ditto	BBT50
	Spindle clamping force	9,800 N (1,000kg)	Ditto	19,600 N (2,000kg)
Rotary Table	4th Axis Rotary Table Builder		AUTOCAM AT400H	
	Type	Worm Gear	Roller Cam	
	Table size	400 mm x 400 mm	Ditto	
		M16x25L P=80 mm		
		Opt: 500 mm x 500 mm		
		Opt. M16x25L P=100 mm		
	Max. load capacity	500 kg	Ditto	
	Workpiece max. diameter	785 mm	Ditto	
	Workpiece max. height	1,000 mm 2APC (Opt.900mm 6APC)	Ditto	
	Indexing degree	0.001°	Ditto	
	Indexing speed	1.6 sec/90°	T.B.D.	
	Table clamping Method	Mechanical-Ball Lock with 6 balls	Ditto	
	Table clamping force	39,200 N [9,800 N x 4 cones]	Ditto	
	B-axis braking torque	3,500 Nm	5,000 Nm	
	Table rotating speed	33.3 rpm	66.6 rpm	
	Rotating torque	1,080 Nm	1,914 Nm	
	B axis motor	2.7 kW/200Hz a12/4000is [3.62hp/60Hz]	a22iF/4000is	
Axis/Feed	Rapid feed (X/Y/Z axis)	60,000 mm/min	74,000 mm/min	
	Cutting feed (X/Y/Z axis)	1~20,000 mm/min	1-40,000 mm/min	
	Acceleration/Deceleration (X/Y/Z axis)	1G/1G/1G Plus	1G/1G/1G	
	Thrust force	11,760N	Ditto	
	Guide Way Type	X,Y,Z Roller ways [THK]	Ditto	
	Rail width (X/Y/Z axis)	45 / 35 / 45 mm	45 / 45 / 45 mm	
	BallscREW Maker	Tsubaki-Japan	Tsubaki-Japan (Through Center Chilling)	
	BallscREW diameter x pitch (X/Y/Z axis)	40xP20 mm	Ditto	
	BallscREW Nut Type	Custom Double internal	Ditto	
	Feed axes motors (X/Y/Z)	X: 4.5 kW/200Hz a22/4000is [6 hp/60Hz]	Ditto	
		Y: 5.5 kW/200Hz a30/4000is [7.3 hp/60Hz]		
		Z: : 4.5 kW/200Hz a22/4000is [6 hp/60Hz]		
ATC	Double Arm interchange unit builder	Japan Otsuka	Taiwan AUTOCAM	Taiwan Gizin
	Pull stud	CAT 40 /OPT. JIS 40P	Ditto	JIS50P /DIN69872-50
	Tool shank	CAT 40 (Opt : BBT 40)	Ditto	BBT 50 (Opt. CAT 50)
	Tool magazine capacity	80T (Opt: 120T, 220T) (Chain Tyne)	Ditto	60T (Opt: 80T, 100T) (Chain Tyne)
	Max. tool diameter * length	95x400 mm	Ditto	125x600 mm
	Max. tool diameter w/adjacent pocket empty	182x400 mm	Ditto	300x600 mm
	Max. tool weight	8 kg	Ditto	15 kg (Heavy: 25 kg)
	Tool selection system	Fixed/ Random	Ditto	T.B.D.
	Large Diameter Tool Change	Tool diameter larger than 95mm	Ditto	Tool diameter larger than 125mm
	Tool change time (tool to tool)	1.0 sec (normal tool)	Ditto	2.0 sec (normal tool)
		2.1 sec (heavy tool)	Ditto	3.0 sec (heavy tool)
		3.0 sec (normal tool)	Ditto	T.B.D.
	Tool change time (chip to chip)	3.5 sec (heavy tool)	Ditto	T.B.D.
	ATC magazine motor	1.8 kW/200Hz β12/3000is [2.4 hp/60Hz] (OPT. 220T β22/3000is)	Ditto	
	Number of pallets	2 or (6 optional)	Ditto	
APC	Pallet change mode	Rotation	Ditto	
	APC time	7 sec	Ditto	
Motors	Lubrication pump motor	18 W/60Hz [0.024 hp/60Hz]	Ditto	
	Spindle coolant pump	1.62 kW/60Hz [2.2 hp/60Hz]	Ditto	
	Chip coolant pump	0.62 kW/60Hz [0.8 hp/60Hz]	Ditto	
	CTS coolant pump	2.24 kW/60Hz [3.0 hp/60Hz](30bar)	Ditto	
	Shower flush pump	1.29 kW x2/60Hz [1.7 hp x2/60Hz]	Ditto	
	Spindle oil chiller	1.95 kW/60Hz [2.6 hp/60Hz]	5.4 kW (EOCA-240, Dual pump) (24,000 BTU, 6,000 kcal/hr)	
		(12,000 BTU, 3,000 kcal/hr)		
	Hydraulic pump	2.23 kW/60Hz [3.0 hp/60Hz]	Ditto	
Thermal Compensation		HBO-750	Taiwan Spinflo EOCA-240 (Dual Pump)	
	Base Mounted Thermal sensor	standard	Ditto	
	Chilled BallscREws	-	standard (Through center chilling)	
	Chilled BallscREW bearings	standard(Sleev Chilled)	Standard(Bearings Chilled)	
	Chilled BallscREW nuts	standard	Ditto	
	Chilled Y Servo Motor Housing	standard	Ditto	
	Chilled Spindle Motor Housing	standard (air)	Ditto	standard air (Opt.oil)
	Oil chiller for spindle Cartridge	standard	Ditto	
Fluid Capacities / Power	Coolant tank	550 L	Ditto	
	Centralized Lubrication unit tank	1.8 L	1.8 L [0.47 gal]	
	Hydraulic unit tank	60 L	60 L [15.9 gal]	
	Power supply requirement	50 KVA, 200-230V	T.B.D.	
		50 KVA for 6APC machine	T.B.D.	
	Air pressure requirement	0.6 MPa	Ditto	
Casting		500 L/min	Ditto	
	Casting Type	One Piece Stepped Casting	Ditto	
	Casting size	3/4" Thickness	Ditto	
	Casting Grade: Base - Tensile Strenght Kg/mm²	FC 30 - 32Kg/mm²	Ditto	
	Casting Grade: Spindle Head / Pallets / APC arm/Column- Tensile Strenght Kg/mm²	FCD 600 - 60Kg/mm²	Ditto	
Standard Equipments	Fully enclosed chip/splash cover	standard	Ditto	
	Oil skimmer	standard	Ditto	
	Auto Power On and Machine Warm-up	standard	Ditto	
	Auto Power Off	standard	Ditto	
	Air through spindle (cutting)	standard	Ditto	
	Spindle air seal	standard	Ditto	
	Spindle air blow	standard	Ditto	
	Cutting air blow	standard	Ditto	
	CTS form A (435 psi/30 bar)	standard	Ditto	
	Automatic centralized lubrication (Oil and air system)	standard	Ditto	
	Flood coolant system	standard	Ditto	
	X axis guide-way covers with upper and lowerclinearway supports	standard	Ditto	
	Sealed electric cabinet	standard	Ditto	
	Heat exchange for electric cabinet	standard	Ditto	
	Safety door	standard	Ditto	
	Leveling blocks and screws	standard	Ditto	
	3-color indication light	standard	Ditto	
	Equipped with a rotary union and pipes for conversion to CTS (1,000 psi/70 bar).	standard	Ditto	
		standard	Ditto	
	Fluorescent lamps	standard	Ditto	
	Maintenance tool	standard	Ditto	
	Manuals	standard	Ditto	
Optional Features	6 pallet APC	Available	Ditto	
	Tool magazine capacity	80T (Opt. 120T, 220T)	Ditto	60T (Opt: 80T, 120T)
	Chip conveyor and chip auger disposal direction	Front-left	Front-left (Opt. Rear-rear)	
	Chip conveyor type	4 types: Steel belt, Scraper, Dual belt, Magnetic scraper	Ditto	
	500 mm x 500 mm pallet	Optaion	Ditto	
	Tool shank	BBT 40 (taper)	Ditto	BBT 50 (Opt. CAT 50)
	Pull stud	JIS 40P	Ditto	JIS50P /DIN69872-50
	A/C cooler for electric cabinet	option	Ditto	
	Linear scale	option	Ditto	
	Hydraulic overhead arms for fixture	option	Ditto	
Size	Height	2,600 mm	Ditto	T.B.D.
	Floor space W xD (Chip conveyor excluded)	2,688 x 4,730 mm(2APC/80-120-220T)	Ditto	T.B.D.
	Max. floor space WxDxH (chip conveyor included)	3,548x4,730x2,600 mm(2APC/80-120-220T)	2,660x5,930x2,600 mm(2APC/80-120-220T)	T.B.D.
	Weight	11,645 kgs(2APC/120T)	T.B.D.	T.B.D.