

1.0 Machine Capacity

Table Working Surface	50" x 24"	1270mm x 610mm
T-Slots	5 x 0.71" On 3.94" centers	5 x 18mm On 100mm centers
Maximum Load		
With Uniform Distribution	3000 lbs.	1360 kg.
Enclosure Door Opening	48"	1220mm
Spindle Center To Column	27.6"	700mm
Spindle Nose To Table		
Minimum/Maximum	6" / 30"	152mm / 762mm

(For table and machine clearances, please see attachment "B")

2.0 Spindle

Type	Cartridge, #40 Taper
Speeds	0-12000 rpm
Bearings	ABEC Class 7 angular contact
Bearing Lubrication	Grease packed
Spindle Motor	AC Induction Motor, Dual winding, Fan cooled
Spindle Drive	200VAC, 3 Phase, 50/60 Hz, Regenerative Braking
Spindle Taper	#40
Spindle HP-Peak (1 min. Rating)	24 HP (18 kW)
15 min. Rating	20 HP (15 kW)
-Continuous	15 HP (11 kW)
Spindle Torque-Peak (1 min. Rating)	175 lbs.-ft (237 Nm) at 720 RPM
15 min. Rating	146 lbs.-ft (198 Nm) at 720 RPM
-Continuous	87.5 lbs.-ft (119 Nm) at 900 RPM
Drive Belt Ratio	1:1.2 Standard
Belt Type	Herringbone, Eagle Pd
Maximum Speed	12000 rpm
Spindle Acceleration Time	0-12000 rpm in 6.5 seconds
Spindle Deceleration Time	12000-0 rpm in 5.5 seconds
Spindle Orientation	Electronic - Spindle motor encoder
Spindle Air Purge	Standard (top and bottom)
Spindle Air Blast	Standard
Spindle Configuration	Cartridge-type, flange mounted

(For spindle, see attachment "C". For spindle Torque/HP, chart, see attachment "E")

3.0 Movement and Ranges

Longitudinal (X) axis	42"	1067mm
Cross (Y) axis	24"	610mm
Vertical (Z) axis	24"	610mm
Floor to Table Surface	35"	889mm

4.0 Position/Feed Rates

Rapid Traverse Rate:

X axis	1378 inches per minute	35m/minute
Y axis	1378 inches per minute	35m/minute
Z axis	1181 inches per minute	30m/minute

Cutting Feed Rate:

X axis	600 inches per minute	15.2 m/minute
Y axis	600 inches per minute	15.2 m/minute
Z axis	600 inches per minute	15.2 m/minute

Programming Resolution	0.0001"	0.002mm
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5.0 Automatic Tool Changer

Number of Stations	24	
Number of Stations (Optional)	40	
Maximum Tool Diameter	3.2"	80mm
Maximum Tool Diameter (Adjacent Sides Empty)	4.7"	120mm
Tool Pocket Pitch	3.2"	81mm
Tool Pocket Pitch (Optional)	3.0"	76.2mm
Maximum Tool Length	11.8"	300mm
Maximum Tool Weight	15 lbs.	7.0 kg.
Maximum Tool Weight in Magazine	180 lbs.	82 kg.
Tool Adapter	ANSI Standard V-Flange	

ATC Time:

Tool to tool next station	3 seconds
Chip-to-Chip, 2000 rpm, 12" Z travel	7 seconds
Tool Selection System	Random pot, bi-directional, swing arm
Retention Knob	See attachment "D"

Note:

Tools to be loaded in the Automatic Tool Changer by using the spindle. Do not manually load tools directly into the Automatic Tool Changer. Tools must be loaded in correct orientation.

6.0 Axis Movement

Axis Motors Torque:

X	AC Cont/Peak	74 lbs.-in/207 lbs.-in (8.4/23.4 Nm)
Y	AC Cont/Peak	102 lbs.-in/254 lbs.-in (11.5/28.7 Nm)
Z	AC Cont/Peak	252 lbs.-in/630 lbs.-in, with brake (28.5/71.1 Nm)

Axis Thrust: Peak

X	2457 lbs.	10.9 kN
Y	3015 lbs.	13.4 kN
Z	5340 lbs.	23.7 kN

Axis Thrust: Continuous

X	878 lbs.	3.9 kN
Y	1210 lbs.	5.4 kN
Z	2137 lbs.	9.5 kN

Ball Screw Diameter

X	1.57"	40mm
Y	1.57"	40mm
Z	1.57"	40mm

Ball Screw Pitch

X	.63"	16mm
Y	.63"	16mm
Z	.63"	16mm

Ball Screw Mounting

X, Y and Z Double Nut Pre-Loaded Anchored on Both Ends, Pre-Stretched

Ball Screw Drive System

X & Y 1.4:1 Ratio belt driven
Z Direct drive

Encoder

Drive motor mounted

Guideway Systems:

X	Precision linear ball rails size 45
Y	Precision linear roller rails size 45
Z	Precision linear ball rails size 45

Bearing Trucks in X axis	4 total, 2 per rail	
Bearing Trucks in Y axis	4 total, 2 per rail	
Bearing Trucks in Z axis	4 total, 2 per rail	
Distance between X axis ways (centers)	13.4"	340mm
Distance between Y axis ways (centers)	26.8"	680mm
Distance across Z axis ways	17.8"	452mm

(Telescoping way covers used over all exposed ways)

7.0 Accuracy (at 68° F)

Positioning Accuracy (JIS B 6338)	+/-0.0001"	+/-0.0025mm
Positioning Accuracy (10 Pass VDI - 3441 method)	0.0004"	0.010mm
Repeatability (10 Pass VDI - 3441 method)	0.0002"	0.005mm
Circularity 6.00" [152.4 mm] Dia.	0.0005"	0.013 mm

(At final assembly, all machines are laser mapped, contour balanced with ball bar check, and run a capacity cutting test.. Therefore, the machine is capable of producing these accuracies. If at installation, the machine cannot achieve these accuracies, Hurco will determine the reason for non-attainment. If the reason is mechanical components, these will be replaced under the warranty. If the reason is improper transportation or rigging, the customer will be charged at normal service rates.)

8.0 Draw Bar Actuation

Type	Air/Oil Cylinder
Stroke	.43" (11mm)
Maximum Force to Unclamp	5395-5845 lbs. (24-26 kN)
Air Supply	85-90 PSI (6 bar)
Maximum Clamping Force	2473-2923 lbs. (11-13 kN)
Draw Bar Type	Gripper fingers, Disc springs

9.0 Machine Dimensions

Shipping Dimensions

Width	116.1"	2950mm
Depth	90.6"	2300mm
Height	100"	2540mm

Operating Dimensions

Width	182.9"	4645mm
Depth [SSM]	127.6"	3241mm
Depth [DSM]	147.6"	3750mm
Height	109"	2770mm
Machine Weight (approximate)	14525 lbs.	6590 kg.
Machine Weight (Optional 40 station)	15185 lbs.	6890 kg.
Shipping Weight (approximate)	15075 lbs.	6840 kg.
Shipping Weight (Optional 40 station)	15740 lbs.	7140 kg.

(See attachment "A" for machine envelope dimensions)

10.0 Lubrication

Type	Positive displacement by electric pump
Lubrication Type	See Attachment `F`
Lubrication Volume	2 liter reservoir with float switch to maintain liquid level. Tank should last 80 hours before refilling.
Lubrication pump	115 VAC, single phase, electric pump with maximum discharge of 3 cc/cycle - 4 cycles per hour
Maximum pump pressure	42 PSI (2.9 bar)

11.0 Coolant Facilities

Coolant Tank Capacity	90 gallons	340 liters
Flood Pump Rating	11 gallons/minute	41 liters/minute
Flood Pump Size	0.89 HP	0.66 kW
Wash Down Pump Rating	50 gallons/minute	190 liters/minute
Wash Down Pump Size	2.4 HP	1.81 kW

12.0 Machine Enclosure

Full Chip and Coolant Enclosure	Standard	
Enclosure Door Opening	48"	1220mm
Left Side (ATC door) Hinged Door w/Latch (L x H)	27.4" x 34.3"	697mm x 871mm
Right Side Hinged Door (L x H)	41.6" x 34.3"	1057mm x 871mm
Worklights Dual	(1) Left side	(1) Right side
Chip Pan	N/A	
Washdown System	Standard	
Chip Conveyor	Standard with pull-out cart	

(See attachment "A" for machine enclosure information.)

13.0 Service Requirements

KVA Rating	38	
Voltage Required	200-240 VAC / 60 Hz	
Air Requirements	5 CFM @ 80-100 psi	0.14 M ₃ /min. @ 6-8 bar

IMPORTANT:

As with all computer equipment, it is vital that the incoming power be free from high or low voltages, spikes, surges, and noise. The following are the extremes from normal constant RMS sinusoidal supply voltages the system can tolerate:

Frequency.....	47-63 Hz
Impulse Voltage	200 percent peak voltage up to one msec duration. One (1) pulse per half cycle maximum.
Voltage Drop	Reduction of 20 percent for one cycle or reduction of 50 percent per half cycle. One (1) drop per second maximum. Deviation from constant voltage will not exceed $\pm 10\%$ of input voltage. Failure to provide required power parameters may affect warranty.

List of Attachments

Machine Envelope _____	Attachment A
Table and Clearance _____	Attachment B
Spindle Assembly _____	Attachment C
Tool Holder and Retention Knob _____	Attachment D
Spindle Torque/HP Charts _____	Attachment E
Machine Oil Specifications _____	Attachment F
Machine Performance Specification _____	Attachment G