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※ All performance are based on 220V/3PH/60HZ. Specification are subject to change without notice.

LEADWELL

LEADWELL CNC MACHINES MFG.,CORP.

V-20iT/V40iT

5 AXES MACHINING CENTER

The Ultimate in Performance

V20iT/V40iT SERIES

High-speed/High-precision 5 AXES MACHINING CENTER

FEATURE

◆ MORE High Technology of Milling and Machining

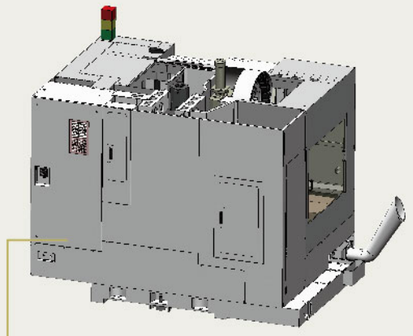
- The V-20*i*T/V-40*i*T optimally concentrate the machining process for multiface, intricately shaped parts, and some difficult position of workpiece where 3-axis can't overcome, such as under cut.
- Facilitates muliface machining in one chuck to reduce setup work, fixture making and improve the efficiency.
- For depth mould, V-20*i*T/V-40*i*T still can keep high efficiency machining by setting a suitable angle of tool, shorten the length of tool holding.
- Avoiding accumulative error from series machining procedure, decreasing total cutting time that substantially achieve the request:High Speed, High Accuracy, High Efficiency.
- 3-axis program still can run under constant position setting for A/C axis (without any cutting interference)

Swivel Operator Panel

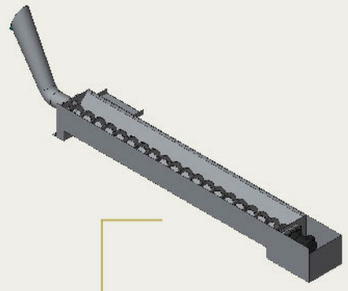
The operator panel swivels for better operator convenience.

Look into these outstanding features integrated in the Leadwell V20iT/V40iT SERIES

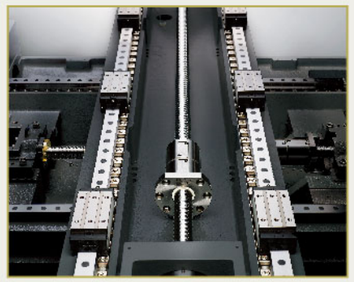
- We use high rigid cast iron construction with closed type design.
- Machine stable design supporting by big span saddle and foundation screws.
- Without counter weight enhance the accuracy on mold making as well as avoid vibration.
- Z axis transmission end fixed, as well as ball screw pretension, which enable to reduce the temperature.
- Easy chip removal front type by using two auger chip conveyor system.
- Rapid traverse 36 M/minute at least
- Special filtration tank unit
- Friendly design of operation control panel



Complete beauty back design.



Easy chip disposal front type chip conveyor. (STD.)



The Roller Type Linear Guide Way

V20iT/V40iT series equip with roller type linear guide way can provide higher rigidity and make the movement more smooth and stability, especially for the request of high accuracy and heavy load.

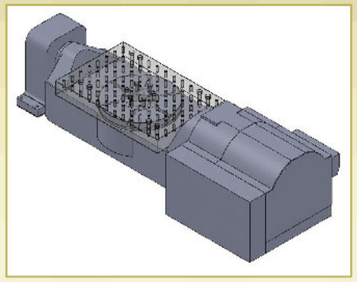
Cartridge Type Spindle

The heavy-duty spindle utilizes FAG, NSK or SKF bearings to allow heavy cutting. Oversized disk springs used to hold the tool in the spindle are tested for long life. The high retention force of the springs reduce tool movement, improve tool life, allow heavier cutting, reduce chatter, & create a better part finish. This spindle is prepared to easily add the CTS option.

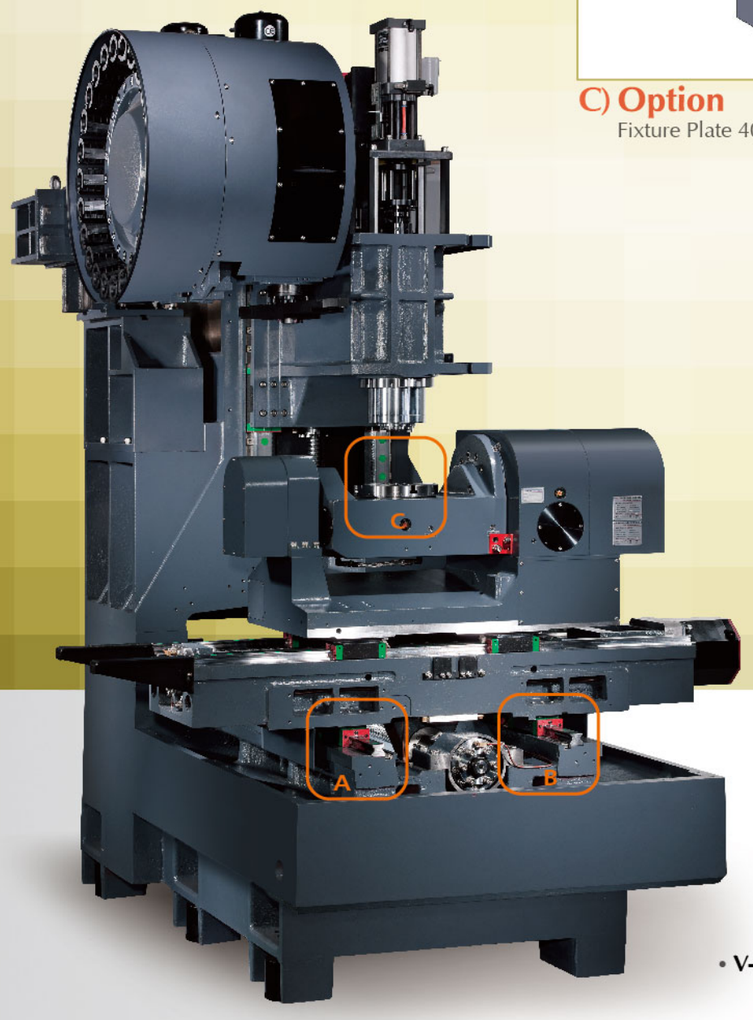
V20iT/V40iT SERIES
RIGID CONSTRUCTION

Cast Iron Construction

LEADWELL uses only top quality well-ribbed castings. Finite Element Analysis(FEA) is used on each new casting to determine the size and location of all internal ribs ensuring high torsional stiffness and minimum vibration. The cast iron base column, saddel, headstock, &tables have over 10 times the dampening capacity of those made from steel resulting in those made from steel resulting in superior cutting performance.



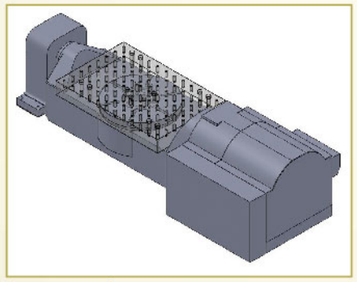
C) Option
Fixture Plate 400x600mm



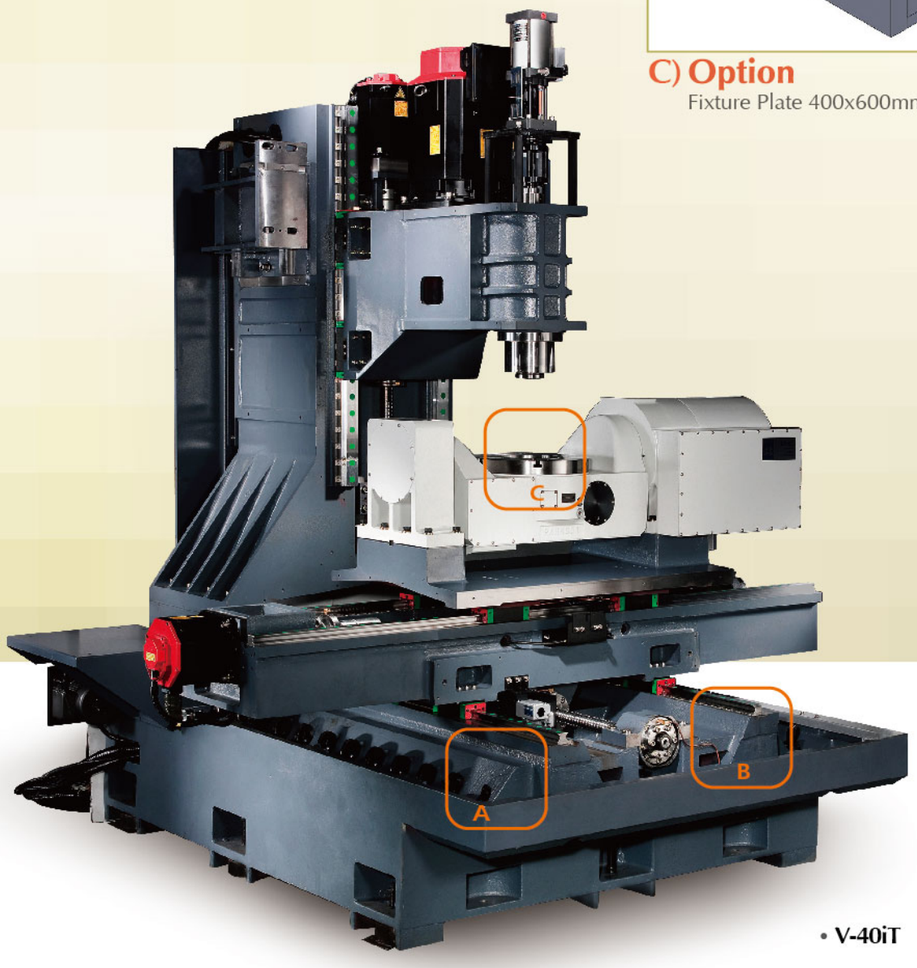
• V-20iT

A) Chip Removal
LEADWELL's simple and efficient design uses chip augers on both sides of the machine and provides high volume coolant to wash the chips from the work area.

B) Roller Guide Ways
LEADWELL uses roller guide ways that feature zero clearance and fully-loaded carrying capacity in all directions.



C) Option
Fixture Plate 400x600mm



• V-40iT

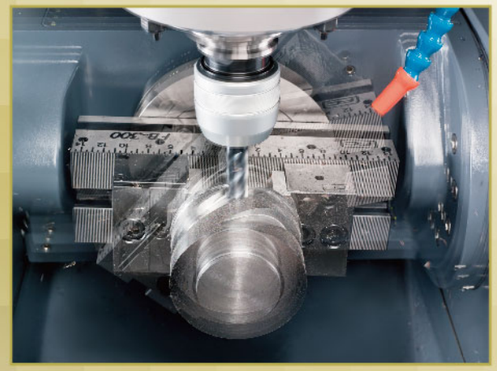
A) Chip Removal
LEADWELL's simple and efficient design uses chip augers on both sides of the machine and provides high volume coolant to wash the chips from the work area.

B) Roller Guide Ways
LEADWELL uses roller guide ways that feature zero clearance and fully-loaded carrying capacity in all directions.

V20iT/V40iT SERIES
5 AXES MACHINING CENTER

Parts with odd-angles and complex curved surfaces

Face Cutting



Gripping Cutting

Gripping Cutting with Swing

Gripping Cutting with Slant

Gripping Cutting with Rotate

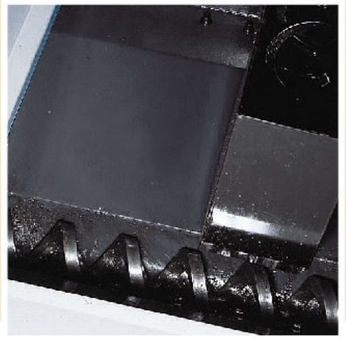
The Benefits of 5-axis machining:

- Reduced machining time: By using a flat bottom endmill and maintaining perpen dicularity to the complex surface you can step-over the full diameter of the cutter thereby dramatically reducing the required number of passes across a surface. The same principle applies to sidemilling of angled surfaces.
- Better surface finish: Using a flat bottom endmill to maintain perpen dicularity to the complex surface can eliminate ribbing caused by ball-nose endmills.
- Eliminate multiple setups required to re-position the work-piece at complex angles.
- Eliminate costly tooling and fixtures required to hold the work-piece in place.
- Eliminate manual millwork and handwork required to cleanup kellered surfaces.
- Machine complex parts that are not otherwise possible, including holes required to be normal to a complex surface.

Double-Nut Ball Screws

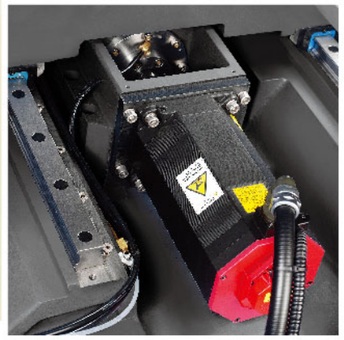
LEADWELL uses only premium quality preloaded double-nut ball screws from high quality supplirt on the machines. Each ball screw is accurately aligned parallel to the guide ways and anchored at both ends. They are then pretensioned to improve machine stiffness. Ball screw tail bearing supports are integral to the castings for extra rigidity. With this design the can excessd customer requirements for accuracy and maximum life.

- Rotational torque variations are measured to guatantee a non-binding, highly accurate, and long running component.



Chip Removal

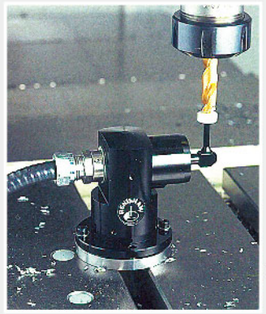
LEADWELL's simple and efficient chip removal design uses chip augers on both sides of the machine. High volume coolant washes the chips form the work area into the augers that move the chips in the disposal container. This eliminates the need for an operator to manually remove chips reducing non-cutting time.



Directly Coupled Servo Motors

The V20iT/40iT series servo motors are connected directly to the ball screwswith rigid shaft couplings. These couplings ensure that even under severe loading from sharp maching, precise interpolations is achieved. This design is superior to both belt driven and flexible shaft coupling designs.

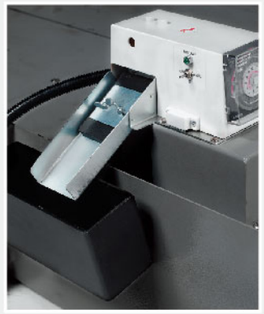
- V20iT/40iT Series motors have 1,000,000 pulse encoders for high accuracy positioning of linear axes
- Motors are the same between all axes which reduces spare part requirements.



Tool Probe Option

LEADWELL's tool probe option measures both tool length and tool diameter. It uses macro programming to automatically define and update tool offsets. This option will reduce setup time.

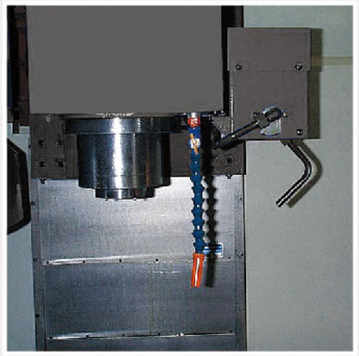
- The tool probe option can also check for broken tools.



Oil Skimmer Option

Designed for collecting the oil dust in the coolant tank for reclamation and meeting environmental protection requirements.

HIGH PRODUCTIVITY OPTIONS



Coolant Through Spindle (CTS) Option

The CTS option includes an auxiliary high-pressure pump, which supplies high pressure coolant to the cutting edge. CTS improves tool life, allows both deep hole drilling and blind pocket milling. It also allows higher speeds, which reduces cycle time.

- This option can be easily added to any V20iT/40iT series machine.

Programmable Coolant Nozzle Option

This unique programmable coolant nozzle option provides precise coolant control. It allows the NC program to change the coolant direction during the machining cycle. The nozzle can be programmed for tool lengths from 60mm (2.4") to 250mm (10").

- This option eliminates operator adjustment causing unnecessary downtime.

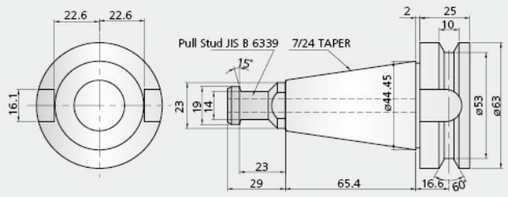
Spindle Probe Option

LEADWELL's spindle probe can automate workpiece setup and inspect parts.

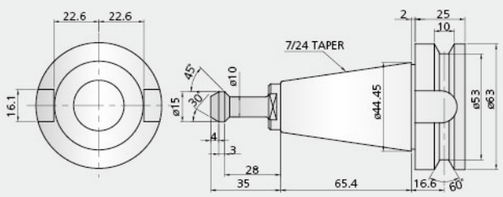
Tool Drawing

BT-40 with CTS & BT-40

Unit:mm



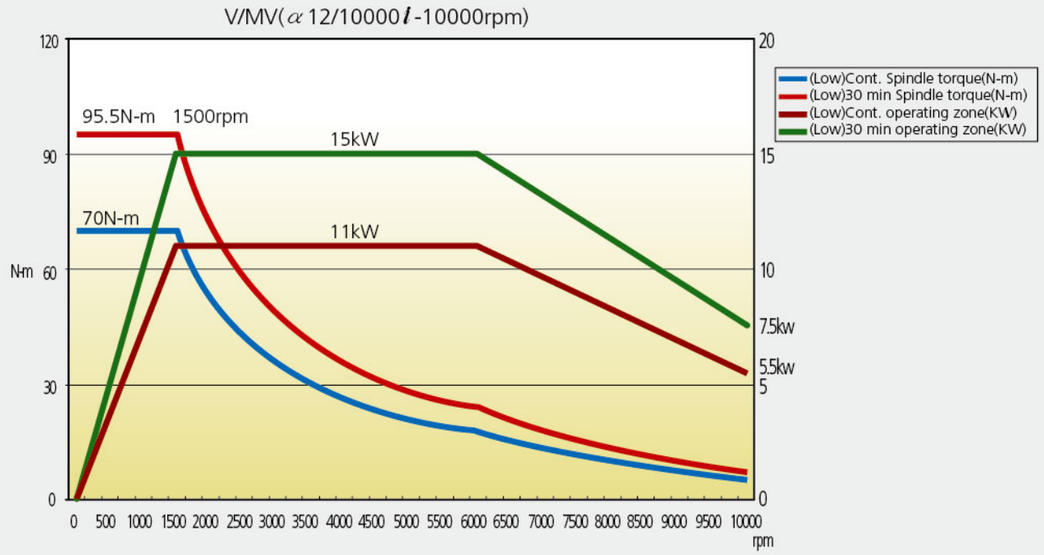
BT-40 with CTS



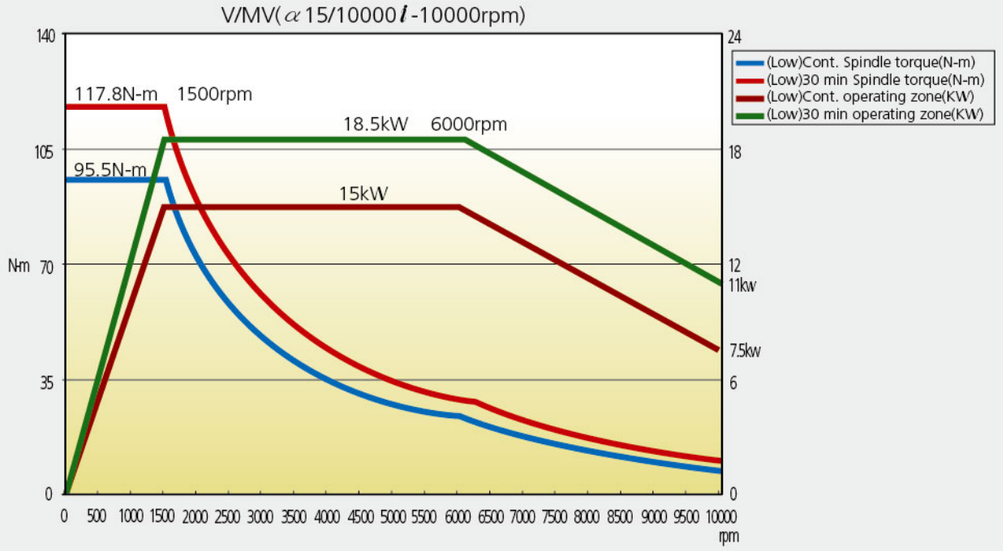
BT-40

Spindle Motor

SPINDLE MOTOR TORQUE DRAWING - V20iT



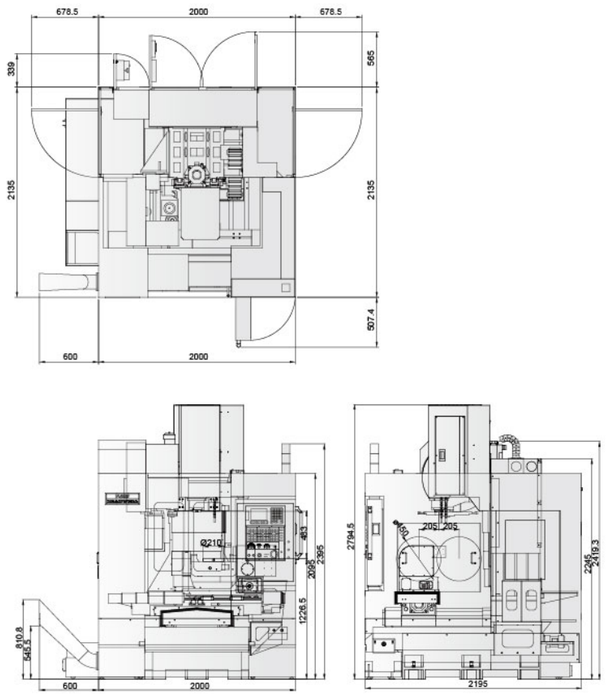
SPINDLE MOTOR TORQUE DRAWING - V40iT



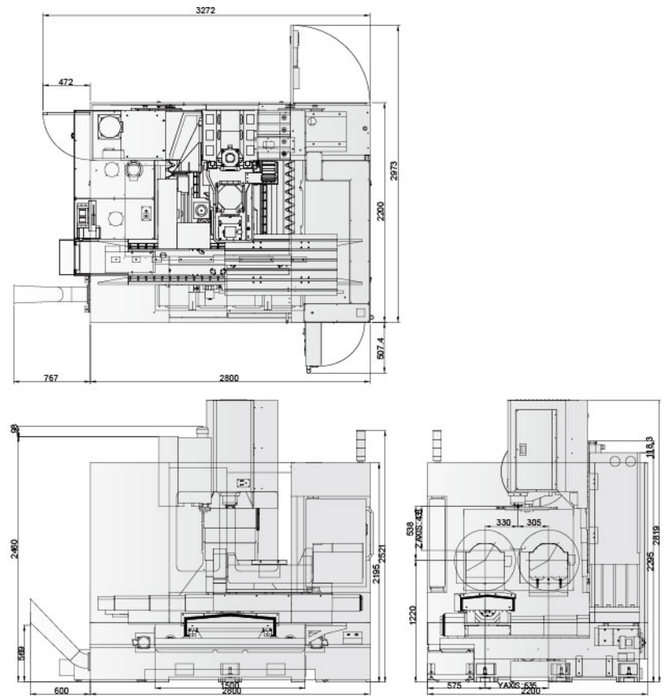
OUTLINE DIMENSIONAL DRAWING

Unit:mm

V-20iT



V-40iT



MACHINE SPECIFICATIONS

ITEM / MODEL		V-20iT	V-40iT
A.T.C.	Type	ARM	ARM
CAPACITY	Unit		
X axis travel	mm (in)	510 (20)	846 (33)
Y axis travel	mm (in)	410 (16)	635 (25)
Z axis travel	mm (in)	380 (15)	438 (17.2)
Distance from spindle nose to table surface	mm (in)	100-480 (3.9-19)	100-538 (3.9-21)
Distance from spindle nose to column surface	mm (in)	450 (17.7)	635 (25)
TABLE			
Table size (LxW)	mm (in)	Ø210 (Ø8.3)	Ø350 (Ø13.8)
Max. table load weight(Titling 60°-90°)	kg (lb)	75	100
T-solt size		12	12
SPINDLE			
Spindle speeds	min^{-1}	10000	10000
Spindle nose (normal size)	mm	7/24 Taper	7/24 Taper
Ratios		1:1	1:1
Max.spindle torque	N.M (ft.lbf)	70 (51.6)	95.4 (70.4)
Transmission		H.T.D Belt	H.T.D Belt
FEEDRATE			
Rapid traverse	m/min (IPM)	36/36/36 (1417/1417/1417)	36/36/36 (1417/1417/1417)
Feedrate	m/min (IPM)	10 (394)	10 (394)
A.T.C.			
Tooling system (nominal size,NO.)		BT-40	BT-40
Tool storage capacity		24	24
MOTORS			
Spindle motor (30min/cont)	KW (HP)	15 (20.1)	18.5 (24.8)
X-axis feed motor	KW (HP)	3 (4)	3 (4)
Y-axis feed motor	KW (HP)	3 (4)	3 (4)
Z-axis feed motor	KW (HP)	4 (5.4)	4 (5.4)
Rotating motor	KW (HP)	1.4 (1.9)	1.6 (2.1)
Tilting motor	KW (HP)	1.6 (2.1)	4 (5.4)
MISCELLANEOUS			
Positioning accuracy (P) X、Y、Z VDI(3441)	mm	0.01/1000、0.01/1000、0.01/1000	0.01/1000、0.01/1000、0.01/1000
Repeatability (PS) X、Y、Z VDI(3441)	mm	0.007/1000、0.007/1000、0.007/1000	0.007/1000、0.007/1000、0.007/1000
MACHINE SIZE			
Height of machine (H)	mm(in)	2620 (103.1)	2721 (107)
Floor space (LxW)	mm(in)	2700 (106.3)x2140(84.2)	3420 (134.6)x2200(86.6)
Total machine weight	Kg(lb)	5200(11464)	6800(14991)
Power requirement	KVA	35	35
Computer control	FANUC	0i-M	0i-M

STANDARD ACCESSORIES

- Full enclosure guarding
- Chip conveyor (auger type)
- Work light
- Alarm lamp
- Heat exchanger
- Rigid tapping
- Auto counter for work piece
- Remote MPG
- 10,000 rpm spindle

OPTIONAL ACCESSORIES

- Surrounding coolant system
- 12,000 rpm spindle
- Spindle oil chiller
- Tool tip air blow system
- Linear Scale
- Tool overload detection
- Auto tool length measurement (A.T.L.M)
- Automatic workpiece measurement
- Simple tool life management
- Chip conveyor outside machine & chip bucket

2011.01