

SMART-t

**High Performance
Vertical
Machining Centers**

CINCINNATI MACHINES

SMART-t Series
High Performance

VERTICAL MACHINING CENTER



CINCINNATI MACHINES

2629 Spring Grove Ave. Cincinnati, Ohio 45214
(513) 681-1953 (888)-999-5897 Fax (513) 865-6151
<http://www.cinmac.com>
sales@cinmac.com parts@cinmac.com

VERTICAL MACHINING CENTER



VFORCE

Box way Series

DV-1100
X axis 1100 43.3"
Y axis 600 23.6"
Z axis 600 23.6"



DV-1300
X axis 1300 51.1"
Y axis 650 25.9"
Z axis 600 23.6"



DV-1200
X axis 1200 47.2"
Y axis 720 28.3"
Z axis 610 24"



DV-1400
X axis 1400 55.1"
Y axis 720 28.3"
Z axis 610 24"



Strict Quality Control

Geometric Accuracy Inspection, Spindle Balancing Adjustment, Ball Bar Test, Laser Inspection, Cutting Test.



LASER INSPECTION



BALL BAR TEST



Unit : μm

MACH-1 HIGH-SPEED SV Linear Guideway Series

SV-550APC
X axis 550 21.6"
Y axis 400 15.7"
Z axis 350 13.7"



SV-550
X axis 550 21.6"
Y axis 410 16.1"
Z axis 460 18.1"



SV-710
X axis 710 27.9"
Y axis 460 18.1"
Z axis 550 21.6"



SV-850
X axis 850 33.4"
Y axis 550 21.6"
Z axis 580 22.8"



SV-1020
X axis 1020 40.4"
Y axis 550 21.6"
Z axis 580 22.8"

SV-1300
X axis 1300 51.1"
Y axis 750 29.5"
Z axis 700 27.5"



SV-1500
X axis 1500 59"
Y axis 750 29.5"
Z axis 700 27.5"



SV-1600
X axis 1600 62.9"
Y axis 750 29.5"
Z axis 700 27.5"

SV-1800
X axis 1800 70.8"
Y axis 900 35.3"
Z axis 750 29.5"

SV-2000
X axis 2000 78.7"
Y axis 900 35.3"
Z axis 750 29.5"



Vertical Machining Center

DV-1100 / 1300

Y travel 2-Box way

**HARD
MATERIALS
MILLING**

VFORCE



MASSIVE
HARD
BOX
WAYS



Specifications

Model	Unit	DV-1100		DV-1300	
TRAVEL					
X axis travel	mm	1100 43.3"		1300 51.1"	
Y axis travel	mm	600 / 650 (opt.) 23.6/25.5"(opt)		650 25.5"	
Z axis travel	mm	600 23.6"		600 23.6"	
Distance from spindle nose to table surface	mm	120-720 4.7-28.3"		120-720 4.7-28.3"	
TABLE					
Table area	mm	1250 x 650 49.2x25.5"		1450 x 650 57x25.5"	
Max. load table	kgs	880 1936 lbs		1000 2200 lbs	
T-slot	mm	5 x 18 x 125		5 x 18 x 125	
SPINDLE					
Spindle taper	type	CAT/BT-40	50 (opt.)	CAT/BT-40	50 (opt.)
Spindle speed	rpm	8000	6000 (opt.)	8000	6000 (opt.)
Spindle drive	type	Belt type		Belt type	
Spindle motor	kw	7.5 / 11		7.5 / 11 10/15 HP	
Spindle cooling	type	Oil cooler (std.)		Oil cooler (std.)	
FEED RATE					
Rapid traverse (X, Y)	m/min	18 700 IPM		18 700 IPM	
Rapid traverse (Z)	m/min	15 600 IPM		15 600 IPM	
Cutting feed rate	mm/min	1-10000 400 IPM		1-10000 400 IPM	
X, Y, Z axis servo motor (FANUC)	kw	2.5		2.5	
X, Y, Z axis servo motor (MITSUBISHI)	kw	3.5		3.5	
ATC					
Magazine type	type	Carousel	Arm	Carousel	Arm
Tool magazine capacity	psc	16	24	16	24
Max. tool diameter	mm	100 / 150	80 / 150	100 / 150	80 / 150
Max. tool length	mm	300	300	300	300
Max. tool weight	kgs	7	7	7	7
Tool selection	type	Fixed-type	Random	Fixed-type	Random
OTHER					
Power consumption	KVA	20		20	
Machine Dia (L x W x H)	mm	2890 x 2240 x 2600		3650 x 2240 x 2600	
Machine weight	kgs	7500 16500 lbs		8000 17600 lbs	

Standard Accessories

- Full splash guard
- Spindle speed 8000 rpm (BT-40)
- Spindle motor 7.5/11 kw (BT-40)
- Armless ATC 16 tools (BT-40)
- Rigid tapping
- Cooling system
- Auto lubrication system
- Spindle oil cooler unit
- Heat exchanger
- Telescopic covers for 3 axes
- Work lamp
- Three-color signal light
- Tool box
- Coolant gun
- Screw type chip conveyor

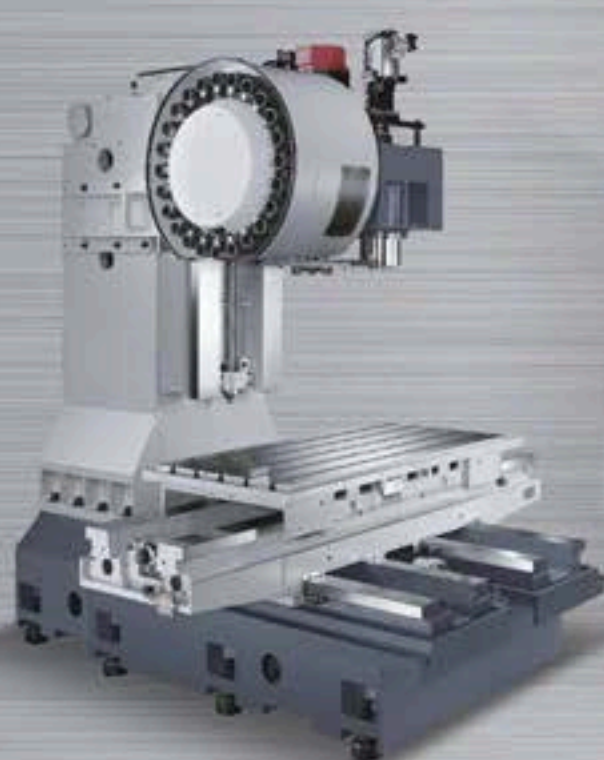
Optional Accessories

- Variable 20 / 24 / 30 tools ATC
- Spindle motor 11/15 kw, 15/18.5 kw 15/20 - 20/25 HP
- BT-50 Taper with 6000 RPM speed
- Spindle speed 10000 / 12000 / 15000 (BT-40)
- Rear coolant flushing device
- Oil skimmer
- Coolant through spindle (With sealed splash guard)
- Chain type chip conveyor + Chip cart
- The 4th axis rotary table
- The 4th and 5th rotary table
- ZF gear box

Vertical Machining Center

DV-1200 / 1400

Y travel 4-Box way



Available
with
2-Speed
Gear Box



Specifications

Model	Unit	DV-1200	DV-1400
TRAVEL			
X axis travel	mm	1200 47.2"	1400 55.1"
Y axis travel	mm	720 28.3"	720 28.3"
Z axis travel (#40 taper)	mm	610 24"	610 24"
Z axis travel (#50 taper) (opt.)	mm	680 26.7"	680 26.7"
Spindle nose to table surface (#40)	mm	150-760 5.9-29.9"	150-760 5.9-29.9"
Spindle nose to table surface (#50)(opt.)	mm	170-850 6.7-33.4"	170-850 6.7-33.4"
Distance from spindle center to column	mm	745 29.3"	745 29.3"
TABLE			
Table area	mm	1350 x 700 53.1x27.5"	1550 x 700 61x27.5"
Max. load of table	kgs	1600	2000
T-slot	mm	5 x 18 x 130	5 x 18 x 130
SPINDLE			
Spindle taper		CAT/BT-40 (#50)(opt.)	CAT/BT-40 (#50)(opt.)
Spindle speed (#40, Belt head)	rpm	8000 (10000 / 12000)(opt.)	8000 (10000 / 12000)(opt.)
(#50, Belt head)	rpm	6000 (8000 / 10000)(opt.)	6000 (8000 / 10000)(opt.)
(#50, Gear box)	rpm	6000	6000
Spindle cooling		Oil cooler	Oil cooler
Spindle motor	kw	7.5 / 11 15/20 HP	11 / 15
FEED RATE			
Rapid traverse (X, Y)	m/min	15	15
Rapid traverse (Z)	m/min	15	15
Cutting feed rate	m/min	7	7
SERVO MOTOR			
X axis motor	kw	2.5	3
Y axis motor	kw	2.5	3
Z axis motor	kw	2.5	3
AUTO TOOL CHANGER			
Magazine type		Armless	Armless
Tool magazine capacity	psc	16	16
Max. tool diameter	mm	100-150	100-150
Max. tool length	mm	250	250
Max. tool weight	kgs	7	7
OTHER			
Power consumption	KVA	30	30
Machine Dia (L x W x H)	mm	3790 x 3800 x 2845	4190 x 3800 x 3010
Machine weight	kgs	8500 18700 lbs	9500 20900 lbs

Standard Accessories

- Full splash guard
- Spindle speed 8000 rpm (BT-40)
- Spindle motor 7.5/11 kw
- Armless ATC 16 tools (BT-40)
- Rigid tapping
- Cooling system
- Auto lubrication system
- Spindle oil cooler unit
- Heat exchanger
- Telescopic covers for 3 axes
- Work lamp
- Three-color signal light
- Tool box
- Coolant gun
- Screw type chip conveyor

Optional Accessories

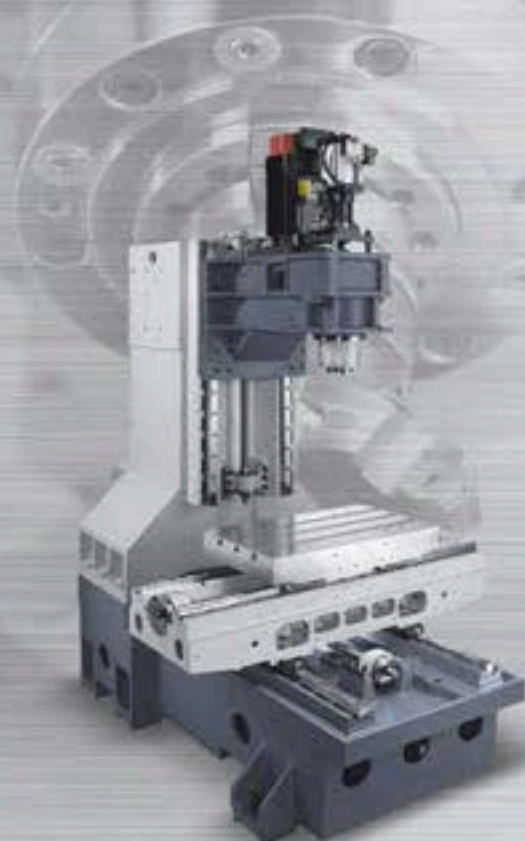
- Variable 20 / 24 / 30 tools ATC
- Spindle motor 11/15 kw, 15/18.5 kw 15/20 - 20/25 HP
- BT-50 Taper with gear / belt head
- Spindle speed 10000 / 12000 / 15000 (BT-40)
- Rear coolant flushing device
- Oil skimmer
- Coolant through spindle
- Chain type chip conveyor + Chip cart
- The 4th axis rotary table
- The 4th and 5th rotary table

MACH-1 HIGH SPEED

Linear Guideway Series

Vertical Machining Center

SV-550 / 710



SMART-t

MACH-1 HIGH SPEED SV Series

**CINCINNATI
MACHINES**

Specifications

Model	Unit	SV-550	SV-710
TRAVEL			
X axis travel	mm	550 21.6"	710 27.9"
Y axis travel	mm	410 16.1"	460 18.1"
Z axis travel	mm	460 18.1"	550 21.6"
Distance from spindle nose to table surface	mm	120-580 4.7-22.8"	150-700 5.9-27.5"
TABLE			
Table area	mm	650 x 410 25.6-16.1"	760 x 420 29.9-16.5"
Max. load table	kgs	250 550lbs	450 990lbs
T-slot	mm	3 x 14 x 100	5 x 14 x 63
SPINDLE			
Standard speed 8000 rpm			
Spindle taper	type	Cat/BT-40	Cat/BT-40
Spindle speed	rpm	8000	8000 / 10000 / 12000 / 15000
Spindle drive	type	Belt	Belt
Spindle motor	kw	5.5 / 7.5 7.5/10 hp	5.5 / 7.5 7.5/10 hp
FEED RATE			
Rapid traverse (X, Y, Z)	m/min	30 / 30 / 24 1200/1200/900ipm	30 / 30 / 24 1200/1200/900ipm
Cutting feed rate	mm/min	1-10000	1-15000
X, Y, Z axis servo motor (FANUC)	kw	1.2 / 1.2 / 1.8	1.2 / 1.2 / 1.8
X, Y, Z axis servo motor (MITSUBISHI)	kw	1.5 / 1.5 / 2	1.5 / 1.5 / 2
ATC			
Magazine type	type	Carousel	Carousel
Tool magazine capacity	psc	16	16
Max. tool diameter	mm	100 / 150	100 / 150
Max. tool length	mm	250	250
Max. tool weight	kgs	7	7
Tool selection	type	Fixed	Fixed
OTHER			
Power consumption	KVA	20	20
Machine Dia (L x W x H)	mm	1950 x 2450 x 2600	2150 x 2340 x 2520
Machine weight	kgs	3400 7480lbs	4200 9240lbs

Standard Accessories

- Full splash guard
- Spindle speed 8000 rpm (BT-40)
- Spindle motor 5.5/7.5 kw (BT-40)
- Armless ATC 16 tools (BT-40)
- Rigid tapping
- Cooling system
- Auto lubrication system
- Spindle oil cooler unit
- Heat exchanger
- Telescopic covers for 3 axes
- Work lamp
- Three-color call light
- Tool box
- Coolant gun
- Drawer type chip conveyor

Optional Accessories

- Variable 20 / 24 tools ATC
- Belt type spindle speed 10000 / 12000 rpm
- Direct drive spindle speed 12000 / 15000 rpm
- Built-in type spindle speed 24000 / 30000 / 36000 rpm
- Rear coolant flushing device
- Oil skimmer
- Coolant through spindle
- Screw type chip conveyor + Chip cart
- Chain type chip conveyor + Chip cart
- The 4th axis rotary table

SV-850 / 1020



**MACH-1
HIGH SPEED**



Specifications

Model	Unit	SV-850		SV-1020	
TRAVEL					
3-Axes travel		Linear guideways			
X axis travel	mm	850	33.4"	1020	40.9"
Y axis travel	mm	550	21.6"	550	21.6"
Z axis travel	mm	580	22.8"	580	22.8"
Distance from spindle nose to table surface	mm	120-700	4.7-27.5"	120-700	4.7-27.5"
TABLE					
Table area	mm	1020 x 550 40.9-21.6"		1200 x 500 47.2-27.5"	
Max. load table	kgs	600 1320 lbs		800 1760 lbs	
T-slot	mm	4 x 18 x 125		4 x 18 x 125	
SPINDLE					
Standard speed 8000 rpm					
Spindle taper	type	Cat/BT-40	Cat/BT-40	Cat/BT-40	Cat/BT-40
Spindle speed	rpm	8000 / 10000	10000/12000/15000	8000 / 10000	10000/12000/15000
Spindle drive	type	Belt	Direct Drive	Belt	Direct Drive
Spindle motor	kw	5.5 / 7.5 7.5/10hp	5.5 / 7.5 7.5/10hp	7.5 / 11 10/15hp	7.5 / 11 10/15hp
Spindle cooling	type	Oil cooler (std.)		Oil cooler (std.)	
FEED RATE					
Rapid traverse (X, Y, Z)	m/min	30 / 30 / 20	1200/1200/800ipm	30 / 30 / 20	1200/1200/800ipm
Cutting feed rate	mm/min	1-15000		1-15000	
X, Y, Z axis servo motor (FANUC)	kw	1.8 / 1.8 / 2.5		1.8 / 1.8 / 2.5	
X, Y, Z axis servo motor (MITSUBISHI)	kw	2 / 2 / 3.5		2 / 2 / 3.5	
ATC					
Magazine type	type	Carousel	Arm	Carousel	Arm
Tool magazine capacity	psc	16	24	16	24
Max. tool diameter	mm	100 / 150	80 / 150	100 / 150	80 / 150
Max. tool length	mm	250	250	250	250
Max. tool weight	kgs	7	7	7	7
Tool selection	type	Fixed	Random	Fixed	Random
OTHER					
Power consumption	KVA	20		20	
Machine Dia (L x W x H)	mm	2940 x 2390 x 2750		2940 x 2390 x 2750	
Machine weight	kgs	6200 13640 lbs		6800 14960 lbs	

Standard Accessories

- Full splash guard
- Spindle speed 8000 rpm (BT-40)
- Spindle motor 7.5/11 kw
- Armless ATC 16 tools (BT-40)
- Rigid tapping
- Cooling system
- Auto lubrication system
- Spindle oil cooler unit
- Heat exchanger
- Telescopic covers for 3 axes
- Work lamp
- Three-color signal light
- Tool box
- Coolant gun
- Screw type chip conveyor

Optional Accessories

- Variable 20 / 24 tools ATC
- Spindle motor 11 / 15 kw
- Spindle motor 15 / 18.5 kw
- Belt type spindle speed 10000 / 12000 rpm
- Direct drive spindle speed 12000 / 15000 rpm
- Built-in type spindle speed 16000 / 20000 / 24000 / 30000 rpm
- Rear coolant flushing device
- Oil skimmer
- Coolant through spindle
- Chain type chip conveyor + Chip cart
- The 4th axis rotary table
- The 4th and 5th rotary table
- ZF gear box
- Roller type linear guideway

MACH-1 HIGH SPEED

Linear Guideway Series

Vertical Machining Center

SV-1300 / 1500

Y travel 4-Linear way

MACH-1 HIGH SPEED



SMART-t

MACH-1 HIGH SPEED SV Series

CINCINNATI MACHINES

Specifications

Model	Unit	SV-1300	SV-1500		
TRAVEL					
X axis travel	mm	1300 51"	1500 59"		
Y axis travel	mm	750 29.5"	750 29.5"		
Z axis travel	mm	700 27.5"	700 27.5"		
Distance from spindle nose to table surface	mm	150-850 5.9-33.4"	180-850 5.9-33.4"		
TABLE					
Table area	mm	1300 x 750 51x29.5"	1500 x 750 59x29.5"		
Max. load table	kgs	1000 39.3"	1000 39.3"		
T-slot	mm	5 x 18 x 150	5 x 18 x 150		
SPINDLE					
Standard speed 8000 rpm					
Spindle taper	type	Cat/BT-40	Cat/BT-40		
Spindle speed (Belt type)	rpm	8000 / 10000	8000 / 10000		
Spindle speed (Direct Drive)	rpm	10000 / 12000 / 15000	10000 / 12000 / 15000		
Spindle motor	kw	7.5 / 11 10/15hp	7.5 / 11 10/15hp		
Spindle cooling	type	Oil cooler (std.)	Oil cooler (std.)		
FEED RATE					
Rapid traverse (X, Y)	m/min	30 1200 ipm	30 1200 ipm		
Rapid traverse (Z)	m/min	24 960 ipm	24 960 ipm		
Cutting feed rate	mm/min	1-15000	1-15000		
X, Y, Z axis servo motor (FANUC)	kw	4 / 4 / 7	4 / 4 / 7		
X, Y, Z axis servo motor (MITSUBISHI)	kw	4.5	4.5		
ATC					
3.5					
Magazine type	type	Carousel	Arm	Carousel	Arm
Tool magazine capacity	psc	16	24	16	24
Max. tool diameter	mm	100 / 150	80 / 150	100 / 150	80 / 150
Max. tool length	mm	300	300	300	300
Max. tool weight	kgs	7	7	7	7
Tool selection	type	Fixed-type	Random	Fixed-type	Random
OTHER					
Power consumption	KVA	30 (40 opt.)	30 (40 opt.)		
Machine Dia (L x W x H)	mm	4500 x 3500 x 3000	4500 x 3500 x 3000		
Machine weight	kgs	10000 22000 lbs	11000 24200 lbs		

Standard Accessories

- Full splash guard
- Spindle speed 8000 rpm (BT-40)
- Spindle motor 7.5/11 kw
- Armless ATC 16 tools (BT-40)
- Rigid tapping
- Cooling system
- Auto lubrication system
- Spindle oil cooler unit
- Heat exchanger
- Telescopic covers for 3 axes
- Work lamp
- Three-color signal light
- Tool box
- Coolant gun
- Screw type chip conveyor

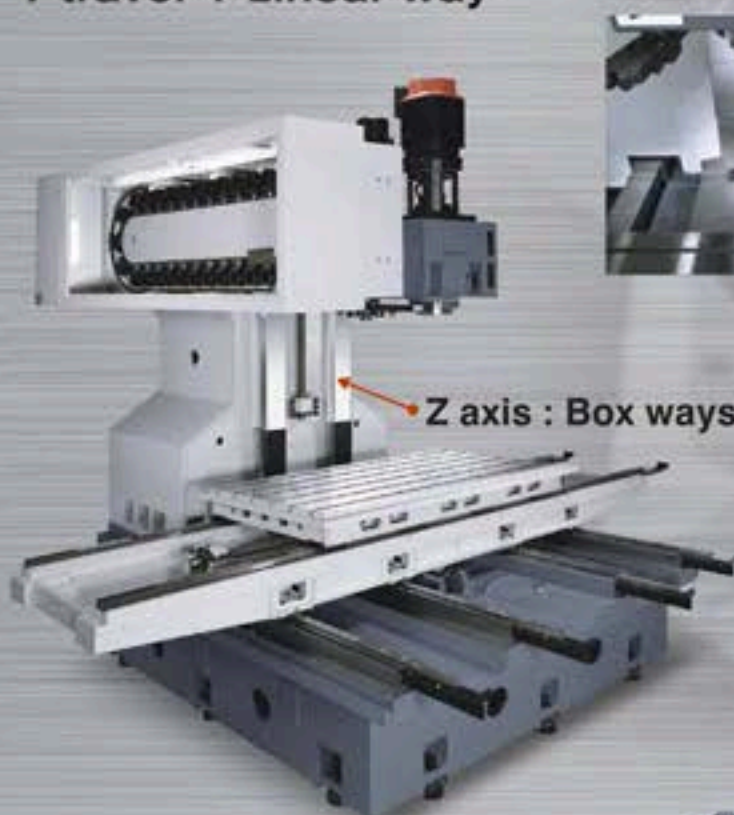
Optional Accessories

- Variable 20 / 24 / 30 tools ATC
- Spindle motor 11/15 kw, 15/18.5 kw, 18/23 kw
- Belt type Spindle speed 6000 rpm (BT-50)
- Belt type Spindle speed 10000 / 12000 rpm (BT-40)
- Built-in type spindle speed 16000 / 20000 / 24000 / 30000 rpm
- Rear coolant flushing device
- Oil skimmer
- Coolant through spindle
- Chain type chip conveyor + Chip cart
- The 4" axis rotary table
- The 4" and 5" rotary table
- ZF gear box
- Roller type linear guideway

Vertical Machining Center

SV-1800 / 2000

Y travel 4-Linear way



Z axis : Box ways



Specifications

Model	Unit	SV-1800	SV-2000
TRAVEL			
X axis travel	mm	1800 70.8"	2000 78.7"
Y axis travel	mm	900 35.4"	
Z axis travel	mm	750 / 900, 1000 (opt.)	
Spindle nose to table surface	mm	150-900 5.9-35.4"	
Spindle center to column surface	mm	950 37.4"	
TABLE			
Table area	mm	1850 x 900 72.8x35.4"	2050 x 900 80.7x35.4"
Max. load table	kgs	2500 5500lbs	3000 6600lbs
T-slot	mm	6 x 18 x 145	
SPINDLE			
Spindle speed	rpm	6000 (Belt)	
Spindle taper	type	Cat/BT-50	
ATC			
Magazine type		Arm Type	
Tool magazine capacity	pcs	24T	32T (opt.)
Max. tool diameter	mm	110-220	125-225
Max. tool length	mm	240	320
Max. tool weight	kgs	15	15
MOTOR			
Spindle motor	kw	11 / 15 15/20hp	15 / 18.5 20/25hp
X / Y / Z axis motor	kw	4 / 4 / 7	
FEED RATE			
Raped traverse (X, Y, Z)	M/min	24 / 24 / 15 960/960/600ipm	
Cutting feed rate	mm/min	1-7000	
BALL SCREW			
Diameter of X,Y, Z axis	mm	50	
Pitch of X, Y, Z axis	mm	10	
GUIDEWAYS			
Width of linear guideways (X, Y)	mm	45 (8 blocks for each axis)	
Width of box ways (Z)	mm	140 (55 thickness)	
OTHERS			
Machine Dia (L x W x H)	mm	5790 x 3970 x 3480	
Machine weight	kgs	17500 38500lbs	18500 40700lbs

Standard Accessories

- Full splash guard
- Roller type linear guideway for X, Y axes
- Box way for Z axis
- Belt type spindle speed 6000 rpm (BT-50)
- Spindle motor 11 / 15 kw (SV-1800), 15 / 18.5 kw (SV-2000)
- Arm type ATC 24 tools
- Rigid tapping
- Cooling system
- Auto lubrication system
- Spindle oil cooler unit
- Heat exchanger
- Telescopic covers for 3 axes
- Work lamp
- Three-color signal light
- Tool box
- Coolant gun
- Screw type chip conveyor

Optional Accessories

- Arm type ATC 32 / 40 tools
- Spindle motor 15 / 18.5 kw, 18 / 23 kw
- Belt type Spindle speed 8000 rpm (BT-50)
- Direct drive Spindle speed 10000 / 12000 rpm (BT-50)
- Rear coolant flushing device
- Oil skimmer
- Coolant through spindle
- Chain type chip conveyor + Chip cart
- The 4" axis rotary table
- The 4" and 5" rotary table
- Z axis travel 900 / 1000 mm