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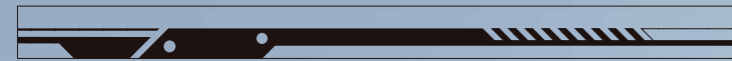


**MANFORD**

POWER & DETERMINATION

5 AXES MACHINING CENTER

# VX-600 VX-600T



## 5-AXES TILTING HEAD

### About VX-600 / VX-600T

- ▼ VX-600 5-Axes Machining Center is designed for multiaxes machining of small and large series of complex 5-sides workpieces. With swiveling head and rotary table, VX-series is able to do simultaneous 5 axes machining with high accuracy.
- ▼ High performance swiveling head, tilting angle from  $-120^{\circ}$  ~  $+30^{\circ}$  equipped with 15,000 rpm built-in spindle.
- ▼ VX-600 / VX-600T is with an embedded  $\varnothing 630$  mm diameter rotary table. Any complex workpiece can be accomplished with a single setup.



MACHINE WEIGHT

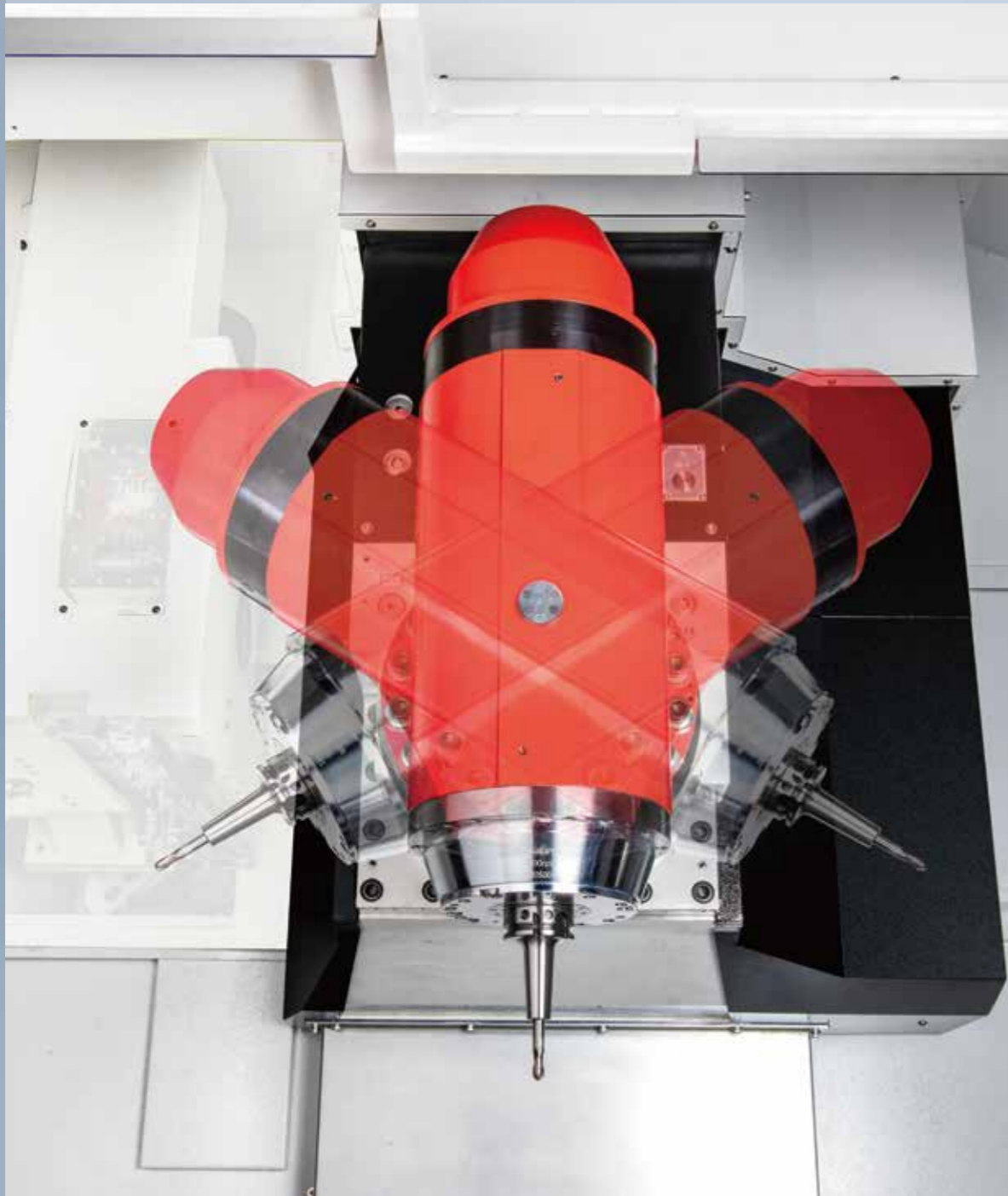
**12,000 kgs**

#### VX-600 | VX-600T

CNC Control	Heidenhain TNC640 / Siemens ONE
X Travel	1,300 mm (51.2")
Y Travel	700 mm (27.6")
Z Travel	700 mm (27.6")
Table Size	700 x 1,450 mm (27.6" x 56.6")
C-Axis Table	$\varnothing 630$ mm
Table Load Capacity	1,000 / 600 kgs
Rapid Feedrate (X/Y/Z)	30/30/24 M/min
ATC Capacity	24T (opt.: 30/32/40 tools)
Floor Space	4,850 x 3,450 x 3,150 mm
Machine Weight	12,000 kgs

Swiveling milling head (B-Axis)

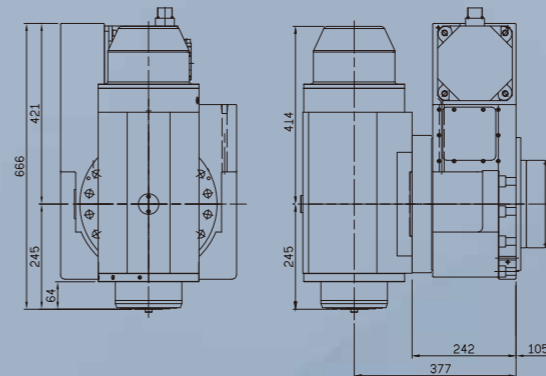
- ▼ The swiveling head is driven by servo motor in combination with encoder which allows indexing accuracy to reach 15 sec.
- ▼ Worm shaft / worm gear transmission with high precision.
- ▼ Swiveling angle is  $-120^{\circ} \sim +30^{\circ}$ .
- ▼ Hydraulic clamping system provides high torque of clamping force which can prevent vibration when machining.



Tilting Milling Head (B-Axis)

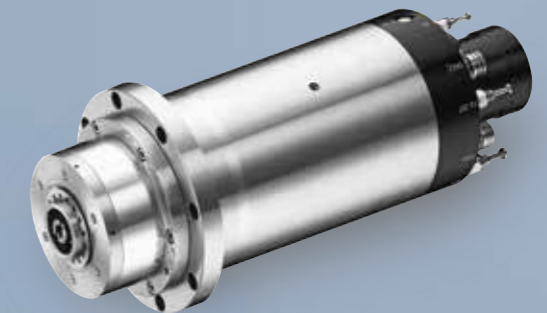
VX-600 | VX-600T

Transmission	worm gear
Tilting Angle	$-120^{\circ} \sim +30^{\circ}$
Spindle Transmission	built-in
Spindle Taper	BBT40   HSK-T63
Spindle Speed	15,000 rpm   12,000 rpm
Spindle Power	21 ~ 25 kW

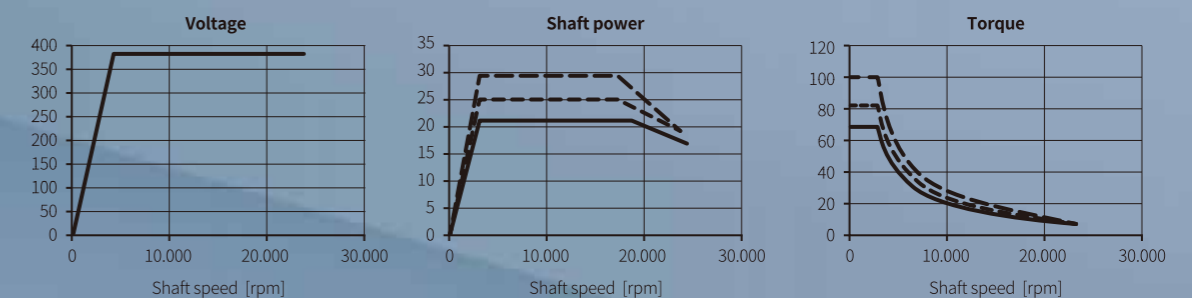


Built-in motor spindle

VX series swiveling milling head is equipped with built-in spindle. Supplying 21 ~ 25 kW power ; 69.2 ~ 83.2 Nm torque. Also equipped with independent spindle cooler to control the temperature of spindle.



Connection	Y (oil cooling)														
	S1/100%					S6/60%, ts=10min					S6/40%, ts=10min				
Operation mode	S1/100%					S6/60%, ts=10min					S6/40%, ts=10min				
Voltage [V]	255	380	380	380	380	255	380	380	380	380	255	380	380	380	
Current [A]	68	53	38	40	34	78	59	45	48	37	89	65	58	37	
Frequency [Hz]	100	149	400	615	800	100	149	400	575	800	100	149	575	800	
Shaft speed [rpm]	2,900	4,410	11,820	18,130	23,630	2,870	4,390	11,770	16,870	23,580	2,790	4,380	16,770	23,580	
Shaft power [KW]	21	21	21	21	17	25	25	25	25	18	29	29	29	18	
Peak power [KW]	66	131	53	33,5	23,5	66	131	53	36,5	23,6	66	131	36,5	23,6	
Torque [Nm]	69,2	45,5	17,0	11,1	6,9	83,2	54,4	20,3	14,2	7,3	99,3	63,2	16,5	7,3	
Stator losses [W]	1.740	1.590	990	1.030	930	2.170	1.770	1.170	1.260	1.010	2.680	1.980	1.505	1.010	
Rotor losses [W]	760	340	360	430	360	1.120	470	520	620	420	1.540	610	840	420	



## Rotary Table (C-Axis)

- ▼ The rotary table is mounted in the rectangular table, making the machine suitable for machining various shapes of workpiece with space saving.
- ▼ The rotary table is directly driven by a servo motor in combination with the use of an encoder, enabling indexing accuracy to reach  $\pm 10$  sec.
- ▼ Minimum indexing degree is  $0.001^\circ$ .
- ▼ The rotary table of VX-T series can provide both Turning and Milling function which make production more efficiently.



C-Axis

VX-600 | VX-600T

Transmission	DD motor
Table Diameter	$\varnothing 630$ mm
T-slot (size x Qty x dist.)	18 mm x 5 x 125 mm
C-Axis Rotating Range	$360^\circ$
Max. Speed	120 rpm   1,200 rpm
Brake Torque	300 kgf-m   400 kgf-m

The VX series is equipped with a forward and backward movable tool magazine, which greatly reduces the interference of working area.



# VX-800

## 5-AXES TILTING HEAD



MACHINE WEIGHT  
**19,000 kgs**

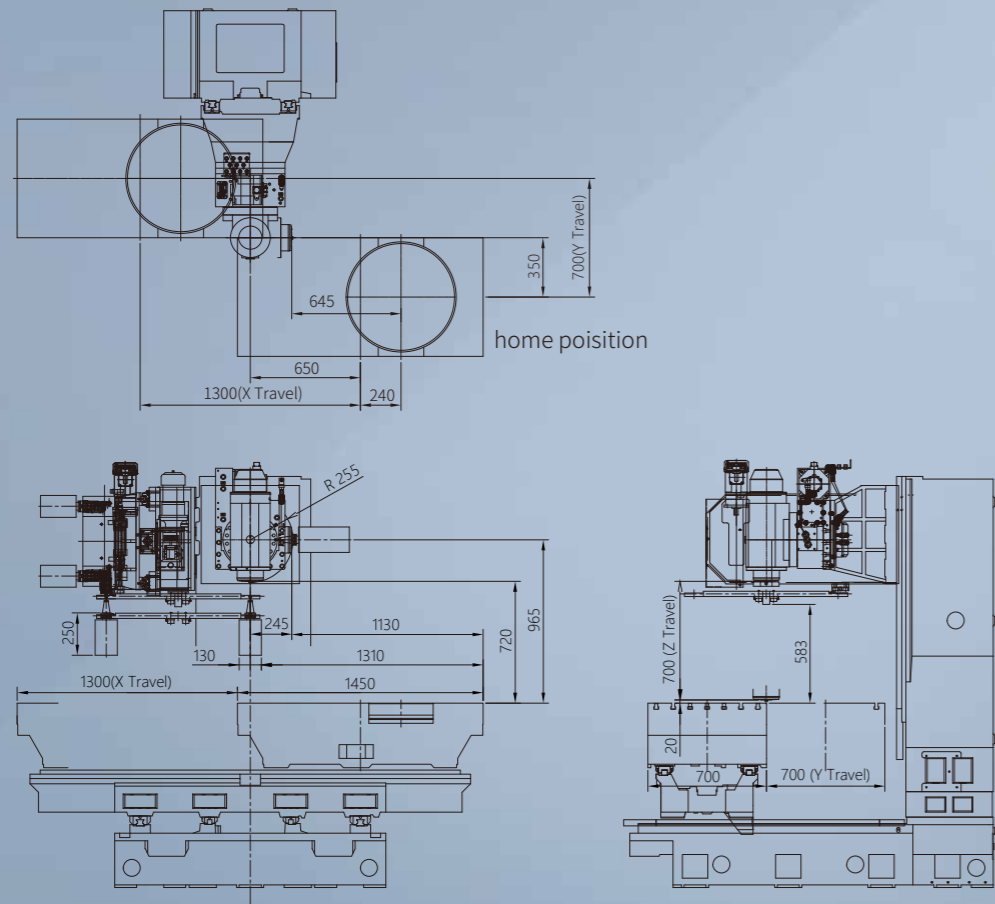
### About VX-800

VX-800   VX-800T	
CNC Control	Heidenhain TNC640 Siemens ONE
X Travel	1,600 mm (63.0")
Y Travel	900 mm (35.4")
Z Travel	850 mm (33.5")
Table Size	850 x 1,800 mm (33.5" x 70.9")
C-Axis Table	Ø800 mm
Table Load Capacity	1,500 kgs
Rapid Feedrate (X/Y/Z)	16/16/16 M/min
ATC Capacity	24T (opt.: 30/32/40 tools)
Floor Space	6,920 x 4,910 x 3,700 mm
Machine Weight	19,000 kgs

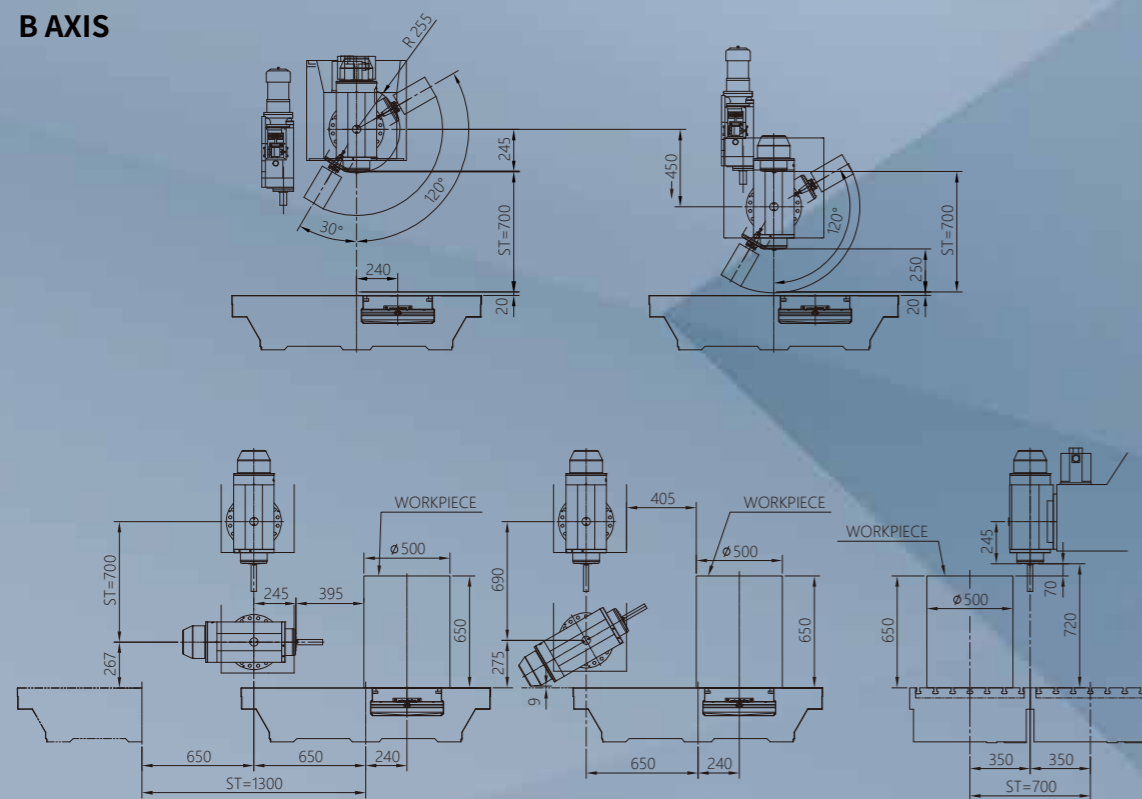
### C-Axis

VX-800   VX-800T	
Transmission	DD motor
Table Diameter	Ø800 mm
T-slot (size x Q'ty x dist.)	22 mm x 5 x 150 mm
C Axis Rotating Range	360°
Max. Speed	60 rpm   500 rpm
Brake Torque	315 kgf-m

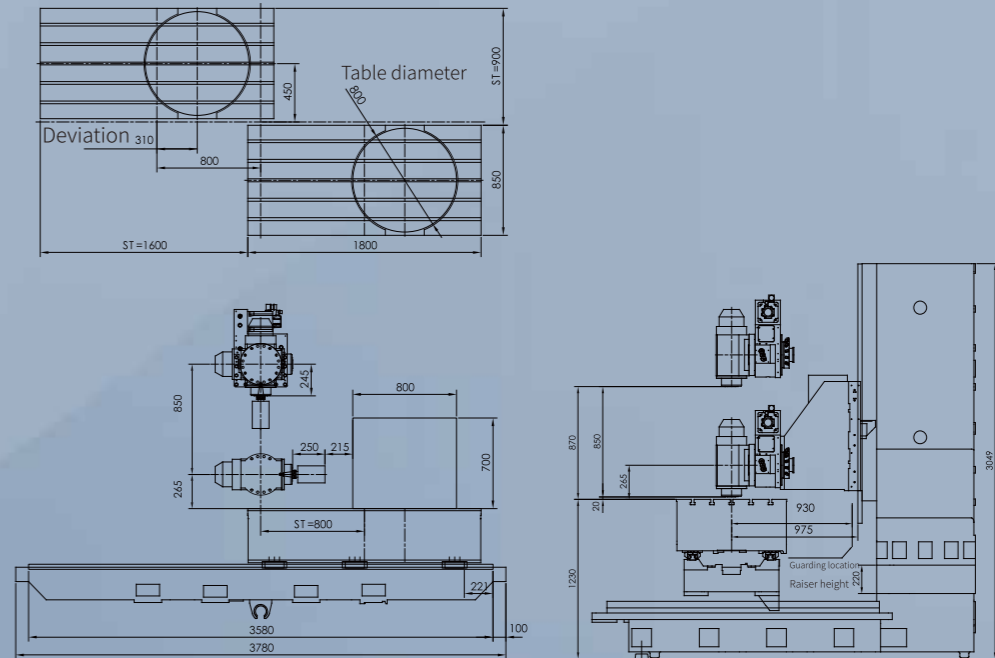
## VX-600 Processing Range



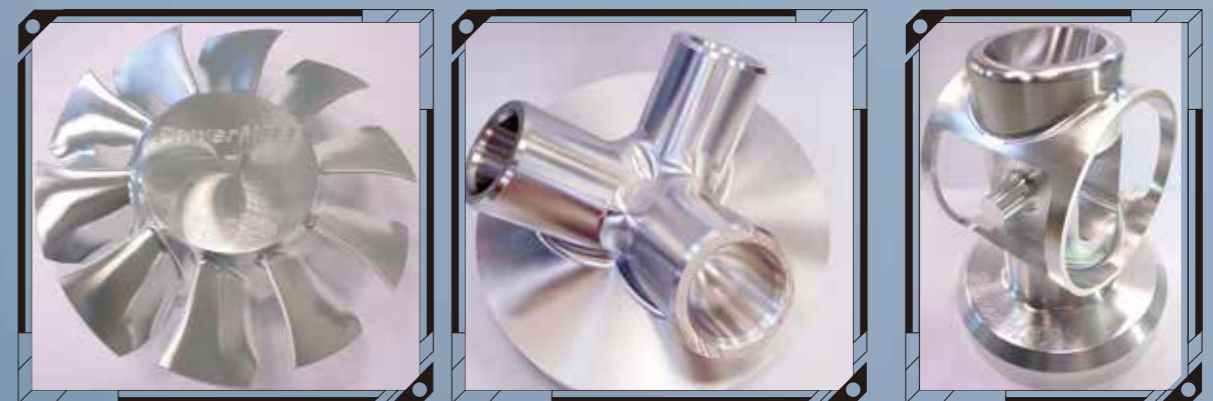
### B AXIS



## VX-800 Processing Range

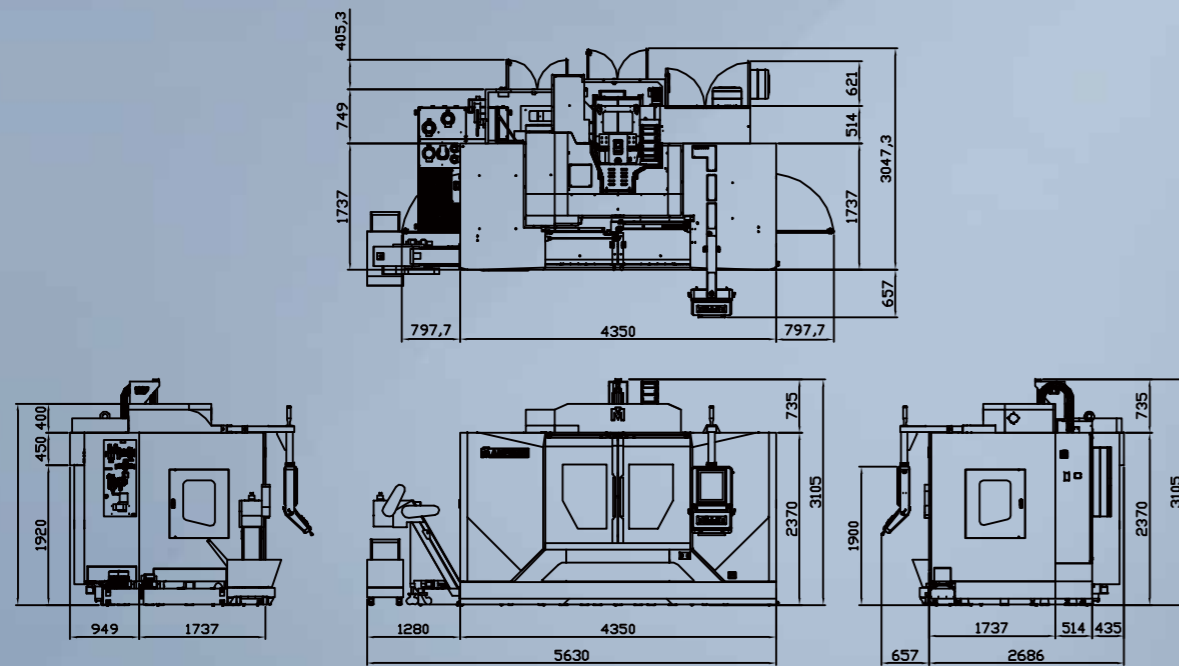


## High Application Performance



VX series have been design for complex workpiece on 5 sides with one clamp. The workpiece can be completed with high precision and short process time. VX series can be used in a variety industries, such as aerospace, automotive and high-tech electronics...etc.

## VX-600 (T) Machine Dimensions



## STANDARD ACCESSORIES

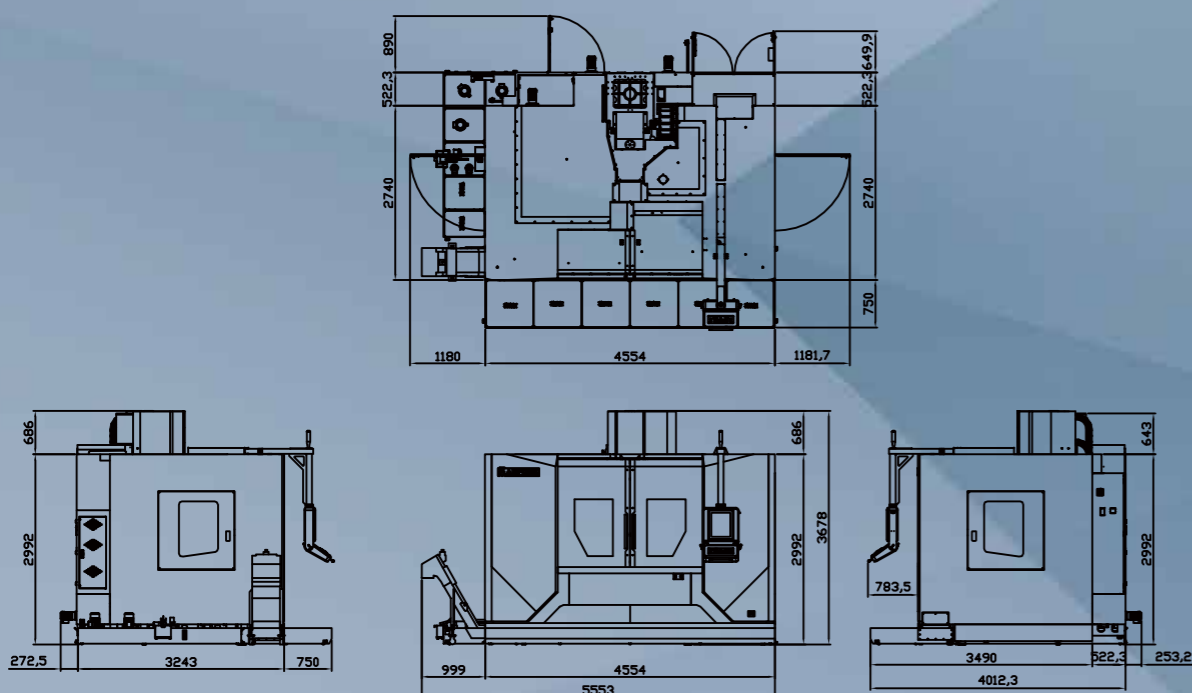
- ▼ Rigid tapping
- ▼ RJ-45 interface
- ▼ Automatic lubrication system
- ▼ Work light
- ▼ Auto power off
- ▼ Air conditioner for electrical cabinet
- ▼ Double chip augers on base
- ▼ Scraper type chip conveyor
- ▼ Spindle oil cooler
- ▼ B/C axis encoders
- ▼ Coolant nozzles around spindle
- ▼ Remote handwheel

Heidenhain TNC 640

Siemens ONE



## VX-800 (T) Machine Dimensions



## OPTIONAL ACCESSORIES

- ▼ Automatic tool length measurement system
- ▼ Automatic workpiece measurement system
- ▼ Coolant through spindle (30 bars/70 bars)
- ▼ Linear scales (3 axes)
- ▼ Thermal compensation
- ▼ Transformer
- ▼ Oil skimmer
- ▼ CE



## MACHINE SPECIFICATIONS

	Specifications	Unit	VX-600	VX-600T	VX-800	VX-800T
	CNC controller		Heidenhain TNC640 / Siemens ONE	Heidenhain TNC640 / Siemens ONE	Heidenhain TNC640 / Siemens ONE	Heidenhain TNC640 / Siemens ONE
TRAVEL	X Travel	mm	1,300	1,300	1,600	1,600
	Y Travel	mm	700	700	900	900
	Z Travel	mm	700	700	850	850
	Spindle Nose to Table Surface	mm	20 ~ 720	20 ~ 720	20 ~ 870	20 ~ 870
TABLE	Table Size	mm	700 x 1,450	700 x 1,450	850 x 1,800	850 x 1,800
	T-Slot (size x no. x dist.)	-	18 mm x 5 x 125 mm	18 mm x 5 x 125 mm	22 mm x 5 x 150 mm	22 mm x 5 x 150 mm
	Max. Table Load	kgs	1,000	600	1,500	1,500
SPINDLE	Spindle Transmission		built-in	built-in	built-in	built-in
	Spindle Taper		BBT 40	HSK T63	BBT 40	HSK T63
	Spindle Speed	rpm	15,000	12,000	15,000	12,000
	Spindle Motor	kW	21 ~ 25	21 ~ 25	21 ~ 25	21 ~ 25
B-AXIS	Transmission		worm gear	worm gear	worm gear	worm gear
	Tilting Angle	deg	-120° ~ +30°	-120° ~ +30°	-120° ~ +30°	-120° ~ +30°
	Clamping Torque	kgf-m	153	2,800	153	2,800
	Min. Indexing Unit	deg	0.001°	0.001°	0.001°	0.001°
C-AXIS	Transmission		DD motor	DD motor	DD motor	DD motor
	Table Diameter	mm	Ø630	Ø630	Ø800	Ø800
	Rotating Angle	deg	360°	360°	360°	360°
	Max. Speed	rpm	120	1,200	60	500
	Clamping Torque	kgf-m	300	400	315	315
	Min. Indexing Unit	deg	0.001°	0.001°	0.001°	0.001°
	Max. Table Load	kgs	1,000	600	1,500	1,500
FEEDRATE	Rapid Feedrate (X/Y/Z)	M/min	30 / 30 / 24	30 / 30 / 24	16 / 16 / 16	16 / 16 / 16
	Cutting Feedrate	mm/min	1 ~ 10,000	1 ~ 10,000	1 ~ 10,000	1 ~ 10,000
	ATC					
	Tool Storage Capacity	T	24 tools (opt.: 30/32/40 tools)	24 tools (opt.: 30/32/40 tools)	24 tools (opt.: 30/32/40 tools)	24 tools (opt.: 30/32/40 tools)
OTHERS	Machine Weight	kgs	12,000	12,000	19,000	19,000

\*VX series need to be shipped by 1\*20' flat rack and 1\*20' GP container.

The manufacturer reserves the right to modify and/or update the design, specifications, mechanisms, etc. to improve the performance of the machine.

Specifications are subject to change without notice.