

High Efficiency Machining Center



NV Series

V-12iP/V-20S/V-30S/
V-30M/V-40iL/V-50L
V-60S/V-60i/V-80i

LEADWELL
LEADWELL CNC MACHINES MFG., CORP.



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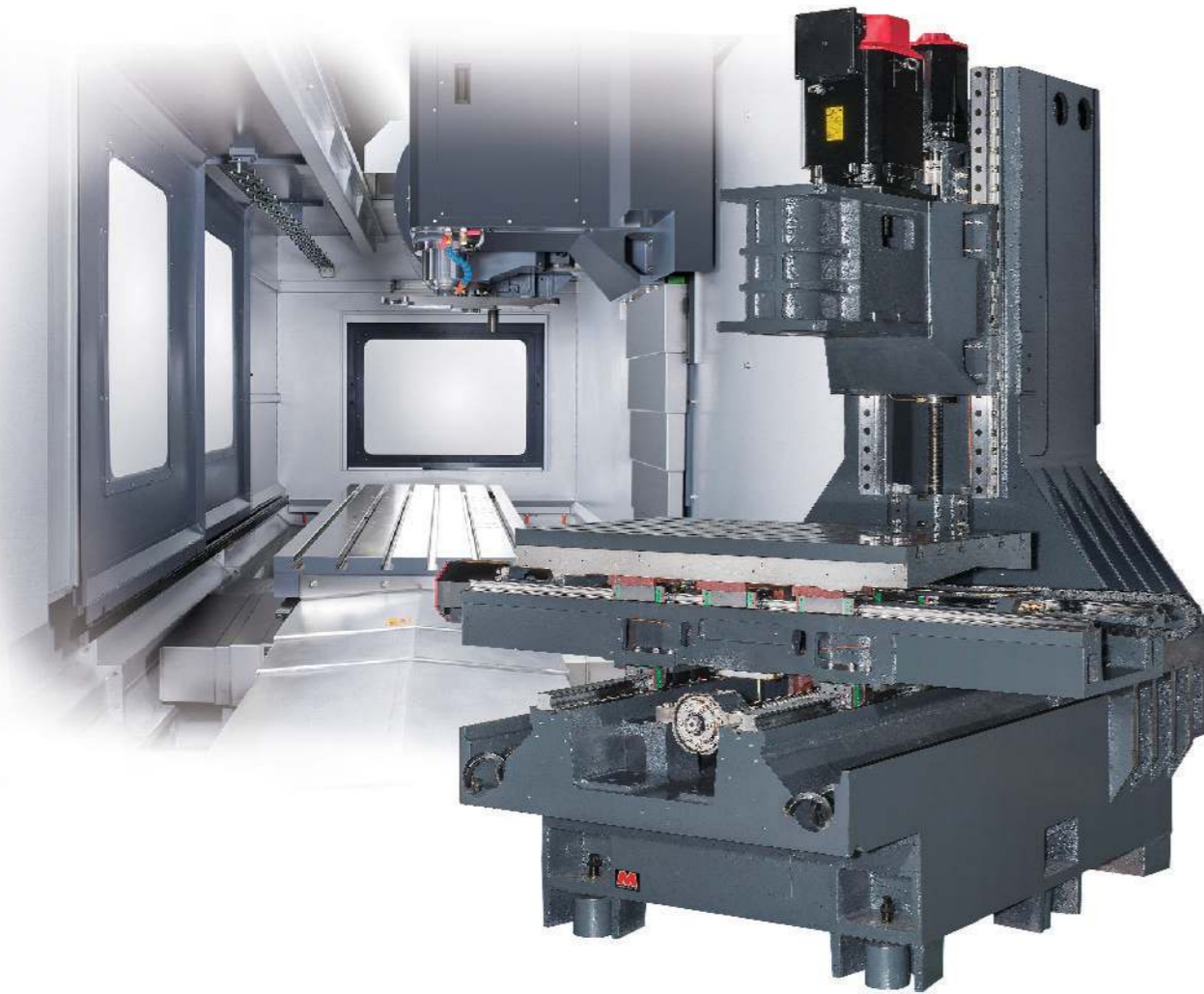


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* All performance are based on 220V/3PH/60HZ. Specifications are subject to change without notice.

2017.02



High Efficiency Machining Center

High Rigidity:

- FEA Analysis
- High rigidity structure design
- Dual nuts ball screw design in X and Y axis
- The new wider base and saddle improved machine rigidity
- Saddle one piece design

High Reliability:

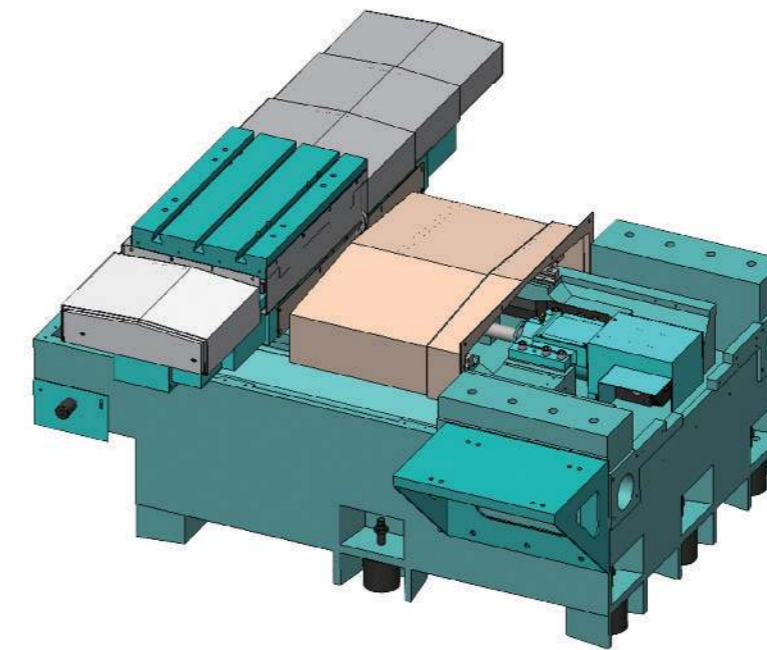
- Roller type motion system
- 3 Axis absolute motor
- One piece telescope design in rear Y axis
- Ball screw bearing lubrication system design
- Front chip disposal system with surrounding coolant system

High Efficiency:

- Rapid feed rate 48/48/48 mm
- Spindle speed 12,000/15,000 rpm(optional)
- Tool change time T to T 1.8 sec
- Tool change time C to C 4 sec

High Flexibility:

- 30 tools magazine available
- 4/5 axis rotary table available



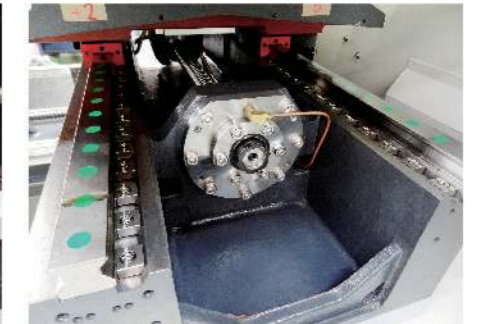
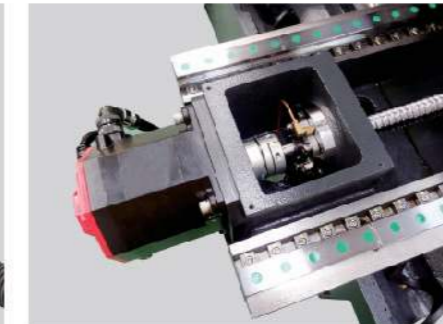
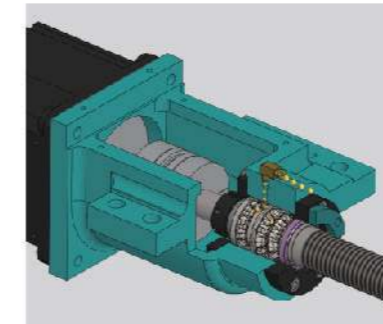
One piece telescope design in rear Y axis



3 Axis absolute motor



Saddle one piece design



Three Axis Bearing Oil Lubrication System

1. Extend bearing life
2. Reduce bearing temperature
3. Creates positive pressure within bearing to prevent the entry of foreign matters.



Dual nuts ball screw design in X and Y axis



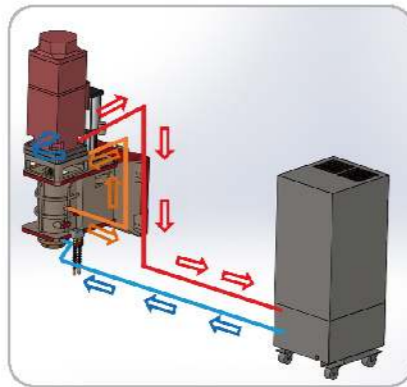
Surrounding coolant system

V-12iP- Feature

1. High rigid cast iron construction with closed type design. (Machine Weight 5000kg)
2. Machine stable design supporting by big span saddle and foundation screws.
3. Without counter weight enhance the accuracy on mold making as well as avoid vibration.
4. Easy chip removal rear type by using auger chip conveyor through middle & Small footprint to save space.
5. ATC is supported by bottom end of the column to reduce vibration when ATC rotates.
6. V-12iP is designed for production environment. It can literally stand against one another to utilize valuable floor space and to promote cell manufacturing.
7. Industrial Applications include Medical equipment.

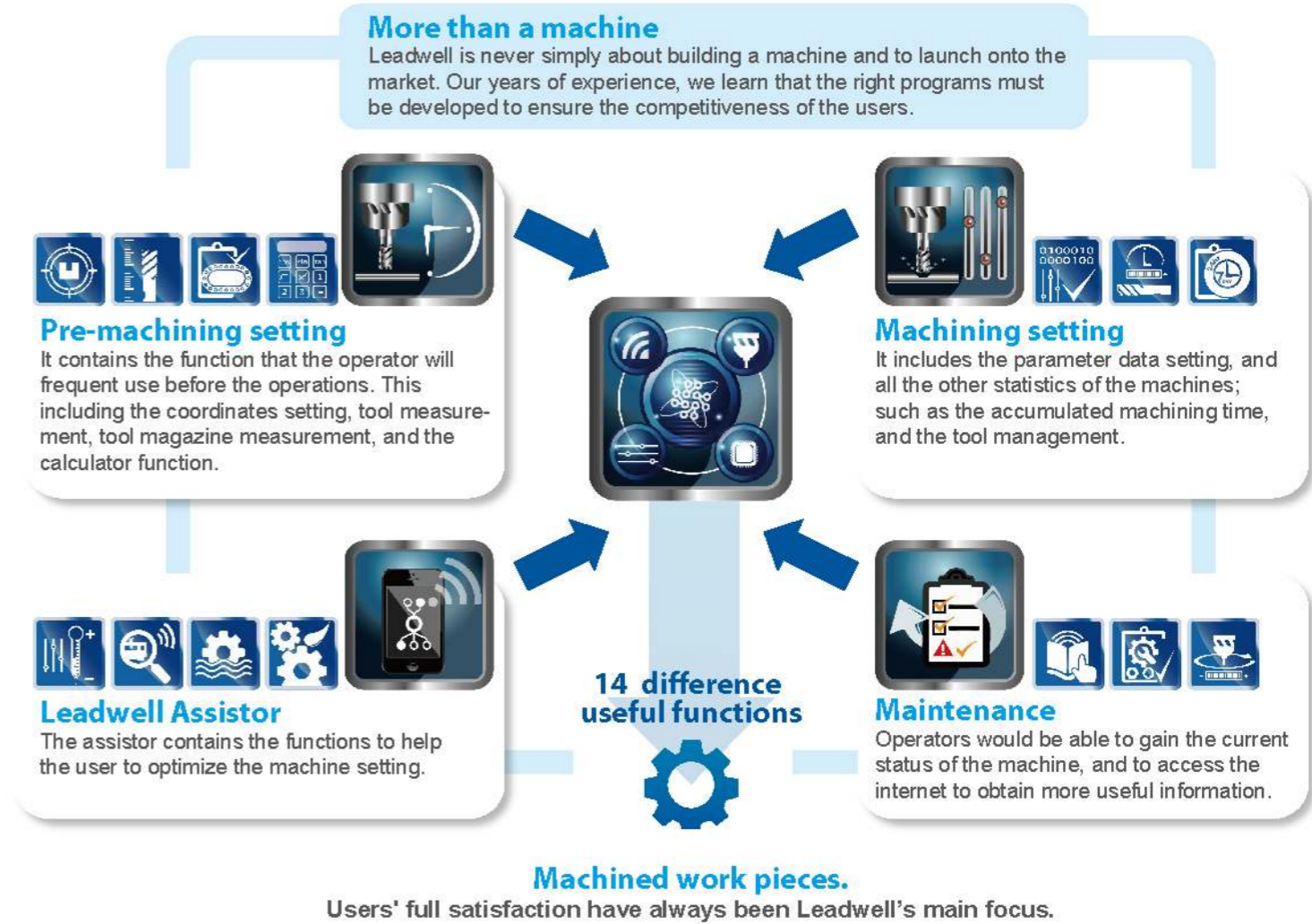


Motor Coupling Plate Cooling System (For DDS.)



The motor coupling plate is a cooling system that will minimize the heat of head casting to spray to the spindle. The spindle oil coolant will not only reduce the heat accumulation within the spindle but also cooling the interface between motor and head casting. Both of the motor coupling plate and spindle oil coolant are incorporated to ensure the minimum chances of thermal deformation of the spindle head.

LEADWELL SMART PROCESSOR



FEA REPORT(Finite Element Analysis)

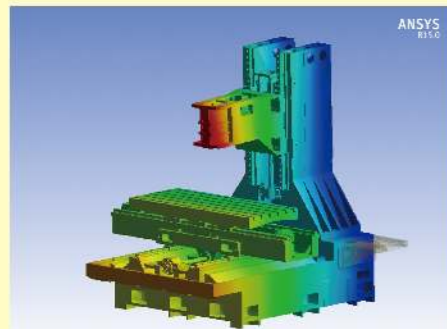
Optimum

- Section areas
- Bending stiffness
- Moments of inertia
- Transverse shear
- Torsional constant
- Vibration reduce
- Plate thickness

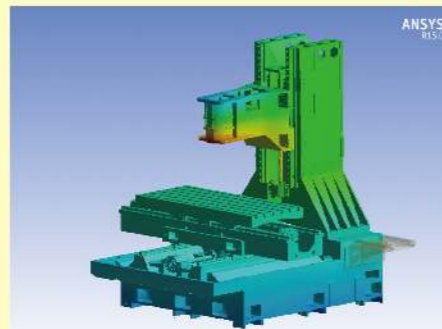
With FEA you can:

1. Predict and improve product performance and reliability.
2. Reduce physical prototyping and testing.
3. Evaluate different designs and materials.
4. Optimize designs.

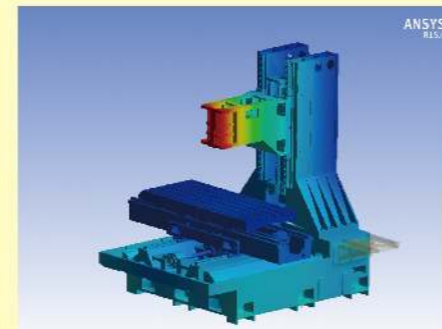
V-50L



X AXIS



Y AXIS



Z AXIS

PERFORMANCE

V-50L

FACE MILL	
Removal Rate	400cc/min.
Tool	Ø100mm
Spindle Speed	1500rpm
Feed Rate	1000mm/min
Width of Cut	80mm
Depth of Cut	5mm

U-DRILL	
Drilling	Ø60mm
Tool	Ø60mm
Spindle Speed	1500rpm
Feed Rate	100mm/min.
Depth of Cut	55mm

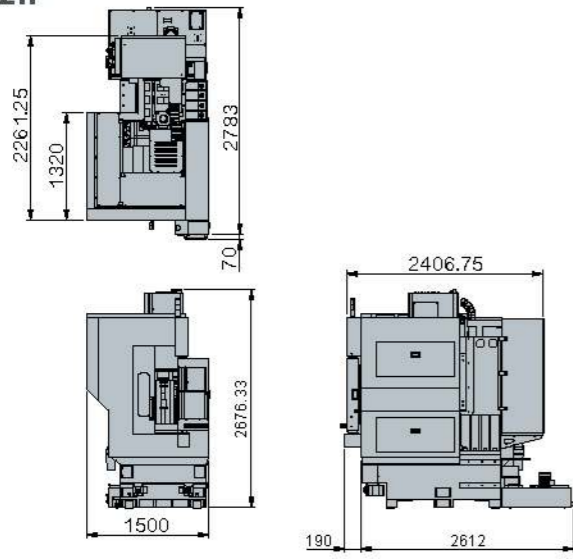
Material: S45C

END-MILL	
Removal Rate	280cc/min.
Tool	Ø20mm
Spindle Speed	1850rpm
Feed Rate	700mm/min
Width of Cut	20mm
Depth of Cut	20mm

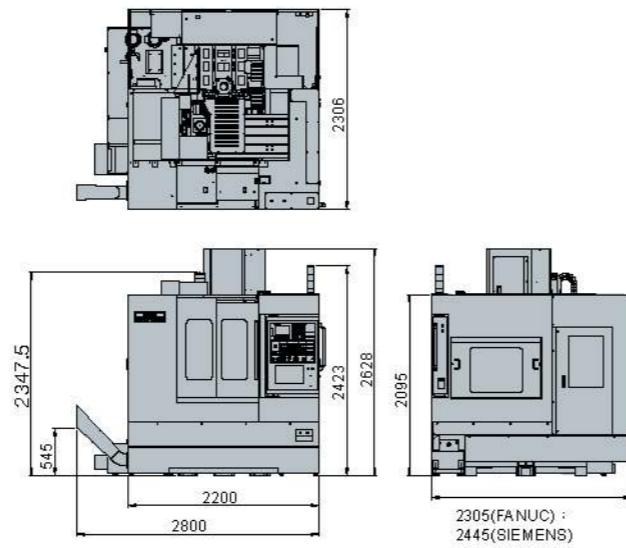
RIGID TAP	
Tapping	M20
Spindle Speed	1000rpm
Feed Rate	2500mm/min.

OUTLINE DIMENSION

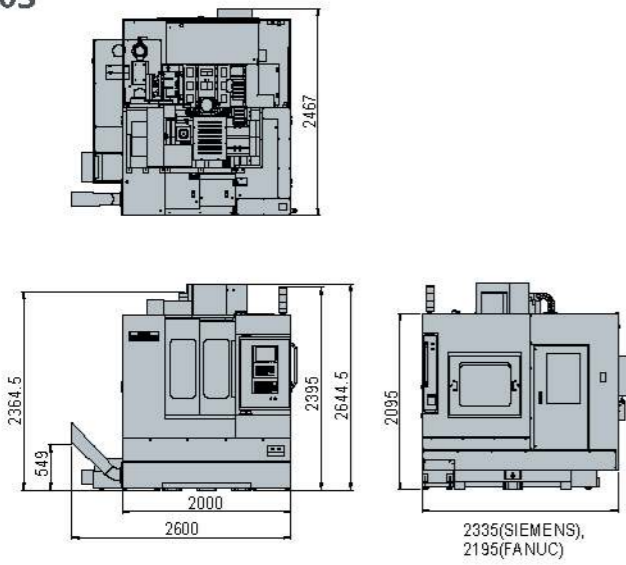
V-12iP



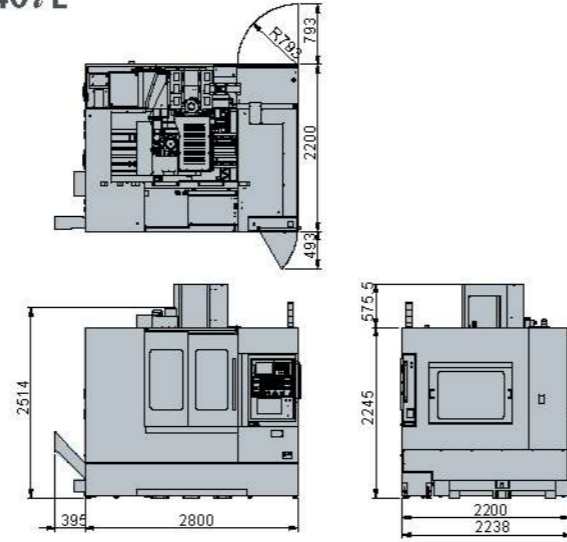
V-30M



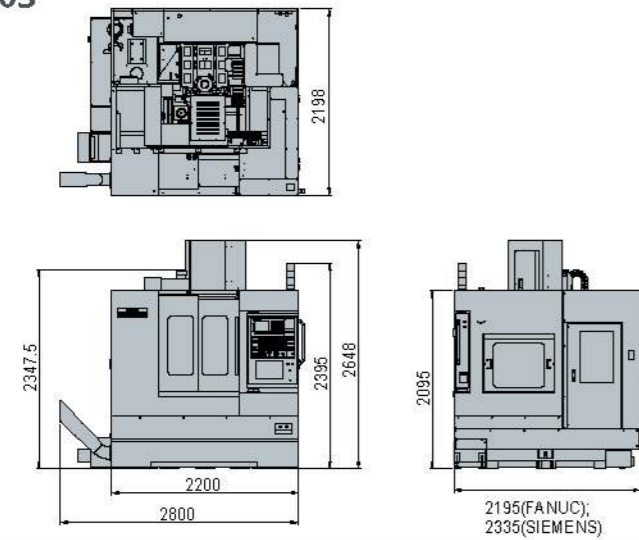
V-20S



V-40iL

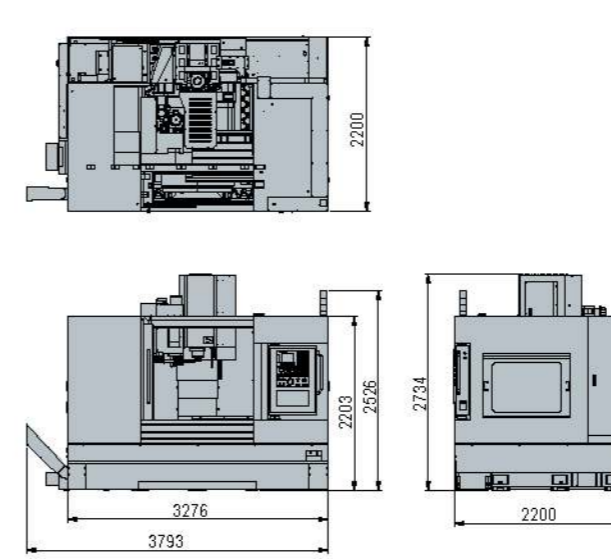


V-30S

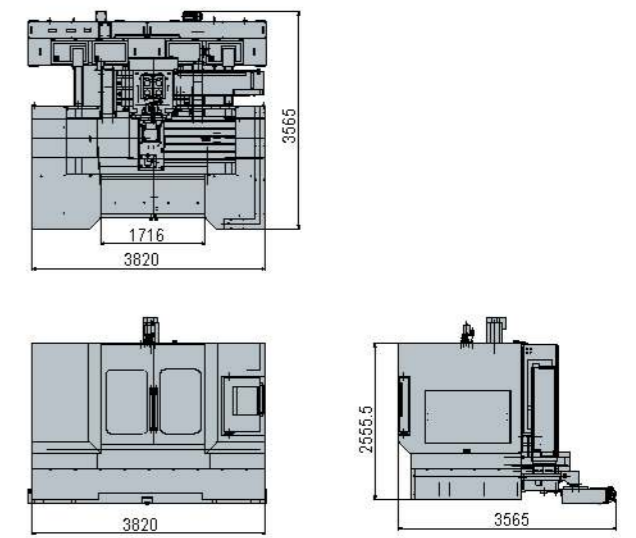


OUTLINE DIMENSION

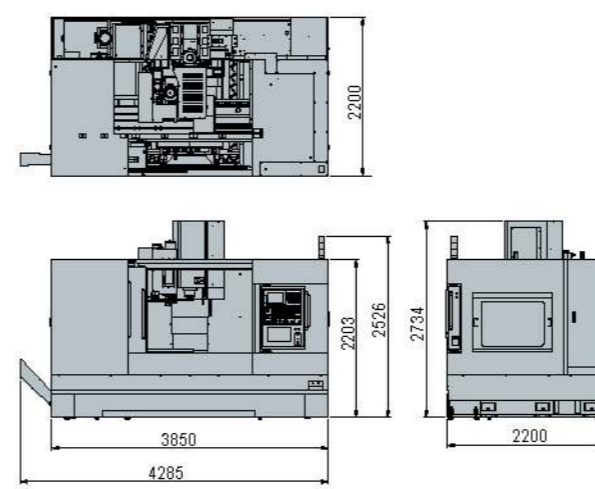
V-50L



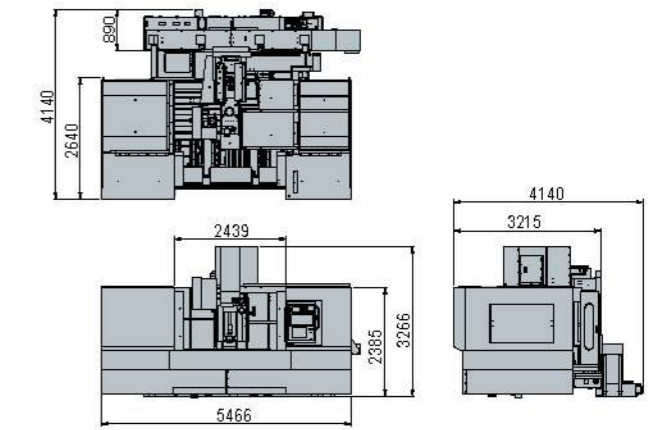
V-60i



V-60S

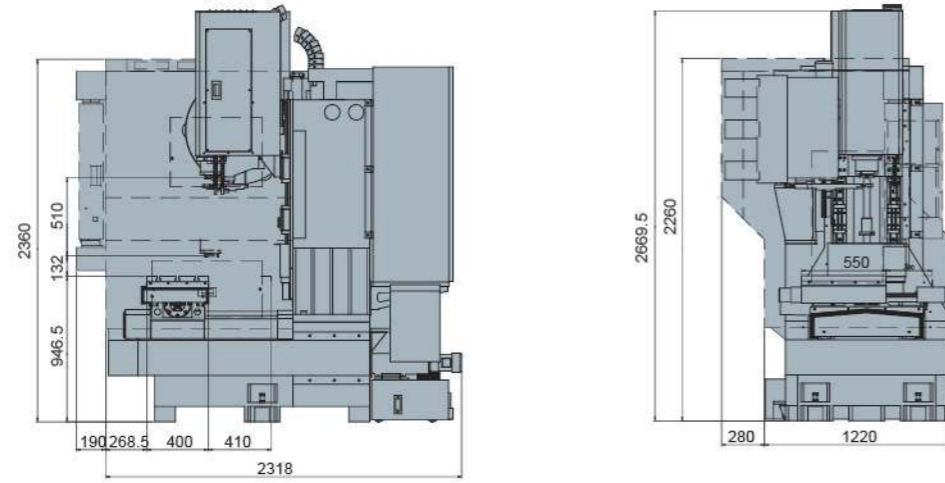


V-80i



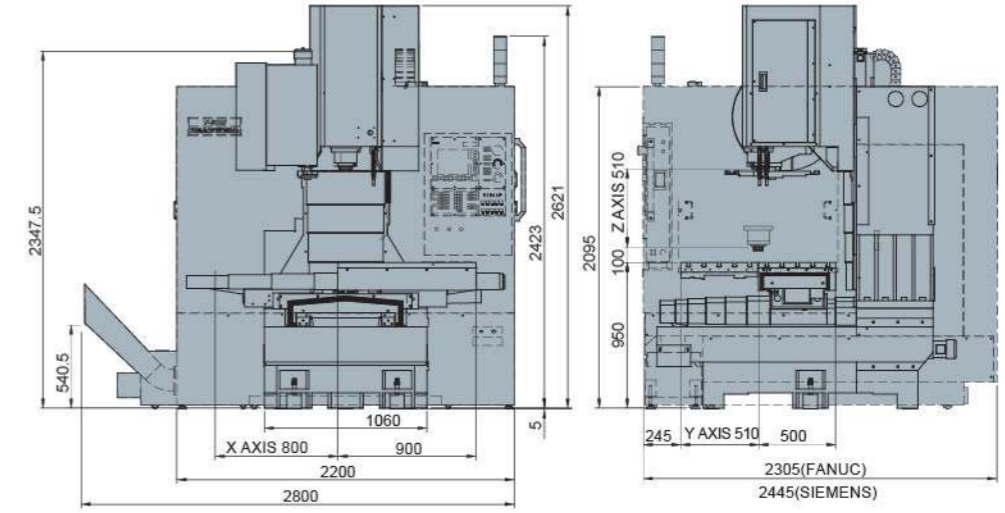
INTERNAL DIMENSION

V-12iP



INTERNAL DIMENSION

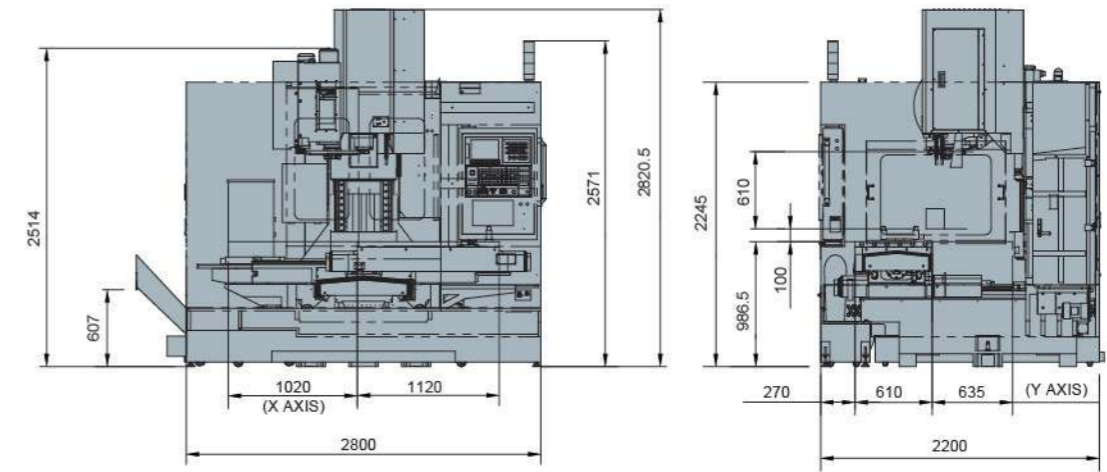
V-30M



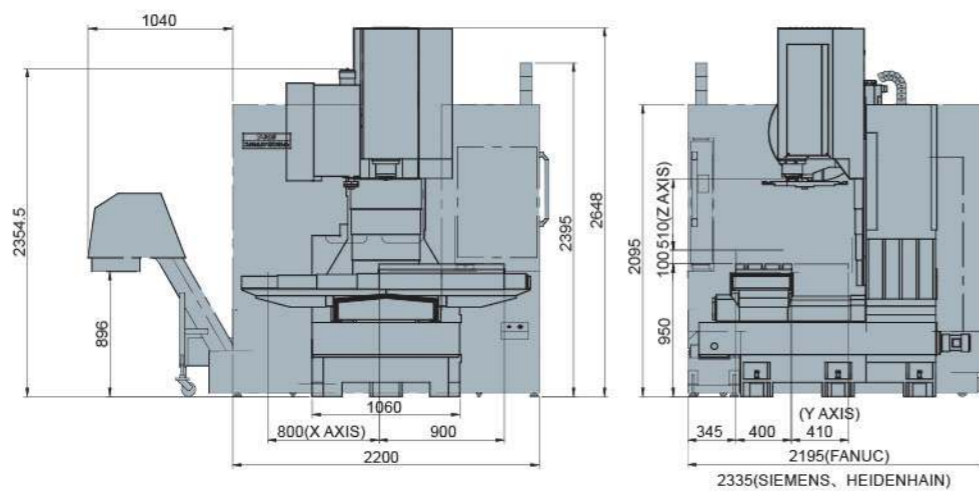
V-20S



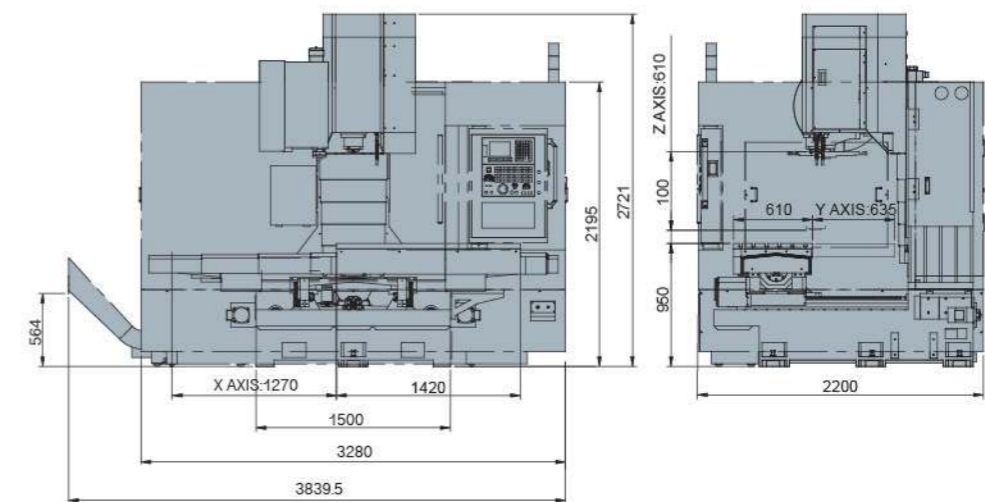
V-40iL



V-30S

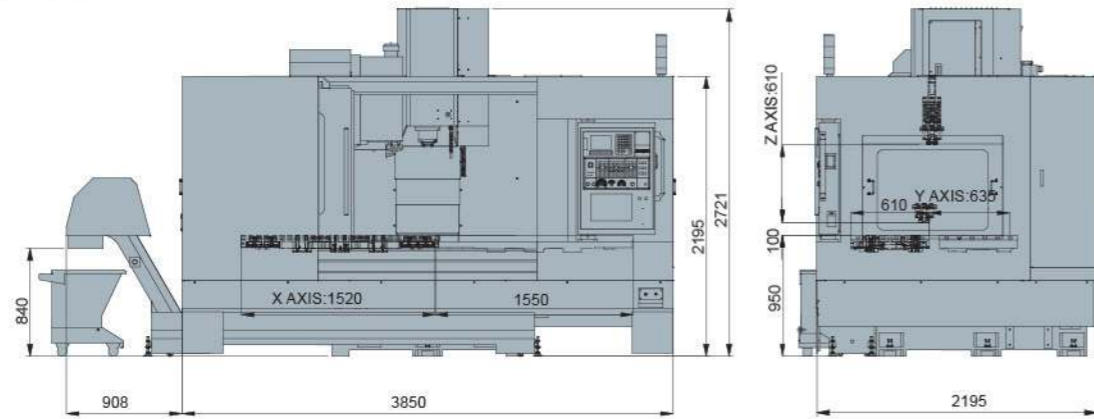


V-50L

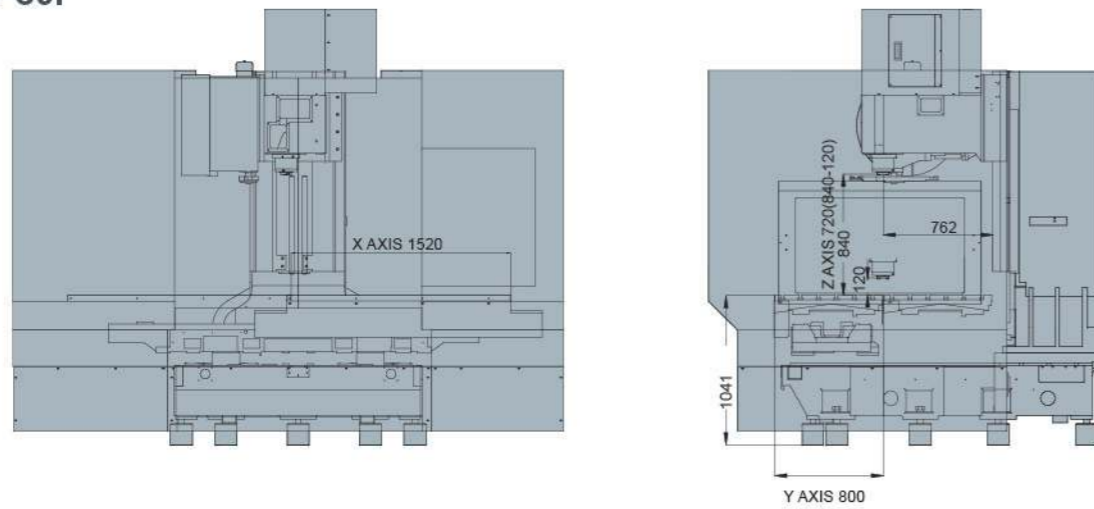


INTERNAL DIMENSION

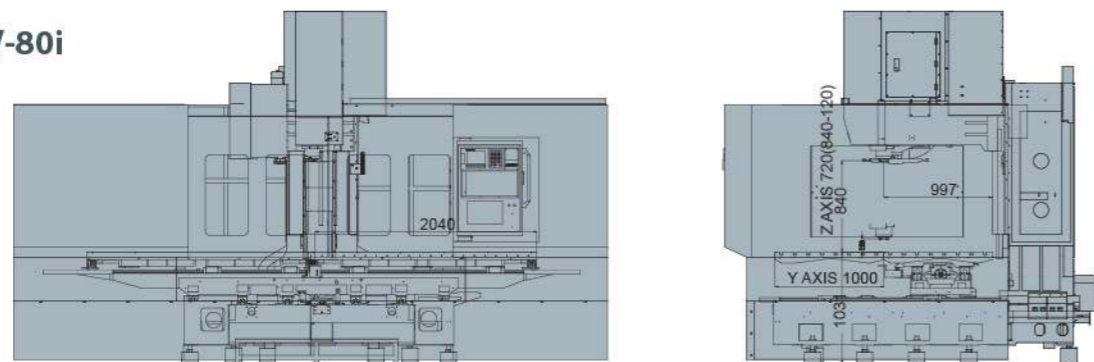
V-60S



V-60i

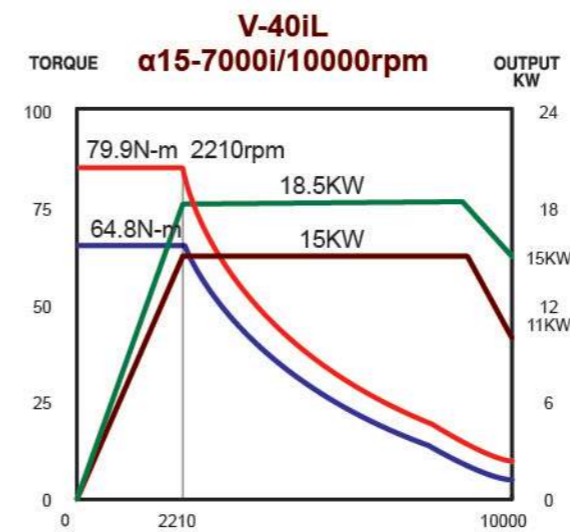
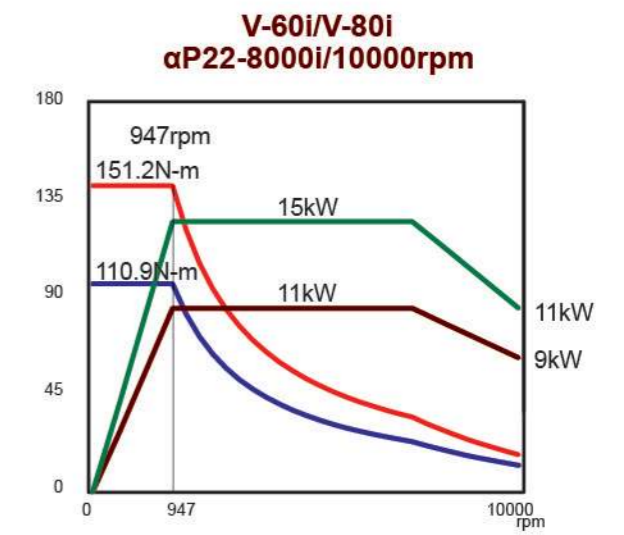
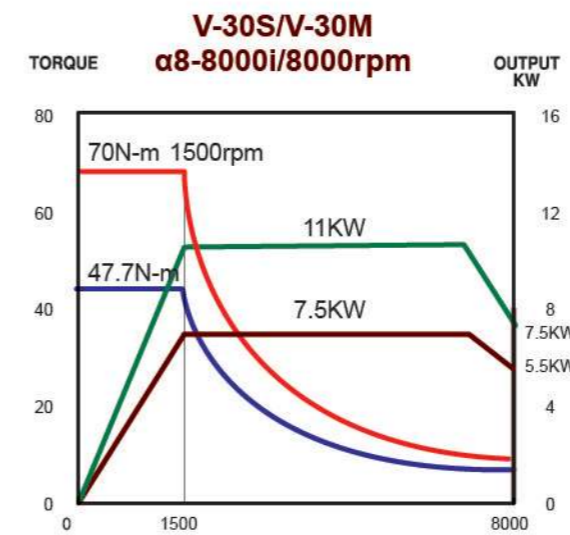
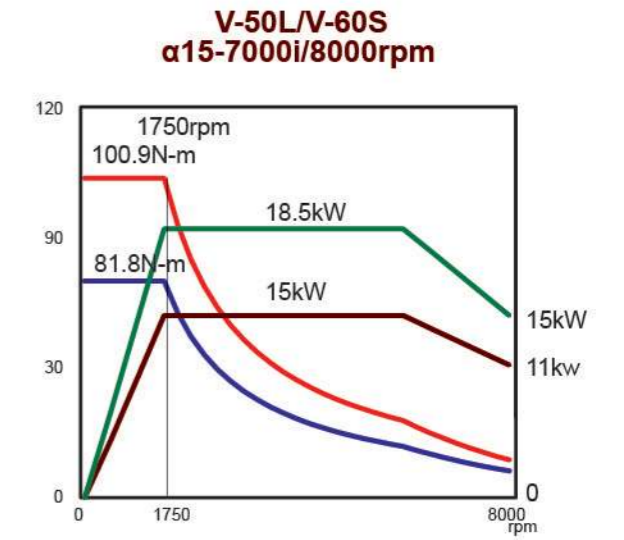
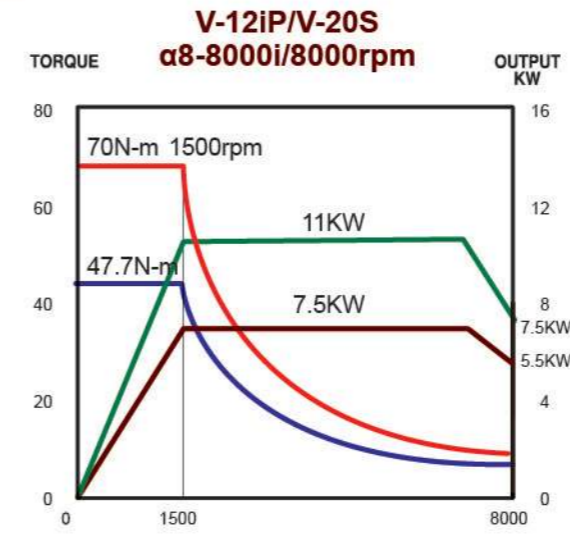


V-80i



SPINDLE POWER CURVE

- Continuous N-m
- 30 min N-m
- Coutinuous KW
- 30 min KW

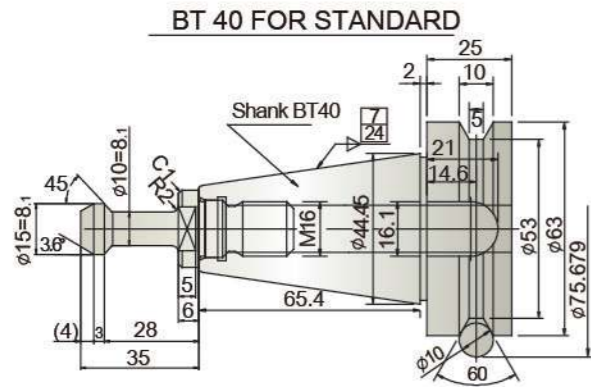


VERTICAL MACHINING CENTERS

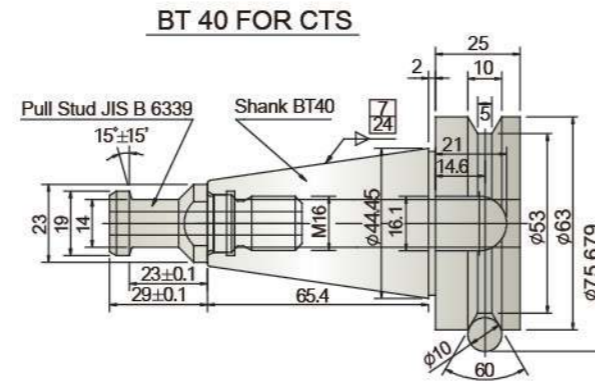
MACHINE SPECIFICATIONS

Pull Stud

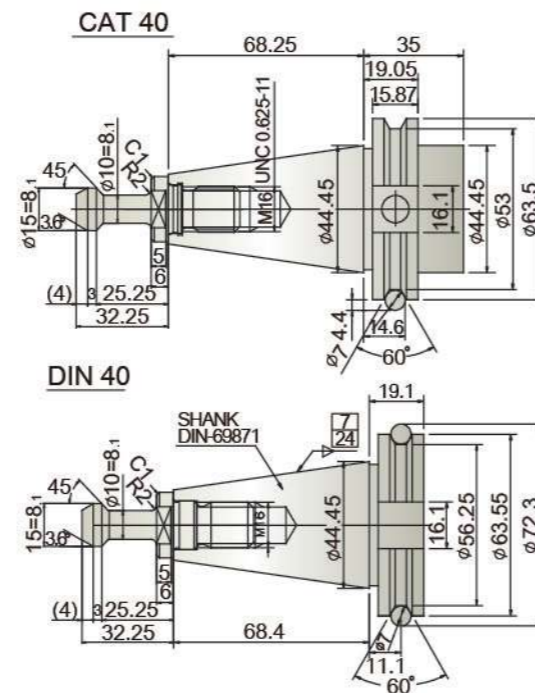
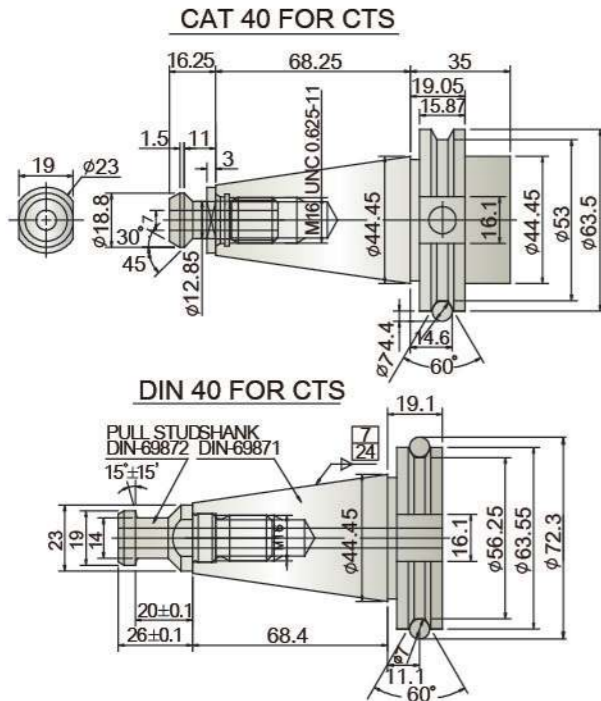
Standard



Optional



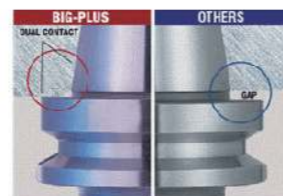
Optional



Cartridge Type Spindle



BBT Two face contact



ITEM	MODEL	V-12iP	V-20S	V-30S	V-30M
A.T.C	Type	Arm	Arm	Arm	Arm
CAPACITY	Unit				
X axis travel	mm (in)	300(11.8)	510(20)	800(31.5)	800(31.5)
Y axis travel	mm (in)	410(16)	410(16)	410(16)	510(20)
Z axis travel	mm (in)	510(20)	510(20)	510(20)	510(20)
Distance from table top to spindle end	mm (in)	100-610(4-24)	100-610(4-24)	100-610(4-24)	100-610(4-24)
Distance from column front to spindle center	mm (in)	450(17.7)	450(17.7)	450(17.7)	550(21.6)
TABLE					
Table size (L x W)	mm (in)	550X400(21.6x15.7)	600x400(23.6x15.7)	900X400(35.4x15.7)	900X500(35.4x19.6)
Max. table load weight	kg	500(1102)	500(1102)	500(1102)	500(1102)
T-slot size	mm	18TX125X3	18TX125X3	18TX100X3	18TX100X5
SPINDLE					
Spindle speed	rpm	8000/10000/12000/15000			
Spindle nose (normal size, No.)		7/24 TAPER,NO.40	7/24 TAPER,NO.40	7/24 TAPER,NO.40	7/24 TAPER,NO.40
Spindle bearing inner diameter	mm(in)	70(2.75)	70(2.75)	70(2.75)	70(2.75)
FEED RATE					
Rapid traverse X/Y/Z	m/min(ipm)	48(1889)	48(1889)	48(1889)	48(1889)
Max. cutting feed rate	m/min(ipm)	10(394)	10(394)	10(394)	10(394)
A.T.C.					
Tool storage capacity	pcs	24	24	24	24
Max. tool diameter(with adjacent tools)	mm(in)	80(3.15)	80(3.15)	80(3.15)	80(3.15)
Max. tool length	mm(in)	225(8.86)	250(10)	250(10)	250(10)
Tool change time(T-T/C-C)	sec	1.8/4	1.8/4	1.8/4	1.8/4
MOTORS					
Spindle motor(30 min) FANUC	kw(hp)	11(14.7)	11(14.7)	11(14.7)	11(14.7)
X/Y/Z axis motor	kw(hp)	1.6/3/4(2/4/5.4)	1.6/3/4(2/4/5.4)	3/3/4(4/4/5.4)	3/3/4(4/4/5.4)
MACHINE SIZE					
Height of machine (H)	mm(in)	2680(105.5)	2620(103.1)	2650(104.3)	2650(104.3)
Floor space (L x W)	mm(in)	1500X2600(59X102.3)	2700X2200(106.3X86.6)	2900X2310(114X91)	2900X2310(114X91)
Total machine weight	kg	4500	5600	5700	5850
Power requirement	KVA	25	25	25	25
Controller	FANUC	Oi-M			

*AVAILABLE CONTROLLER: SIEMENS/MITSUBISHI/FAGOR/HEIDENHAIN

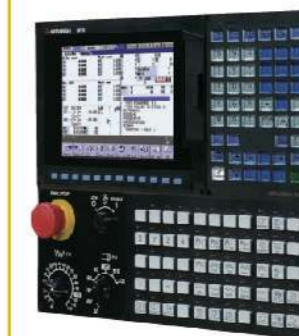
Control Panel OPTION



FANUC



SIEMENS



MITSUBISHI



FAGOR

MACHINE SPECIFICATIONS

ITEM	MODEL	MODEL				
		V-40iL	V-50L	V-60S	V-60i	V-80i
A.T.C	Type	Arm	Arm	Arm	Arm	Arm
CAPACITY	Unit					
X axis travel	mm (in)	1020(40.2)	1270(50)	1520(59.8)	1520(59.8)	2040(80.3)
Y axis travel	mm (in)	635(25)	635(25)	635(25)	800(31.5)	1000(40)
Z axis travel	mm (in)	610(24)	610(24)	610(24)	720(28.3)	720(28.3)
Distance from table top to spindle end	mm (in)	100-710(4-27.9)	100-710(4-27.9)	100-710(4-27.9)	120-840(4.8-33)	120-840(4.8-33)
Distance from column front to spindle center	mm (in)	635(25)	635(25)	635(25)	760(30)	1000(40)
TABLE						
Table size (L x W)	mm (in)	1120X610(44X24)	1420X610(56X24)	1550X610(61X24)	1550X750(61X29.5)	2100X1000(82.7X40)
Max. table load weight	kg	800(1760)	1000(2200)	1000(2200)	1200(2640)	1800(3960)
T-slot size	mm	18TX100X6	18TX100X6	18TX100X6	18TX125X6	18TX125X8
SPINDLE						
Spindle speed	rpm	10000/12000/15000				
Spindle nose (normal size, No.)		7/24 TAPER, NO.40	7/24 TAPER, NO.40	7/24 TAPER, NO.40	7/24 TAPER, NO.40	7/24 TAPER, NO.40
Spindle bearing inner diameter	mm(in)	70(2.75)	70(2.75)	70(2.75)	70(2.75)	70(2.75)
FEED RATE						
Rapid traverse X/Y/Z	m/min(ipm)	48/48/36 (1889/1889/1417)	36(1417)	36(1417)	24/24/20 (945/945/787.4)	24/24/20 (945/945/787.4)
Max. cutting feed rate	m/min(ipm)	10(394)	10(394)	10(394)	5(196.8)	5(196.8)
A.T.C.						
Tool storage capacity	pcs	24	24	24	24	24
Max. tool diameter(with adjacent tools)	mm(in)	80(3.15)	80(3.15)	80(3.15)	80(3.15)	80(3.15)
Max. tool length	mm(in)	250(10)	250(10)	250(10)	250(10)	250(10)
Tool change time T-T (C-C)	sec	1.8/5	1.8/4	1.8/4	1.8/4	1.8/4
MOTORS						
Spindle motor(30 min) FANUC	kw(hp)	18.5(24.8)	18.5(24.8)	18.5(24.8)	15(20)	15(20)
X/Y/Z axis motor	kw(hp)	4/4/4(5.4/5.4/5.4)			4/4/4(5.4/5.4/5.4)	4/4/4(5.4/5.4/5.4)
MACHINE SIZE						
Height of machine (H)	mm(in)	2721(107)	2721(107)	2721(107)	3350(132)	3350(132)
Floor space (L x W)	mm(in)	3200X2200 (126X86.6)	3840X2200 (151.2X86.6)	4130X2200 (162.6X86.6)	3820X3565 (150X140)	5466X4140 (215X163)
Total machine weight	kg	6200	7000	7800	10500	11700
Power requirement	KVA	30	30	30	35	35
Controller	FANUC	Oi-M				

*AVAILABLE CONTROLLER:SIEMENS/MITSUBISHI/FAGOR/HEIDENHAIN

MACHINE ACCESSORIES

ITEM	MODEL	V-12iP	V-20S	V-30S	V-30M	V-40iL	V-50L	V-60S	V-60i	V-80i
Full enclosure guarding		●	●	●	●	●	●	●	●	●
Chip conveyor (auger type)		●	●	●	●	●	●	●	●	●
Work light		●	●	●	●	●	●	●	●	●
Alarm lamp		●	●	●	●	●	●	●	●	●
Heat exchanger		●	●	●	●	●	●	●	●	●
Rigid tapping		●	●	●	●	●	●	●	●	●
Auto counter for work piece		●	●	●	●	●	●	●	●	●
Remote MPG		●	●	●	●	●	●	●	●	●
Surrounding coolant system		■	●	●	●	●	●	■	■	■
Spindle air purge		●	●	●	●	■	■	●	●	●
10000rpm spindle		■	■	■	■	●	■	■	●	●
12000rpm spindle		■	■	■	■	■	■	■	■	■
Spindle oil chiller		■	■	■	■	●	■	■	●	●
Two speed gearbox		x	x	x	■	■	■	■	■	■
CTS From A		■	■	■	■	■	■	■	■	■
Linear scale		■	■	■	■	■	■	■	△	△
Tool overload detection		■	■	■	■	■	■	■	■	■
Auto tool length measurement (ATLM)		■	■	■	■	■	■	■	■	■
Automatic workpiece measurement		■	■	■	■	■	■	■	△	△
Simple tool life management		■	■	■	■	■	■	■	△	△
Chip conveyor outside machine & chip bucket		■	■	■	■	■	■	■	■	■
Oil skimmer		■	■	■	■	■	■	■	△	△
Coolant gun		■	■	■	■	■	■	■	■	■
Air conditioner		■	■	■	■	■	■	■	△	△
Rotary table preparation		■	■	■	■	■	■	■	■	■
Manual tailstock for rotary table		■	■	■	■	■	■	■	△	△
Through hole drill kit		■	■	■	■	■	■	■	■	■
DNC link software		■	■	■	■	■	■	■	△	△
Programmable nozzle		■	■	■	■	■	■	■	△	△
Programmable air blow		■	■	■	■	■	■	■	△	△
CTS preparation		■	■	■	■	■	■	■	■	■
Extra coolant tank		■	■	■	■	■	■	■	△	△
Spindle annular coolant jet (Arm type ATC)		■	■	■	■	■	■	■	■	■
Auto door		△	△	△	△	△	△	△	x	x
ARM 30T ATC		△	△	△	△	■	■	△	△	△
Table guarding		△	△	△	△	△	△	△	x	x

● : S.T.D / ■ : O.P.T (DESIGNED) / ▲ : O.P.T (TO BE ADVISED) / x : N/A(NOT AVAILABLE)