

# NEWAY MACHINE QUOTE

NEWAY CHINA

NEWAY U.S.

## VM1150S Vertical Machining Center



# VM1150S

## High Precision Vertical Machining Center



## SPECIFICATIONS:

### ● CAPACITY

X axis travel	1000mm(39.4")
Y axis travel	520mm(20.5" )
Z axis travel	560mm

### ● GUIDE WAY

X guide way span	350mm( 13.8")/ 35roller
Y guide way span	620mm(24.4" )/ 45 ball
Z guide way span	420mm( 16.5")/45 ball

### ● BALL SCREW

X ball screw	40x16mm
Y ball screw	40x12mm
Z ball screw	40x10mm
Ball screw class	C3

### ● DRIVING MOTOR

X motor	1.8Kw/11NM
Y motor	1.8Kw/11NM
Z motor	3.0Kw/21NM

### ● MOTION

X axis rapid travel	30m/min (36)
Y axis rapid travel	30m/min (36)
Z axis rapid travel	24m/min(30)
Cutting speed	10000
Positioning accuracy (Full stroke) XYZ	0.008mm
Repeatability XYZ	0.005

### ● WORK TABLE

Table length	1100mm (43.3" )
Tale width	520mm( 20.5" )
Table surface to floor :	960mm( 37.8" )
Table Max loading weight	750kg
T slot	18mm

### ● MAIN SPINDLE

Spindle nose to table	150-710mm ( 5.9"-27.95" )
Spindle center to Z axis	590mm (23.2" )
Spindle type	BT40

Spindle speed  
 Spindle motor  
 Spindle torque

8000rpm  
 7.5/11kw (10.1/14.8hp)  
 35.8/47.7nm

● **AUTOMATIC TOOL MAGAZINE**

Number of tools  
 Tool shank  
 Max tool Dia/length /weight  
 Tools change time

24  
 BT40  
 dia78/300/8  
 1.55 sec

● **GENERAL**

Foot print (LxWxH):  
 Machine weight :

4040x2650x3120mm  
 7000kg

● **UTILITY:**

Power required  
 Voltage required – Fanuc  
 Compressed air pressure  
 Compressed air consumption

25 kVA/40A  
 380 Volts /50Hz / 3 Phase  
 0.6~0.8 Mpa  
 280 L/min

● **HYDRAULIC SYSTEM:**

Tank capacity  
 Pump motor power  
 Discharge pressure

60L (232.5 gal)  
 1.5Kw (2Hp)  
 5MPa

● **LUBRICATION SYSTEM:**

Tank capacity  
 Pump motor power  
 Discharge pressure  
 Distributor type

4L  
 0.035Kw  
 2.5MPa  
 Metering

● **FLOOD COOLANT SYSTEM:**

Tank capacity  
 Pump motor power  
 Filtration  
 Max. Pressure  
 Max. Flow rate  
 Pump type

430L  
 0.55kw  
 20 mesh  
 0.15 MPa  
 33 L/min  
 Immersion type

● **PACKING SIZE**

Packing type  
 Packing size

steel plate  
**3920X2300X2530mm**

## ➤ **Standard configuration**

- FANUC 0i MF 5 Plus CNC system, 2MB system memory, 7.5/11KW spindle motor
- 3 axis linear guide way
- 8000rpm belt drive spindle ,BT40
- 24 tools arm type tools magazine
- Air conditioner of electrical cabinet
- Auto chip conveyer & one chip chart
- Machine body washing system
- Auto oil lubrication system
- Tri-color light
- Air gun + water gun
- Door lock switch
- Lighting lamp
- Full enclosure splash guard
- Telescopic covers (3 axis)
- Standard accessories (refer to packing list)
- Technical documents (refer to packing list)
- Basal installation kit (refer to packing list)
- Sea-worthy package

## **Construction:**

● **BED, COLUMN AND SADDLE:**

The bed is a rigid, one piece casting made from fine grain Meehanite cast iron with heavy ribbing to help prevent vibration and deformation during heavy cutting. Extra wide spacing of the roller guide ways provide for excellent support of the saddle, regardless of the load distribution on the table. The table is fully supported by the saddle in all positions with no overhang. The rigid box type column casting is heavily ribbed to help prevent twisting or distortion as well as helping to dampen vibration during high speed or heavy machining.



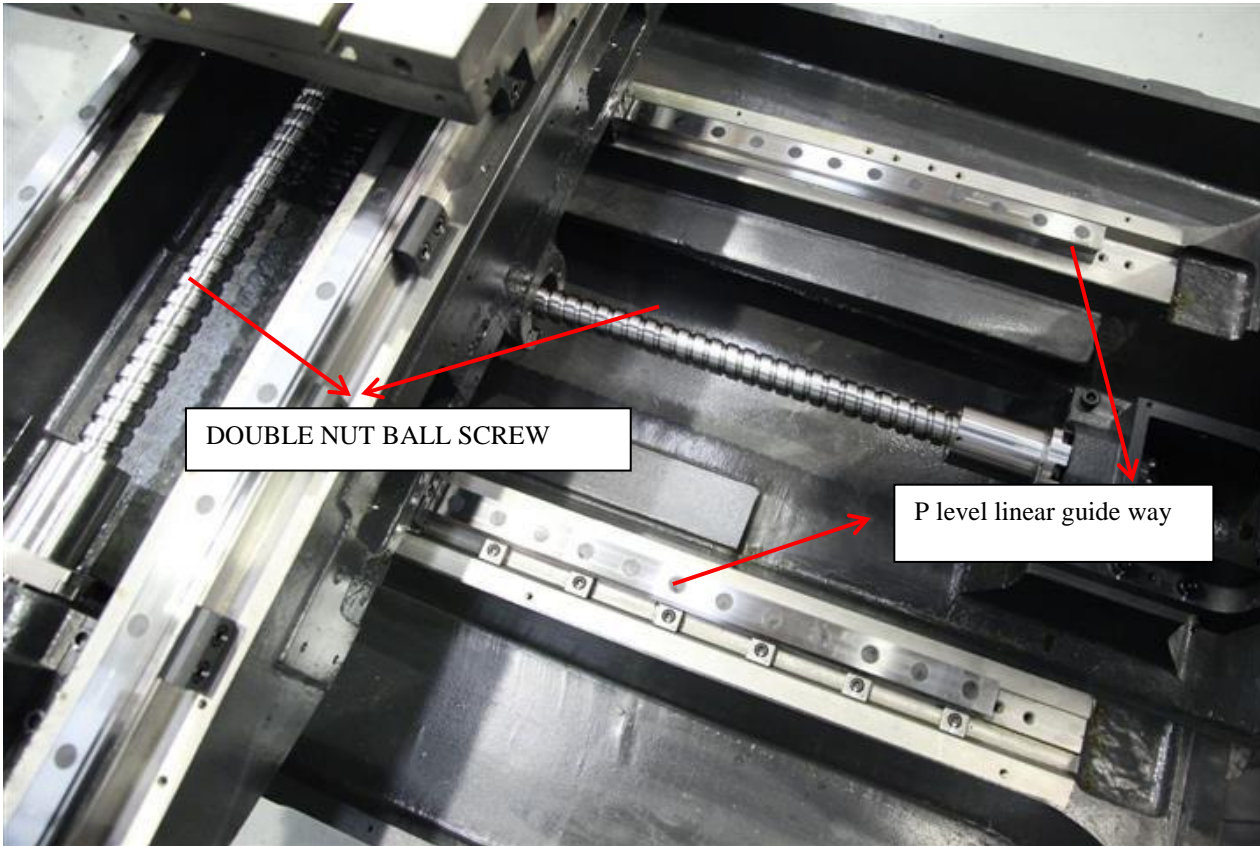
**Inverse-Y column**

it has an Inverse-Y column structure, large rectangular section design, unique internal reinforcement structure, better deflection resistance, torsion resistance, and ultra-high rigidity, all connected with a strong bed to meet the rigidity requirements of strong cutting.

The bed has high rigidity and suitable for heavy-cutting bases. It adopts high-strength gray cast iron with shock-absorbing capacity, and finite element analysis to ensure stability and reliability.

● **BALL SCREW AND GUIDEWAYS:**

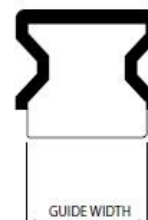
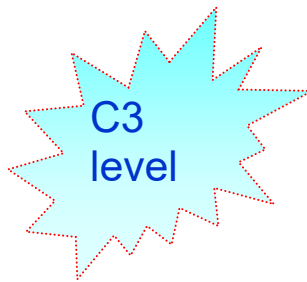
All axes are of Linear Guide type for higher stiffness, accuracy, and surface finish than more common Ball Bearing Guide types. They are both heavy duty (X - 35 mm \ 1.378" Y - 45 mm \ 1.772", Z - 45 mm \ 1.772") and widely spaced (X - 384 mm \ 15.118", Y - 760 mm \ 29.921", Z - 410 mm \ 16.141").



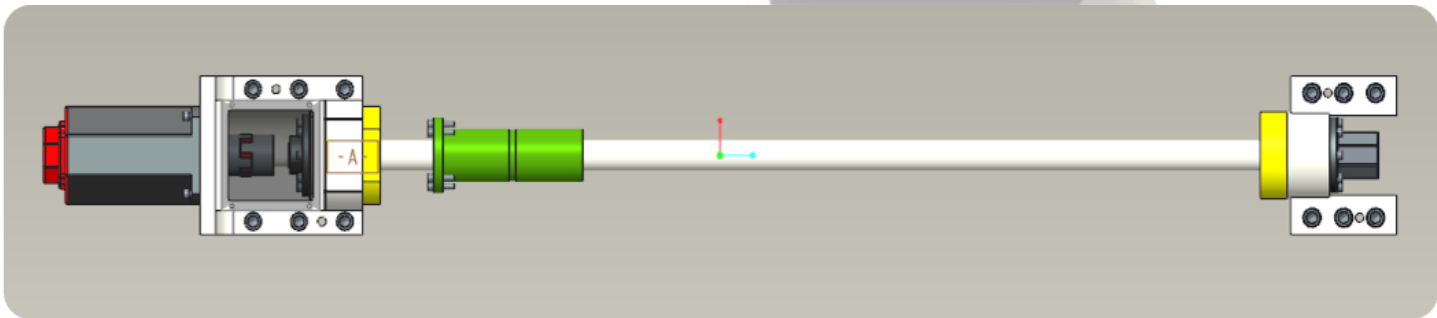
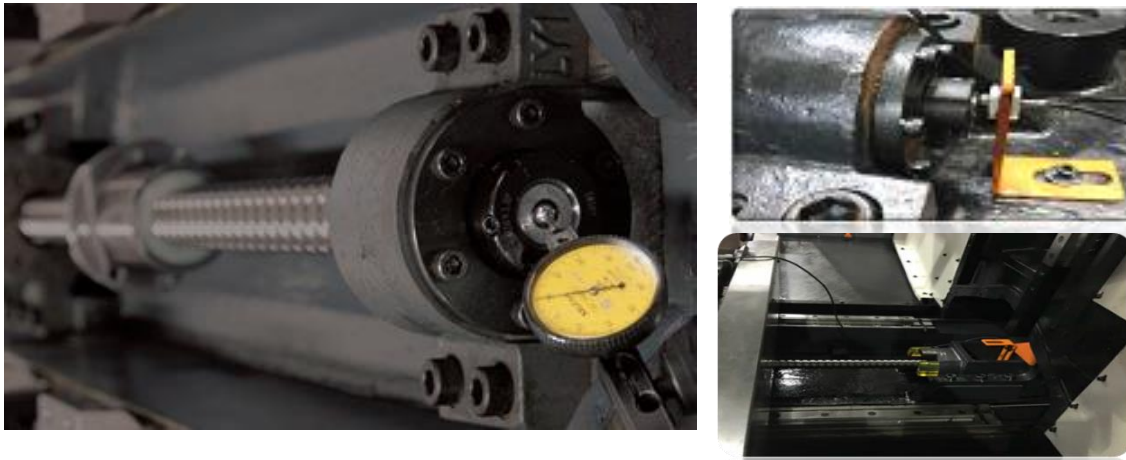
C3 V300=0.008mm



C3 level high speed silence ball screw with heat inhibiting function feature.  
Screw diameter\* pitch:  
40\*16/40\*12/40\*10,  
Double nut ball screw.



The ball screw adopts the pre-load process, which effectively reduces the back lash in the ball screw and helps reduce the heat transfer and friction. This improves the accuracy and strengthens the rigidity and heat deformation resistance.

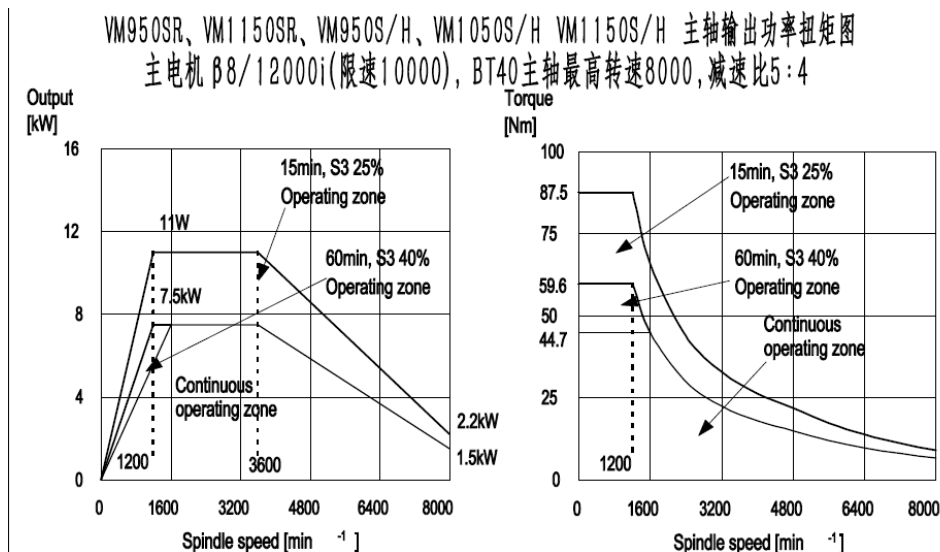


● **SPINDLE and spindle Motor**

The spindle is a true cartridge type unit supported by high precision ceramic ball bearings that offers minimized noise, vibration and thermal growth. The powerful 8000 rpm, 7.5/11Kw .can extend to 15/11KW .

BT40 , belt drive spindle is standard . BT40 10,000 rpm and direct spindle 12000 is possible on the machine.

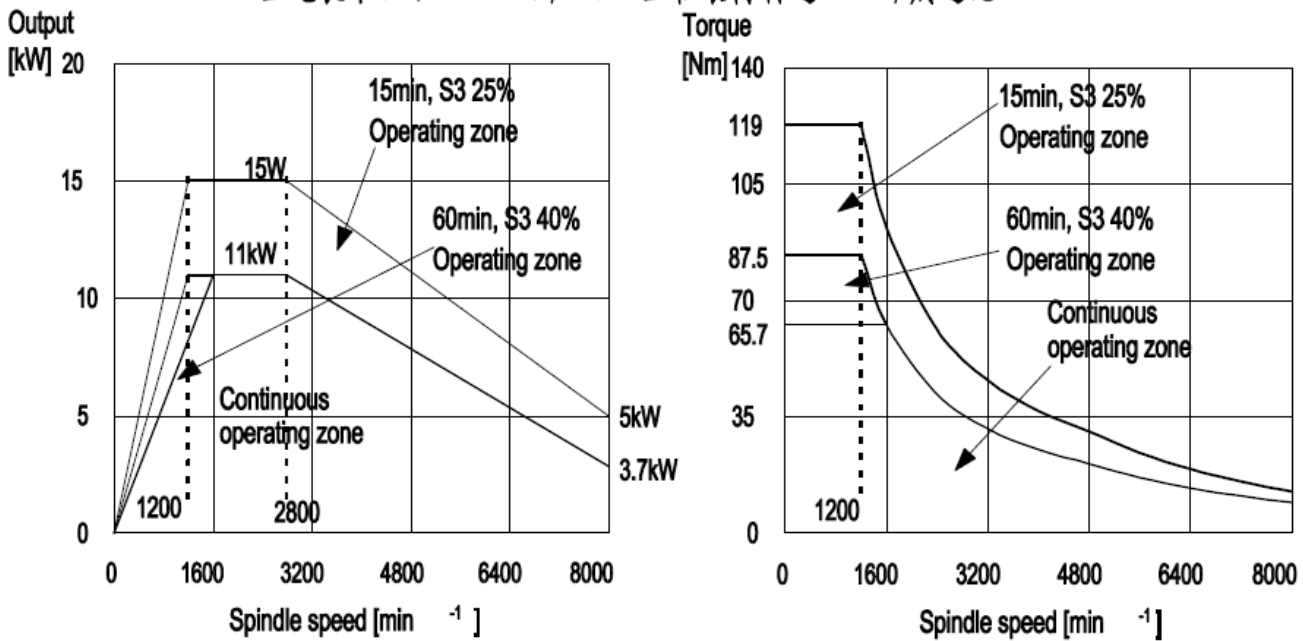
ZF gear box and BT50 spindle are possible also .



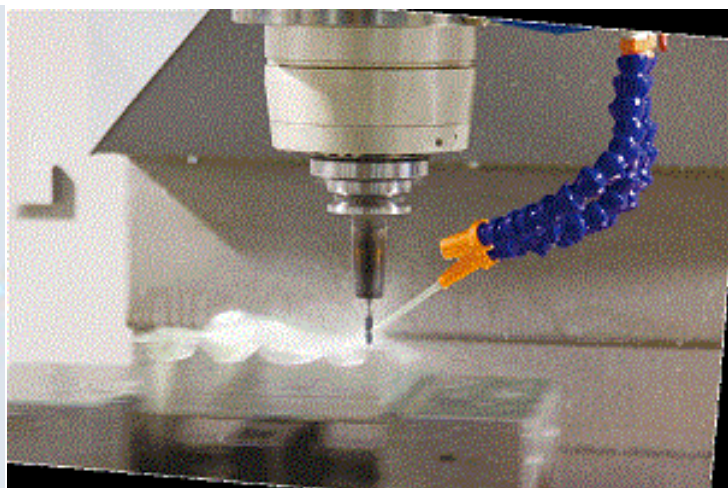
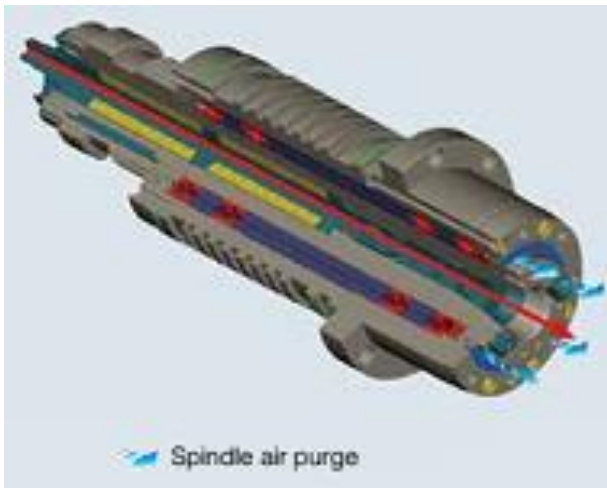


15/11kw spindle motor :

主电机  $\beta 12/10000i$ , BT40主轴最高转速8000, 减速比5:4



- Spindle air blow and air curtain design constantly protect spindle .  
2 coolant tube and 1 air tube are standard on the machine .

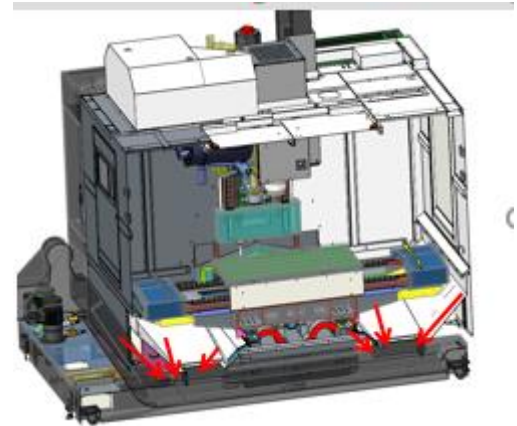


- FULLY ENCLOSED GUARDING:

The fully enclosed guarding is made of heavy gauge sheet metal designed to contain both chips and coolant. The dual, large sliding doors open to 1,260 mm (49") and provide unrestricted overhead access to the table for ease of lifting heavy fixtures or work pieces.

- **CHIP DISPOSAL AND FLOOD COOLANT SYSTEM:**

Automatic chain type conveyor with high pressure water gun to clean chips and reduce machine temperature rising. This System reduce much more heat distortion and increase machine accuracy life.



- **LUBRICATION:**

Automatic oil pump provides lubrication to the guide ways and ball screws which precisely controls the volume of oil to these critical components. A low-level alarm reminds operator before machine stop. The grease type lubrication is an optional, which is thought by some to be more environmentally friendly.



- **TOOL MAGAZINE**



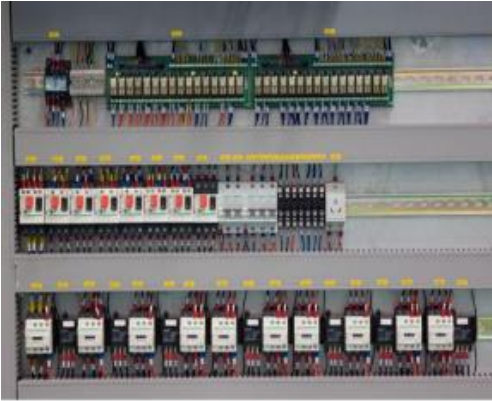
24 tools B140 arm type tools magazine, rigidity to holder heavy tools, cam system to change tools. Stable quality. The machine has undergone thousands of tool change tests before leaving the factory to ensure smooth and reliable tool change. 48 hours trouble free test to guarantee stoppage rate below 0.5%. Manufacturer design 'one panel recover function' to solve 97% tools magazine common problems,

- **Other details**

QUOTE NO.: NWCNC17EXXX MACHINE MODEL: VM1150

Well-organized and easy maintenance of electrical cabinet

Organized pneumatic system and lubrication system, 4<sup>th</sup> axis connection for easy repairing and maintenance.



## OPTIONS DETAILS:

- **Big Plus Spindle System by Big Daishowa LTD:**

The Big Plus spindle system and tooling surpasses all other spindle concepts due to simultaneous taper and flange contact between the machine spindle and tool holder as well as complete interchangeability with existing machines and tools. Upon mounting the tool holder into the machine spindle, contact occurs prior to clamping. Due to the retention force, the taper of the tool holder expands the machine spindle in its elastic range. The tool is pulled further in until the tool flange touches the spindle face for maximum rigidity.



- **20 bar (230 psi) THROUGH SPINDLE COOLANT SYSTEM (TSC):**

A dedicated positive displacement pump delivers the coolant directly to the tool tip. The immediate benefit is more aggressive feeds and speeds can be maintained throughout the cutting process. There is also no need to stop and adjust coolant nozzles which increases both in cut time and operator safety. Protecting the spindle and the vital rotary union from contamination is a Cyclone filter with a 10 micron filter element that does not require the use of bags helping to reduce maintenance cost. The 380 liter (100 gallon) tank stores an ample supply of coolant and is isolated from the machine bed to help prevent heat transfer.

Coolant through spindle is optional on this machine . 20 bar and 30 bar are popular options . high pressure 50 bar and 70 bar are possible also .

- **Renishaw work piece measure devices and Renishaw Tool -setter**



- Linear scales

Rotary table



- Spindle oil cooler (included)

Angle milling head :



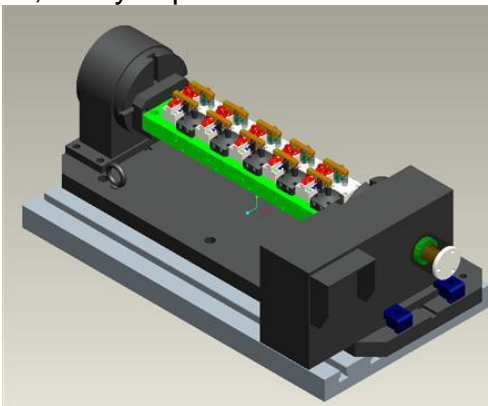
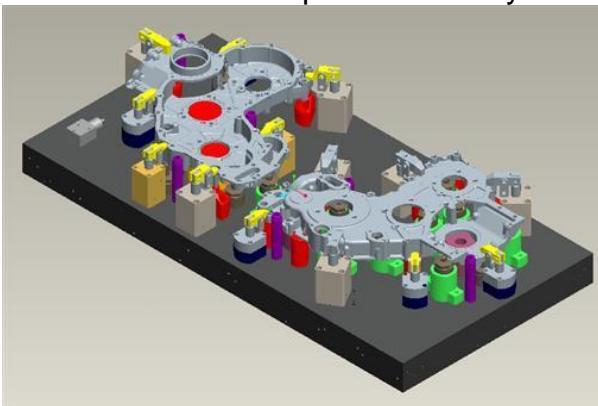
Spindle oil cooler



Angle head

- **SPECIAL FIXTURE DESIGN**

Professional team to provide turnkey solution, many experience on fixture design for different product.



● **SYSTEM CONTROLLER :**

1. FANUC

● Standard ○ Optional X N/A					
No.	Item	Spec.	0I-MF Plus		
			Type 1	Type 5	
1	Controlled axis	Controlled axes	5	5	
2		Additional controlled axes	7	6	
3		Least command increment	0.001 mm / 0.0001"	●	●
4		Least input increment	0.001 mm / 0.0001"	●	●
5		Interpolation type pitch error compensation		●	●
6	Interpolation & Feed Function	2nd reference point return	G30	●	●
7		3rd / 4th reference return		●	●
8		Inverse time feed		●	X
9		Cylindrical interpolation	G07.1	●	○
10		Bell-type acceleration/deceleration before look ahead interpolation		●	●
11		Automatic corner override	G62	●	●
12		Automatic corner deceleration		●	●
13		Manual handle feed	Max. 3unit	●	●
14		Handle interruption		●	●
15		Manual handle retrace		●	●
16		Nano smoothing	AI contour control II is required.	○	X
17		AICC I	40 BLOCK	X	●
18		AICC II	200 BLOCK	●	X
19		AICC II(Preview block number increase)	400 BLOCK(Special hardware and AI contour control II)	○	X
20	Spindle & M code Function	M- code function		●	●
21		Retraction for rigid tapping		●	●
22		Rigid tapping	G84, G74	●	●
23	Tool Function	Number of tool offsets	400	400 ea	400 ea
24		Tool nose radius compensation	G40, G41, G42	●	●
25		Tool length compensation	G43, G44, G49	●	●
26		Tool life management		●	●
27		Tool offset	G45 - G48	●	●
28	Programming &	Custom macro		●	●

29	Editing Function	Macro executor		•	•
30		Extended part program editing		•	•
31		Part program storage	2MB(5120m)	•	•
32		Inch/metric conversion	G20 / G21	•	•
33		Number of Registerable programs	400 ea	400 ea	400 ea
34		Number of Registerable programs	1000 ea	○	○
35		Optional block skip	9 BLOCK	•	○
36		Optional stop	M01	•	•
37		Program file name	32 characters	•	•
38		Sequence number	N 8-digit	N8 digit	N8 digit
39		Playback function		•	•
40		Addition of workpiece coordinate system	G54.1 P1 - 48 (48 pairs)	48 pairs	48 pairs
41		Addition of workpiece coordinate system	G54.1 P1 - 300 (300 pairs)	○	○
42		OTHER FUNCTIONS (Operation, setting & Display, etc)	Embeded Ethernet		•
43	Graphic display		Tool path drawing	•	•
44	Loadmeter display			•	•
45	Memory card interface			•	•
46	USB memory interface		Only Data Read & Write	•	•
47	Operation history display			•	•
48	DNC operation with memory card			•	•
49	Optional angle chamfering / corner R			•	•
50	Run hour and part number display			•	•
51	High speed skip function			•	•
52	Polar coordinate command		G15 / G16	•	•
53	Programmable mirror image		G50.1 / G51.1	•	•
54	Scaling		G50, G51	•	•
55	Single direction positioning		G60	•	•
56	Pattern data input			•	○
57	Jerk control		AI contour control II is required.	○	X
58	Fast Data server with1 GB PCMCIA card			○	○
59	Fast Ethernet			○	○
60	3-dimensional coordinate conversion			○	X
61	Figure copying		G72.1, G72.2	○	○
62	Machining time stamp function			○	○
63	Manual Guide I with 10.4" Color TFT			○	○
64	Dynamic graphic display (with 10.4" screen)			•	•

2. Siemens

● Standard ○ Optional X N/A						
No.	Item	Spec.	S828D			
			SW24x	SW26x	SW28x	
1	Controlled axis	Controlled axes	3 axes	X, Y, Z	X, Y, Z	X, Y, Z
2		Additional controlled axes		5	6+2	8+2
3		Least command increment	0.001mm (0.0001 inch)	●	●	●
4		Least input increment	0.001mm (0.0001 inch)	●	●	●
5		Travel to fixed stop with Force Control		○	○	○
6	Interpolation & Feed Function	Reference point return	G75 FP=1	●	●	●
7		2nd reference point return	G75 FP=2	●	●	●
8		Inverse time feedrate	G93	●	●	●
9		Helical interpolation		●	●	●
10		Polynomial interpolation		X	X	X
11		Spline interpolation (A, B and C splines)		○	○	○
12		Separate path feed for corners and chamfers		●	●	●
13		Acceleration with Jerk limitation		●	●	●
14		Compressor for 3-axis machining		●	●	●
15		Temperature compensation		●	●	●
16		Look Ahead, recorded part program blocks:	Milling with MDynamics Advanced Surface	150	300	450
17				Milling with MDynamics Top Surface	600	600
18		Look Ahead, IPO blocks, buffered:	Milling with MDynamics Advanced Surface	50	100	150
19				Milling with MDynamics Top Surface	200	200
20		Cartesian point-to-point (PTP) travel		●	●	●
21	TRANSMIT/cylinder surface transformation		○	○	○	
22	Spindle Function	Tapping with compensating chuck/rigid tapping		●	●	●
23	Tool Function	Tool radius compensations in plane		●	●	●
24		Number of tools/cutting edges in tool list		128/256	256/512	768/1536
25		Tool length compensation		●	●	●
26		Operation with tool management		○	○	○
27		Tool list		●	●	●
28		Replacement tools for tool management		○	○	○



29		Monitoring of tool life and workpiece count		•	•	•	
30		Manual measurement of tool offset		•	•	•	
31		Magazine list		•	•	•	
32	Programming & Editing Function	Number of levels for skip blocks 2		•	•	•	
33		Number of levels for skip blocks 10		○	○	○	
34		Program/workpiece management	On additional plug-in CF card		•	•	•
35			On USB storage medium (e.g. disk drive, USB stick)		•	•	•
36			On network drive		○	○	○
37		Program editor	Programming support for cycles program(Program Guide)		•	•	•
38			CNC editor with editing functions: select, copy, delete		•	•	•
39			Programming graphics/free contour input (contour calculator)		•	•	•
40			ShopMill Machining step programming		○	○	○
41			Technology cycles for drilling/milling		•	•	•
42			Pocket milling free contour and islands stock removal cycle		○	•	•
43			Residual material detection		○	○	○
44			Access protection for cycles		○	○	○
45			Programming support can be extended, e.g. customer cycles		•	•	•
46			2D simulation		•	•	•
47		3D simulation, finished part		○	○	○	
48	OTHERS FUNCTIONS (Operation, setting & Display, etc)	Switchover: inch/metric		•	•	•	
49		Manual measurement of zero/work offset		•	•	•	
50		Automatic tool/workpiece measurement		•	•	•	
51		Reference point approach, automatic/via CNC program		•	•	•	
52		Execution from USB or CF card interface on operator panel front		•	•	•	
53		Execution from network drive		○	○	○	
54		10.4" color display		•	•	•	
55		15.0" color display		○	○	○	
56		Alarms and messages		•	•	•	
57		Automatic measuring cycles		○	○	○	

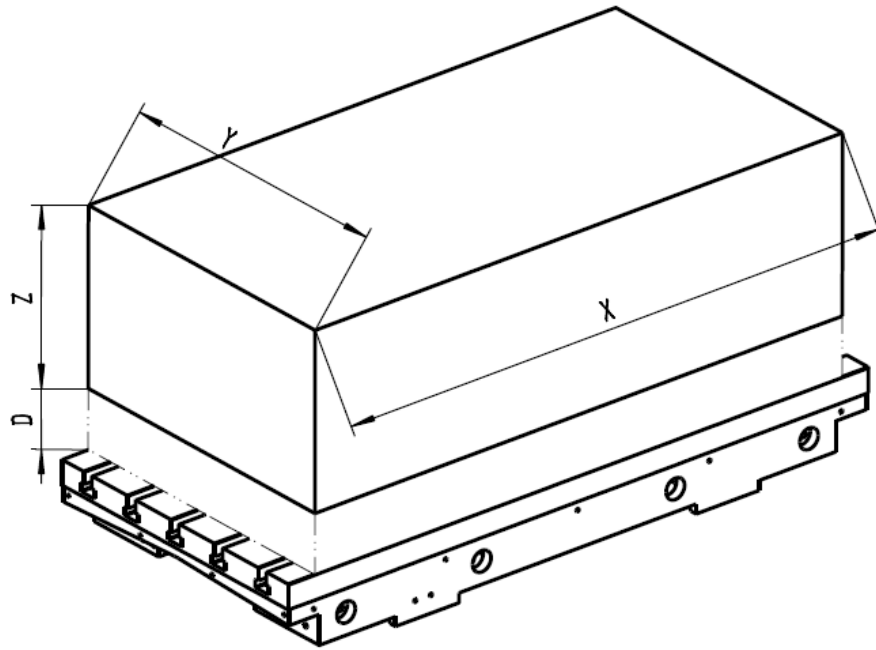
3. Heidenahin

				● Standard ○ Optional X N/A
NO.	Item	Spec.	TNC 620	
1	Axes	Controlled axes	3 axes	X, Y, Z
2		Additional Controlled axes	Max. 5 axes in total	○ (Max. 5axes)
3		Least command increment	0.0001 mm (0.0001 inch), 0.0001°	●
4		Least input increment	0.0001 mm (0.0001 inch), 0.0001°	●
5		MDI / DISPLAY unit	19 "color flat-panel display, vertical, touch screen (for MC 8410)	●
6		Program memory for NC programs		1.8GB
7		CFR CF memory card		8GB
8	Commissioning and diagnostics	Data interfaces	Ethernet interface	●
9			USB interface (USB 2.0)	●
10	Machine functions	Look-ahead (Intelligent path control by calculating the path speed ahead of time)	Max. 5000 blocks.	●
11	User functions	Brief description	Basic version: 3 axes plus spindle	●
12			One or two additional NC axes	○
13			Digital current and spindle speed control	●
14		Program entry	HEIDENHAIN conversational and DIN/ ISO formats	●
15		Position data coordinates	Nominal positions for lines and arcs in Cartesian coordinates or polar coordinates	●
16			Incremental or absolute dimensions	●
17			Display and input in mm or inches	●
18		Tool compensation	Tool radius in the working plane and tool length	●
19			Radius-compensated contour look-ahead for up to 99 blocks (M120)	○
20			Three-dimensional tool-radius compensation for changing tool data without having to recalculate an existing program	○
21			Tool tables	Multiple tool tables with any number of tools
22		Constant contour speed	Relative to the path of the tool center	●
23			Relative to the tool's cutting edge	●
24		Parallel operation	Creating a program with graphical support while another program is being run	●
25		3-D machining	Motion control with minimum jerk	○
26			3-D tool compensation through surface normal vectors	○
27	Keeping the tool normal to the contour		○	
28	Tool radius compensation normal to the tool direction		○	
29	Contour elements	Straight line	●	
30		Chamfer	●	
31		Circular path	●	
32		Circle center point	●	

33		Circle radius	•
34		Tangentially connecting circular arc	•
35		Corner rounding	•
36	Approaching and departing the contour	Via straight line: tangential or perpendicular	•
37		Via circular arc	•
38	Program jumps	Subroutines	•
39		Program section repeats	•
40		Calling any program as subroutine	•
41	Coordinate transformation	Datum shift, rotation, mirror image, scaling factor (axis-specific)	•
42		Tilting the working plane, PLANE function	○
43	Actual position capture	Actual positions can be transferred directly into the NC program	•
44	Programming graphics	In the Programming and Editing mode, the contour of the NC blocks is drawn on screen while the blocks are being entered (2-D pencil-trace graphics), even while another program is running	•
45	Machining time	Calculation of machining time in the Test Run operating mode Display of the current machining time in the Program Run operating modes	•
46	Returning to the contour	Mid-program startup in any block in the program, returning the tool to the calculated nominal position to continue machining	•
47		Program interruption, leaving and returning to the contour	•
48	Preset tables	One preset table for storing reference points	•
49	Datum tables	Several datum tables for storing workpiece-related datums	•
50	Parallel secondary axes	Compensating movement in the secondary axis U, V, W through the principal axis X, Y, Z	•
51		Including movements of parallel axes in the position display of the associated principal axis (sum display)	•
52		Defining the principal and secondary axes in the NC program makes it possible to run programs on different machine configurations	•
53	Conversational languages	English, Chinese (traditional, simplified), Czech, Danish, Dutch, Finnish, French, German, Hungarian, Italian, Polish, Portuguese, Russian (Cyrillic), Spanish, Swedish	•
54	Fixed cycles	Drilling, conventional and rigid tapping, rectangular and circular pockets	•

55		Peck drilling, reaming, boring, counterboring, (centering)		○
56		Milling internal and external threads		○
57		Clearing level and oblique surfaces		○
58		Multioperation machining of straight and circular slots		○
59		Multioperation machining of rectangular and circular pockets		○
60		Linear and circular point patterns		○
61		Contour train, contour pocket—also with contour-parallel machining		○
62		OEM cycles (special cycles developed by the machine tool builder) can be integrated		○
63	Touch probe cycles	Touch probe calibration		○
64		Compensation of workpiece misalignment, manual or automatic		○
65		Datum setting, manual or automatic		○
66		Automatic tool and workpiece measurement		○

**WORK RANGE:**



	D	X	Y	Z
VM1150S	150	1000	520	560

**Packing size**

## Note :

- Price and specifications are subject to change without prior notice.
- Pictures and graphics are representative and may not be from the actual machine
- All specified values are given at standard electric power conditions (380v/50Hz).
- Machine dimension and weight are changed according to optional specification.
- Please refer to lay-out and foundation drawing in relation to installation.
- All specified values of pressure, flow rate of coolant, lubrication and hydraulic pump are given at pump outlet.
- Refer to the separated spec.sheets in relation to specification, function and option on controller.
- Available environment temperature: 10 °C to 40 °C; best environment temperature 15 °C to 25 °C, temperature shall not exceed  $\pm 2$  °C / 24 h. When the environment temperature is 20 °C, humidity should be 40 ~ 75%.
- Coolant recommendation: water-soluble cutting fluid or oily cutting fluid is suitable for the cooling system. Note: the used cutting fluid cannot be dumped at will. It should be disposed to avoid environmental pollution.
- Read the mechanical and electric operation manual, and follow all the safety instructions before using the machine.
- One year control and spare part warranty for standard machine.
- Turn-key is available for all the inquires. Please inquire Neway application department for the turn-key proposal if needed
- For more details, please refer to the machine manual
- This document is for distributors or customer only. Reproduction of the contents inside is illegal and strictly prohibited by law



**NEWAY CNC EQUIPMENT (SUZHOU) CO., LTD**

No.69 Xunyangjiang Road, Suzhou New District, P.R. China.  
Tel: +86-512-6239-2204 Fax: +86-512-6607-1116

[www.newaycnc.com](http://www.newaycnc.com)

**NEWAY CNC (USA). INC**

9757 Stafford Centre drive, Stafford, Texas 774777, USA  
Tel: +1-281-969-5800 Fax: +1-281-969-5903

[www.newaycnc.us](http://www.newaycnc.us)

