SUZHOU GUDWAY CNC EQUIPMENT CO.,LTD

Add：No. 21 Xiexin Road, New District, Suzhou City, Jiangsu Province, China.
Tel：+86-0512-65580060
Email：info@gudwaycnc.com
Web：http://www.gudwaycnc.com

-Vertical Type Turning Lathe

SUZHOU GUDWAY CNC EQUIPMENT CO.,LTD

Mechanical Features

01 Roller guide is adopted for rail rigidity and sensitivity.

02 The bed is enlarged to increase the stability of the machine tool.

03 The angle in the bed is increased for better chip removal.

04 The specifications of turret and spindle are increased for rigidity.

05 The sheet metal is ergonomically designed for unified spot inspection.

06 The interlock of electrical box and safety door complies with CE standards.

07 The electrical box is equipped with air conditioner as standard to better ensure the constant temperature of the controller, keep the controller stable and prolong the electrical service life.

Spindle

GVT400-1000 SERIES

>> 1.The spindle direction decoder and belt can be maintained through the removable cover under the front door or on the side, which is easy to maintain.

2.The spindle specifications are larger than those of the same type of equipment in the market. The original imported bearing is adopted to increase the rigidity and improve the heavy cutting capacity.

>> **Applicable model:** GVT400-1000

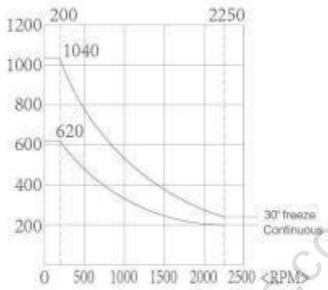
>> **Transmission mode:** belt transmission

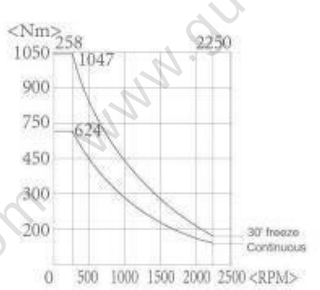
>> **Bearing configuration:**

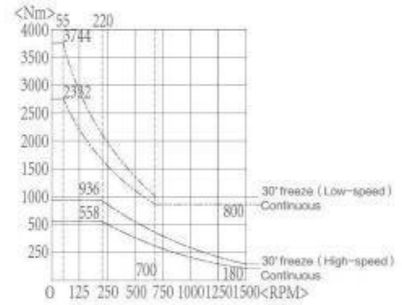
NN cylindrical roller bearing and angular contact thrust bearing are combined at the front end to bear the axial and axial forces generated during machining; NN cylindrical roller bearing configuration is used to bear the belt tension.

>> **Characteristics:**

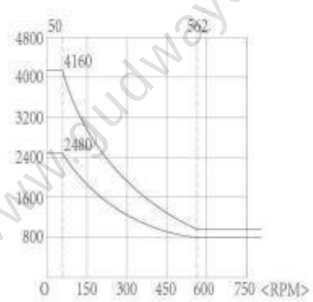
High speed, high precision and high rigidity spindle head adopts NN series bearings, which can bear axial and radial loads Cutting and long-time cutting, the machining accuracy can be maintained.



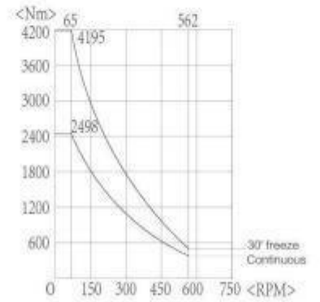




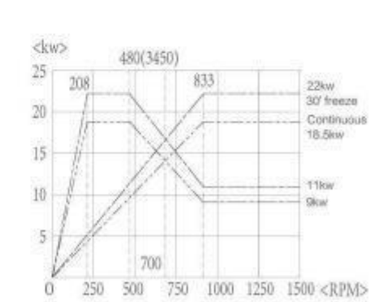
*Variable speed setting 700



*Low gear configuration



*Low gear configuration



*Variable speed setting 700

>> GVT400 GVT600/700 GVT800/1000

Advanced Hardware Technology

small volume, less wiring and high reliability

Compact thin CNC

Integrating the small printed circuit board with CNC function and LCD, the CNC control unit is thinner than before, the depth is only 60mm (*1), so that the operation panel can be designed more compact.

The display product series on CNC are 8.4/10.4 inches, and it is also equipped with 15-in. color LCD for the first time.

(*1: 8.4/10.4 inch LCD without expansion slot)

Basic performance enhancement

It further improves the basic performance of CNC, servo and PMC, supports powerful CNC functions such as workpiece loading and unloading control, smooth tolerance control, and increases the number of controllable axes.

Fewer wiring

Higher speed FSSB and Fanuc I/O link* can save wiring and reduce wiring cost compared with the past.

High-speed FSSB

Optical cable FSSB is used between CNC and amplifier (FANUC serial servo bus) for connection. In addition to the high-speed and anti-noise features based on optical communication, the special communication mode of FANUC is combined with ECC technology to make the communication faster and more stable, realize a high degree of controllability, and save wiring. In addition, it can also be connected with the spindle amplifier through FSSB, which saves wiring compared with the past.

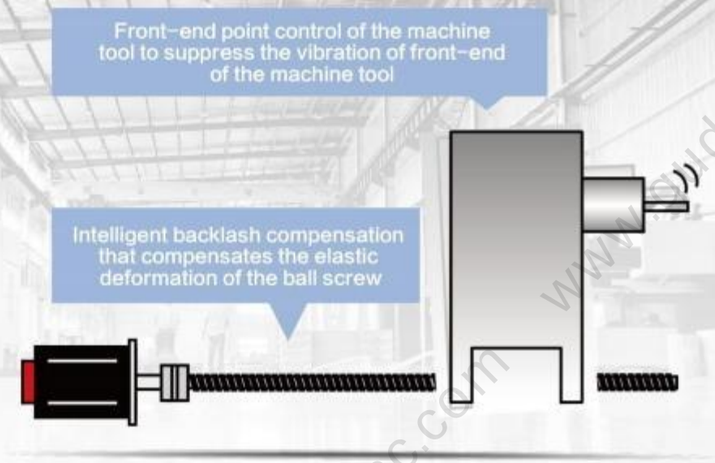
FANUC I/O Link *

Fanuc I/O link* is an I/O network that connects various I/O through serial communication. In addition to general I/O, it can also be connected to the machine tool operation panel to control the operation of peripheral equipment β* servo amplifier, handheld panel for machine tool, etc. Sufficient fault detection functions such as short circuit detection of each bit on DO line and discon-nection detection of serial communication are convenient to quickly determine the fault location and quickly resume operation.

In addition, the double check safety function required two serial communication cables in the past. With FANUC I/O link*, only one cable is enough.

Advanced Digital Servo Technology

servo motor system



Servo HRV control

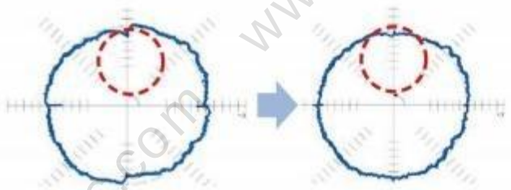
High speed and high precision servo control

By integrating the hardware such as smooth rotation servo motor, high-precision current detection, fast-response and high-resolution pulse encoder with the new servo HRV+, nano high-speed and high-precision machining can be realized. In addition, the mechanical resonance of frequency variation can be avoided by resonance-following HRV filter.

Properly compensate the displacement of the front end of the machine tool and improve the grade of the machined surface

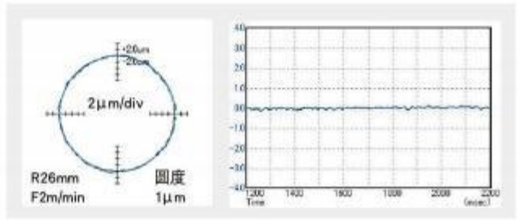
The action of machining points and the quality of machining surface are improved by "intelligent reverse clearance compensation" to properly compensate the loss motion during reverse rotation and "machine tool front end point control" to suppress the vibration of the front end of the machine tool.

[Examples of intelligent reverse clearance compensation]



Previous compensation

Intelligent reverse clearance compensation

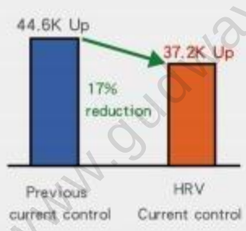


Examples of Servo HRV+

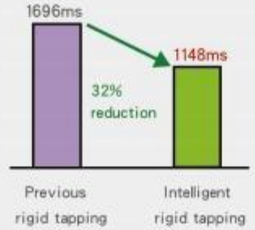
Spindle HRV control

Spindle HRV control can realize high-response and high-precision spindle control with the following characteristics:

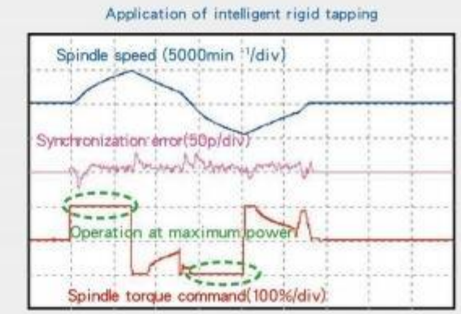
- With high-speed current control, the gain and reduce the heating are improved when the motor rotates at high speed
- It is equipped with the best orientation function to decelerate with excellent acceleration when the inertia of workpiece and tool changes
- Nano interpolation is used in position control to realize the same nano control as the feed shaft on the spindle
- It is equipped with intelligent rigid tapping function, which utilizes the maximum power of spindle motor for acceleration and deceleration, and can realize rapid tapping action without adjustment



Temperature rise of motor winding during continuous acceleration and deceleration (example)



Rigid tapping cycle time shortened (example) pitch 1mm, 25 thread S5000

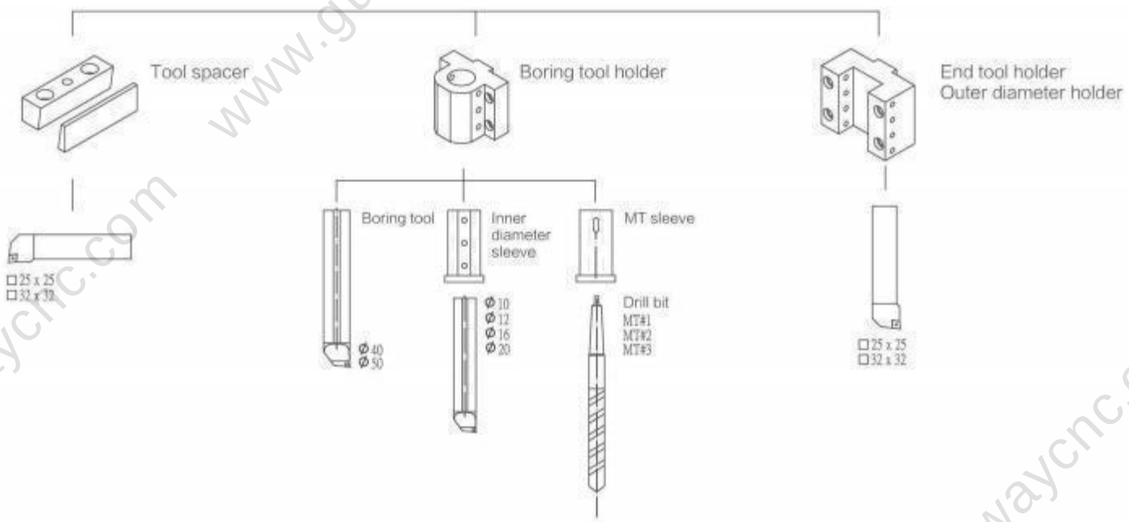


Achieve high synchronization accuracy while accelerating and decelerating at maximum output

Turret Diagram

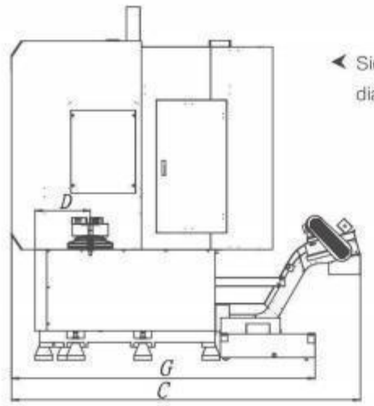
E Series

A Series

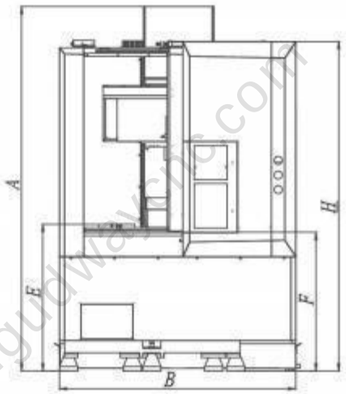


Dimensions

GVT400-1000 SERIES



Side dimension diagram



Front dimension diagram

List of specifications and dimensions

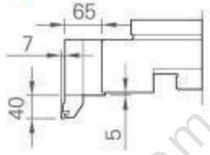
Unit: mm

Model	A	B	C	D	E	F	G	H
GVT400E	2840	1895	3200	470	1100	1050	2600	2500
GVT400Y	2840	1900	3200	470	1100	1050	2600	2500
GVT600A	3200	2025	3290	500	1300	1050	2650	3050
GVT600E	2890	1975	3300	470	1100	1050	2600	2550
GVT600Y	2890	1950	3200	470	1100	1050	2600	2550
GVT700E	3050	2145	3510	540	1110	1050	2850	2750
GVT800A	3610	2580	3850	550	1260	1080	3100	2910
GVT800E	3410	2300	3750	580	1050	1000	2920	2750
GVT1000A	4350	2940	4000	700	1400	1050	3500	3550
GVT1000E	4100	2940	3870	700	1400	1050	3500	3050

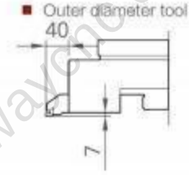
Tooling Interferogram

GVT400-GVT600 SERIES

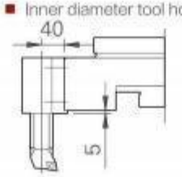
■ End tool holder

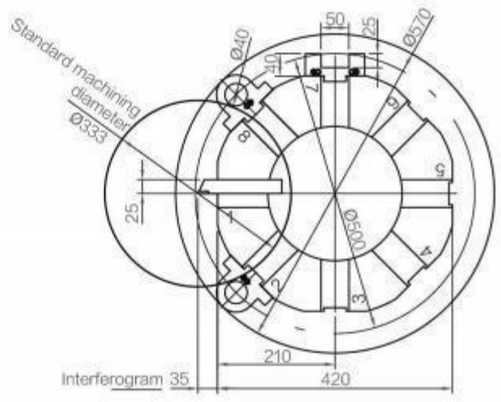


■ Outer diameter tool



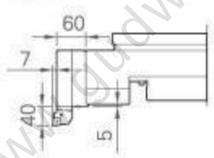
■ Inner diameter tool holder



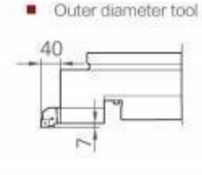


GVT700-GVT1000 SERIES

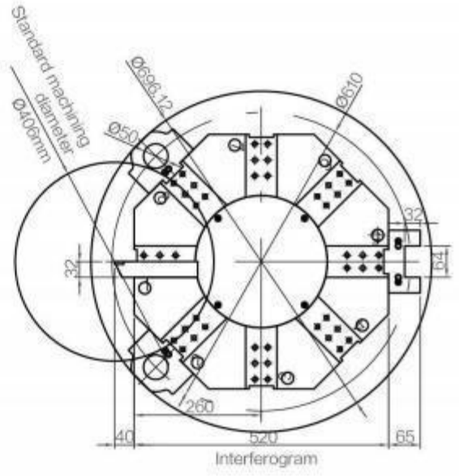
■ End tool holder



■ Outer diameter tool



■ Inner diameter tool holder



GUDWAY

SERIES

GVT400-1000 Series

List of specifications for CNC vertical lathe

Mechanical specifications		Unit	GVT400E	GVT400Y	GVT600A	GVT600E	GVT600Y	GVT700E	GVT800A	GVT800E	GVT1000A	GVT1000E	GVT800ATC	GVT1000ATC
Mechanical capacity														
Maximum swing diameter		mm	Φ700	Φ650	Φ780	Φ850	Φ800	Φ850	Φ950	Φ1000	Φ1250	Φ1250	Φ1000	Φ1250
Machining diameter		mm	Φ550	Φ500	Φ700	Φ680	Φ650	Φ800	Φ950	Φ900	Φ1250	Φ1050	Φ800	Φ1000
Maximum machining height		mm	500	500	600	550	500	650	700	650	1000	750	530	800
Maximum workpiece weight		kg	800	800	1200	1200	1200	1200	1800	1800	1800	1800	1800	1800
Height from turret to chuck		mm	540	540	800	580	580	700	920	700	1200	810	800	1000
STROKE														
X-axis stroke		mm	+280.-20	+280.-20	+440.-30	+340.-20	+340.-20	+450.-50	+600.-40	+450.-50	+700.-40	+550.-50	+550.-40	+650.-40
Z-axis stroke		mm	500	500	550	550	550	650	650	650	850	850	650	850
Y-axis stroke		mm		60			60							
X-axis travel speed		m/min	20	20	20	20	20	20	20	20	20	20	20	20
Beam stroke		mm												
Z-axis travel speed		m/min	20	20	20	20	20	20	20	20	20	20	20	20
Spindle														
Spindle bearing diameter		mm	Φ130	Φ130	Φ160	Φ160	Φ160	Φ160	Φ200	Φ200	Φ200	Φ200	Φ200	Φ200
Spindle nose		mm	A2-8	A2-8	A2-11	A2-11	A2-11	A2-11	A2-11	A2-11	A2-11	A2-11	A2-11	A2-11
Spindle speed	Low gear	min^{-1}	1-562	1-562	1-560	1-560	1-560	1-560	1-833	1-833	1-833	1-833	1-833	1-833
	High gear	min^{-1}	1-2500	1-2500	1-2000	1-2000	1-2000	1-2000	1-1500	1-1500	1-1500	1-1500	1-1500	1-1500
Maximum torque of spindle	Low gear	N.m(kgf-m)	4160	4160	4160	4160	4160	4160	3744	3744	3744	3744	3744	3744
	High gear	N.m(kgf-m)	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
Turret														
Turret type			E	E+Y	A	E	E+Y	E	A	E	A	E	ATC	ATC
Number of tools		pcs	8	8	4/6	8	8	8/12	4/6	8/12	4/6	8/12	12	12
Tool size		mm	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50	□ 32Φ50
Motor														
Spindle motor		kw	18.5/22	18.5/22	18.5/22	18.5/22	18.5/22	18.5/22	18.5/22	18.5/22	18.5/22	18.5/22	18.5/22	18.5/22
X-axis servo motor		kw	3	3	3	3	3	3	3	3	4	4	3	4
Z-axis servo motor		kw	7	7	7	7	7	7	7	7	7	7	7	7
Hydraulic motor		kw	2.2KW	2.2KW	2.2KW	2.2KW	2.2KW	2.2KW*2	2.2KW*2	2.2KW*2	2.2KW*2	2.2KW*2	2.2KW*2	2.2KW*2
Motor for coolant pump		kw	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2	1.5KW*2
Electromechanical series														
Controller			Oi-T	Oi-T	Oi-T	Oi-T	Oi-T	Oi-T	Oi-T	Oi-T	Oi-T	Oi-T	Oi-T	Oi-T
Power requirement		kvA	40	40	40	40	40	40	40	40	40	40	40	40
Capacity														
Hydraulic tank		L	40	40	40	40	40	50	50	50	50	50	50	50
Coolant tank		L	160	160	200	200	200	280	320	320	400	400	320	400
Lubrication tank		L	2	2	2	2	2	2	2	2	2	2	2	2
Machine dimensions														
Floor area (L*W)		mm	3200*1895	3200*1900	3290*2025	3300*1975	3200*1950	3510*2145	3850*2580	3750*2300	4000*2940	3870*2940	3850*2580	4000*2940
Machine height		mm	2950	3000	3200	3000	3000	3450	3660	3700	4400	4140	3660	4400
Machine weight		kg	7200	7350	8200	8000	8500	10000	12000	13500	16000	16500	15500	17000

GUDWAY

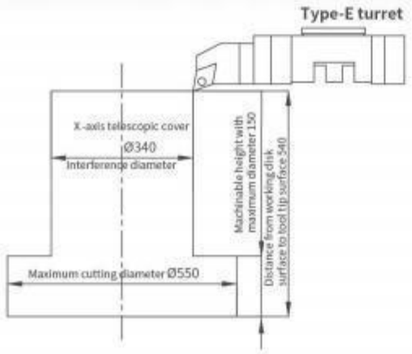
SERIES

GVT400-1000 Series

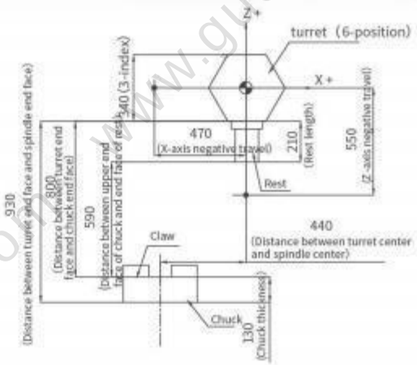
Standard / optional configuration

Mechanical specifications	GVT400E	GVT400Y	GVT600A	GVT600E	GVT600Y	GVT700E	GVT800A	GVT800E	GVT1000A	GVT1000E	GVT800ATC	GVT1000ATC
Standard configuration												
Full cover sheet	●	●	●	●	●	●	●	●	●	●	●	●
Chip conveyor	●	●	●	●	●	●	●	●	●	●	●	●
Coolant tank	●	●	●	●	●	●	●	●	●	●	●	●
Coolant through holders	●	●	●	●	●	●	●	●	●	●	●	●
Automatic lubrication system for whole machine	●	●	●	●	●	●	●	●	●	●	●	●
Forced lubrication system for gearbox	●	●	●	●	●	●	●	●	●	●	●	●
Electric box with air conditioner	●	●	●	●	●	●	●	●	●	●	●	●
Hydraulic system (air-cooled fan) unit	●	●	●	●	●	●	●	●	●	●	●	●
Work light	●	●	●	●	●	●	●	●	●	●	●	●
Signal tower (R/Y/G)	●	●	●	●	●	●	●	●	●	●	●	●
Door safety protection	●	●	●	●	●	●	●	●	●	●	●	●
Standard tools and toolbox	●	●	●	●	●	●	●	●	●	●	●	●
Foundation kits	●	●	●	●	●	●	●	●	●	●	●	●
CNC controller: FANUC 0i-t (10.4" LCD), standard function	●	●	●	●	●	●	●	●	●	●	●	●
Spindle motor	●	●	●	●	●	●	●	●	●	●	●	●
X/Z-axis absolute position detection	●	●	●	●	●	●	●	●	●	●	●	●
Roller guide	●	●	●	●	●	●	●	●	●	●	●	●
Maintenance manual (Fanuc)	●	●	●	●	●	●	●	●	●	●	●	●
Accuracy checklist	●	●	●	●	●	●	●	●	●	●	●	●
Operating instructions (Chinese version)	●	●	●	●	●	●	●	●	●	●	●	●
Hydraulical and electrical circuit diagram (Chinese version)	●	●	●	●	●	●	●	●	●	●	●	●
Power transformer	●	●	●	●	●	●	●	●	●	●	●	●
Optional configurations												
Siemens controller SINUMERIK 828D	O	O	O	O	O	O	O	O	O	O	O	O
Automatic door	O	O	O	O	O	O	O	O	O	O	O	O
Mist collector	O	O	O	O	O	O	O	O	O	O	O	O
Tool measurement	O	O	O	O	O	O	O	O	O	O	O	O
ZF two-stage gearbox	O	O	O	O	O	O	O	O	●	●	O	●
Oil skimmer (disc)	O	O	O	O	O	O	O	O	O	O	O	O
Automatic measurement of workpiece	O	O	O	O	O	O	O	O	O	O	O	O
High-pressure coolant	O	O	O	O	O	O	O	O	O	O	O	O
Automatic power-off device	O	O	O	O	O	O	O	O	O	O	O	O
Workpiece trial machining	O	O	O	O	O	O	O	O	O	O	O	O
X-axis scale feedback	O	O	O	O	O	O	O	O	O	O	O	O
Z-axis scale feedback	O	O	O	O	O	O	O	O	O	O	O	O
Grinding device (including grinding wheel trimming)	O	O	O	O	O	O	O	O	O	O	O	O
Coolant gun	O	O	O	O	O	O	O	O	O	O	O	O

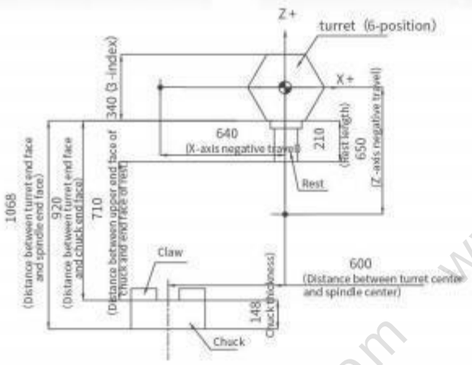
Diagram Of Processing Range



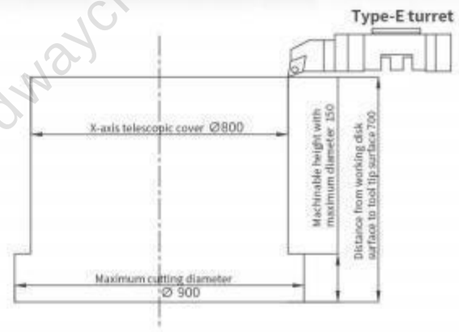
GVT400 TYPE-E



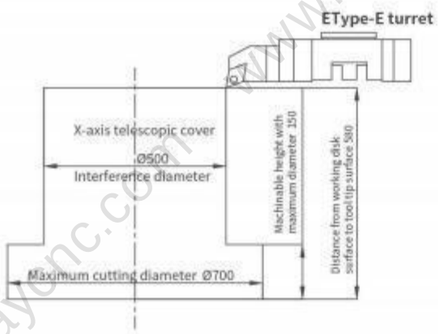
GVT600 TYPE-A



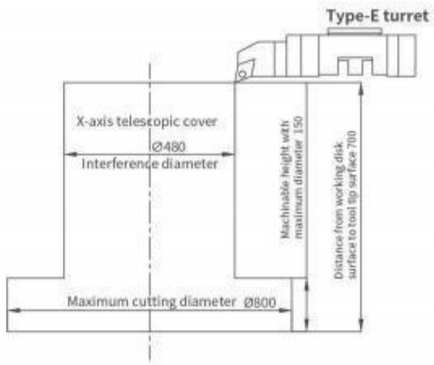
GVT800 TYPE-A



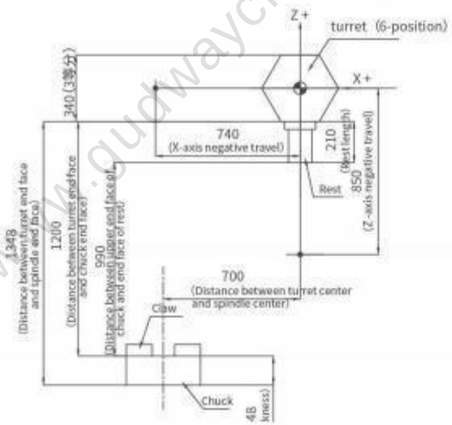
GVT800 YTPE-E



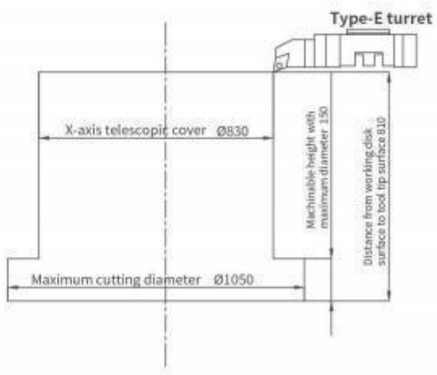
GVT600 TYPE-E



GVT700 TYPE-E



GVT100 TYPE-A



GVT1000 TYPE-E