

GHT SERIES

Box way type Turning lathe 245/M- 305/M/L/LM



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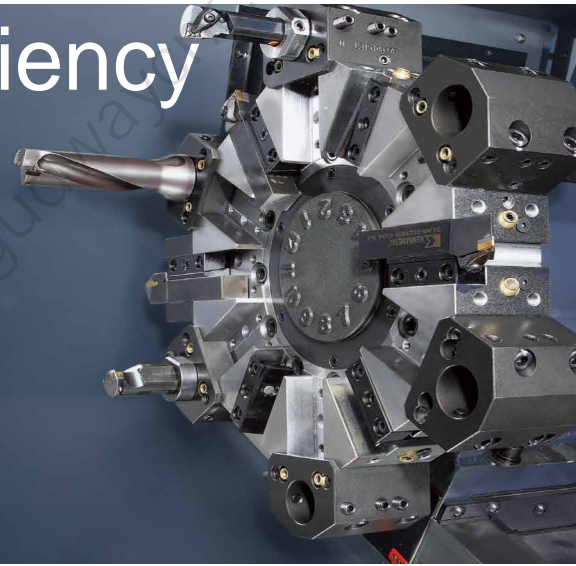
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High rigidity, high efficiency

The structural components of hard rail high-rigidity bed are optimized by finite element analysis (FEA), which not only meets the requirements of high rigidity and high precision machining, but also has obvious effect on vibration absorption and resonance reduction.

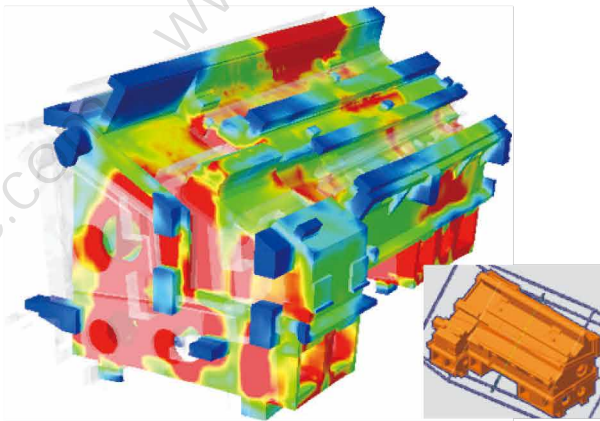
With optimized spindle and feed structure, processing performance and efficiency are improved.



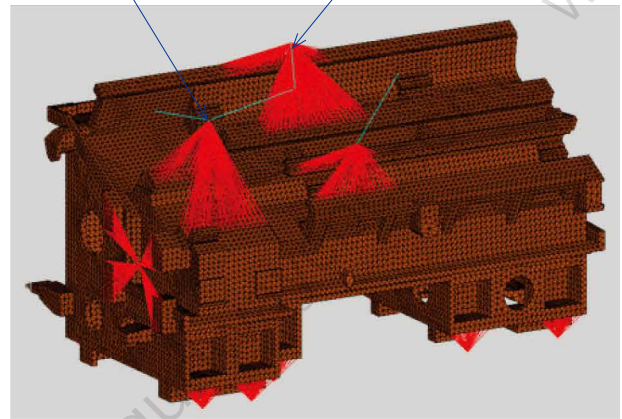
GHT 245/305 SERIES

1 High rigidity, low vibration bed

The optimized design of the bed casting structure using computer 3D simulation analysis (FEA) reduces vibration during cutting, improves the cutting stability and prolongs the service life of the tool.



Center of gravity of spindle Center of gravity of guiderail



Solid reinforcement and hard rail structure, so that the rigidity of the bed is improved. By analyzing the distribution of the center of gravity of the spindle and the guide rail, the distance between the cutting point and the guide rail is optimized to reduce the vibration in the cutting process.



Max. spindle speed ▶ GHT245/M **3500** r/min
 GHT3050L/M/LM **3000** r/min

Fast moving speed ▶ X-axis **24** m/min
 Z-axis **30** m/min

2 High torque, low inertia spindle

The optimized compact spindle structure design reduces the rotating inertia load, enhances the rigidity and torque of the spindle, reduces the acceleration/deceleration time of the spindle, and improves its easy maintenance.

Motor power

▶ **18.5 / 15** kW (30 min/continuous)

Spindle torque

▶ **201.8** N·m (GHT245/245M)

401.2 N·m (GHT305/305M/305L)



3 High efficiency, low fault feed structure

The optimized feed device layout and low center of gravity feed device design can maintain a smooth feed state during the acceleration/deceleration process of cutting.

The tool tower driven by an efficient servo motor achieves strong machining capability and stable tool changing performance under high speed operation.

FAST MOVE

▶ X-AXIS 16 m/min **24** m/min

▶ Z-AXIS 20 m/min **30** m/min



Efficient servo motor driven cutter tower

High performance, high stability

The servo drive tool tower improves performance and optimizes structural components, making it easier for equipment maintenance. To meet the needs of customers for high-performance, high-stability machine tools.

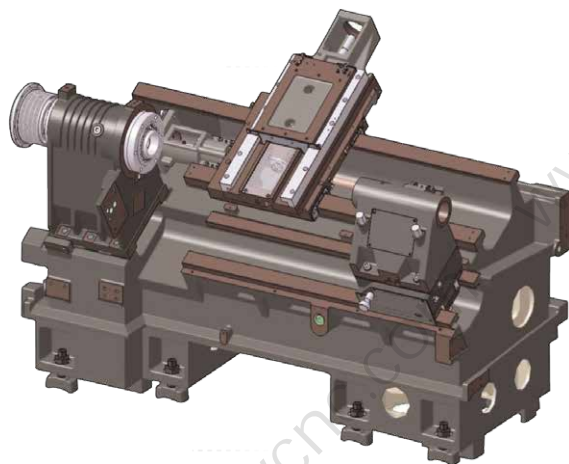
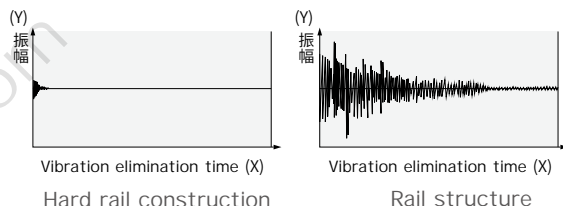


GHT 245/305 SERIES

4 High stability of the hard rail

Hard rail structure

The GHT 245/305 series with hard rail structure continues the high rigidity and high performance characteristics of hard rail products. Compared with the wire rail structure, the vibration elimination effect of the hard rail structure in the control process is obvious (as shown in the figure below).



5 High reliability tower

With the servo motor drive, the drive system and the number of parts of the servo cutter tower have been optimized and improved.

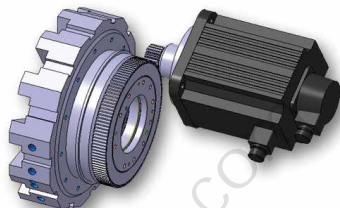
While reducing the failure rate, the maintenance is more convenient, and the stability and reliability of the machine tool are improved.

Fixed clamping force

▶ **53 kN**

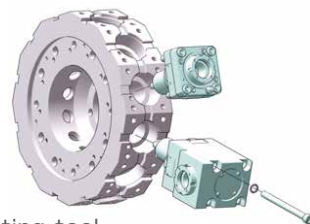
Coupling size

▶ **∅203 mm**



BMT cutter tower for milling (GHT245M/305M)

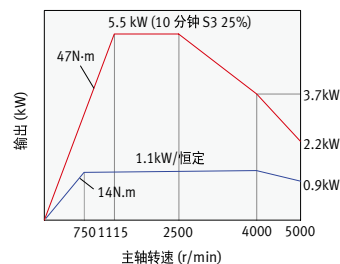
The BTM55P holds the tool firmly to the turret, providing powerful machining performance with an efficient, rigid and high-precision internal drive system. Stable performance is maintained even in milling processes that require tool extension.



The maximum speed of the rotating tool
5000 r/min

The maximum output power of the rotating tool
5.5 kW

The maximum torque of the rotating tool
47 N·m





Power milling cutter head (GHT245M/305M)

Max. speed ▶ **5000** r/min

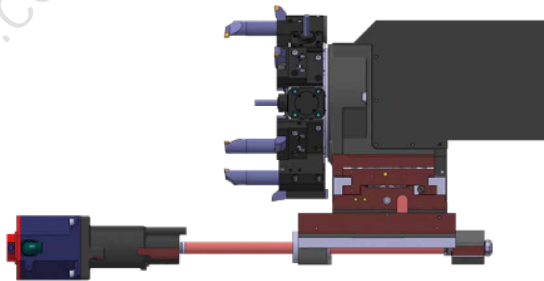
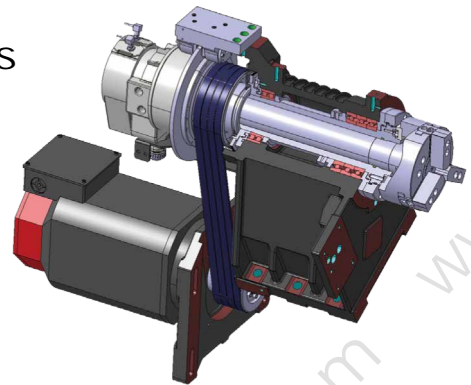
Max. power ▶ **5.5** kW

Max. torque ▶ **47** N·m

6 Improved performance and parameters

Spindle

The optimized spindle suspension design reduces the rotating inertia load, improves rigidity, and reduces the acceleration/deceleration time. In addition, the front bearings (high-speed, high-precision radial thrust ball bearings) reduce the heat generated during spindle operation, providing stable spindle drive even when working at high speeds for long periods of time.



Feed device

The design concept of low center of gravity and low inertia is used to provide the feed stability of the feed device. The feed shaft is driven by a large-diameter, high-precision ball screw supported by high-precision bearings. The use of double-anchored rapid prestressing system can reduce the thermal expansion in the process of high speed and strong cutting.

The use of large diameter lead screws makes the processing more stable

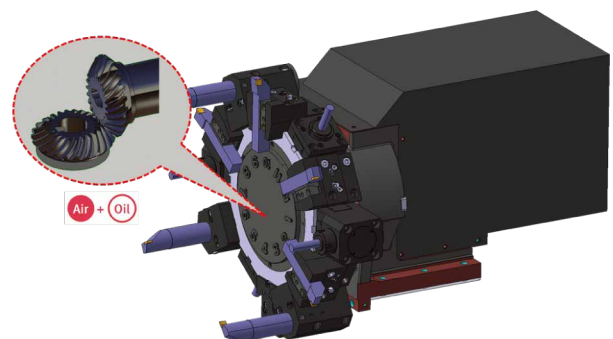
▶ X axis: **ø32** mm

Z axis: GHT245— **ø32** mm

GHT305— **ø40** mm

Tool rest

The tool holder, driven by an efficient servo motor, improves reliability while reducing the number of parts. Using a tool drive that optimizes the number of parts, it is cooled by gas and coolant, so very little heat is generated. Bevel gears can significantly reduce the noise generated in the process of high-speed and long-term milling operations, and the production efficiency and accuracy are improved.



CONVENIENCE

The compact and optimized structure design enables the machine to create high production efficiency in a small space

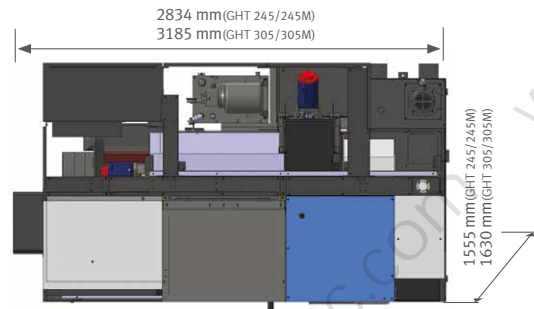
The use of ergonomics and modular, integrated design improves the ease of operation and the maintainability of the machine

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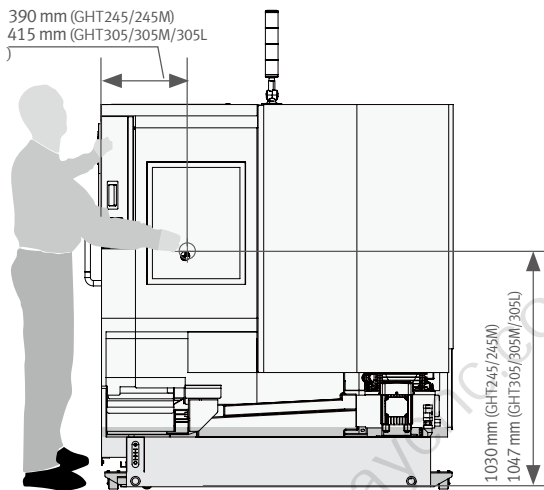
Improved machine footprint and accessibility

Floor area

▶ **4.4 m²** ↓ **15%** (GHT245/245M)
 ▶ **5.2 m²** ↓ **9%** (GHT305/305M)



* Note: GHT305L(extended) covers an area of 6.1m² (3735mm long x1630mm wide)



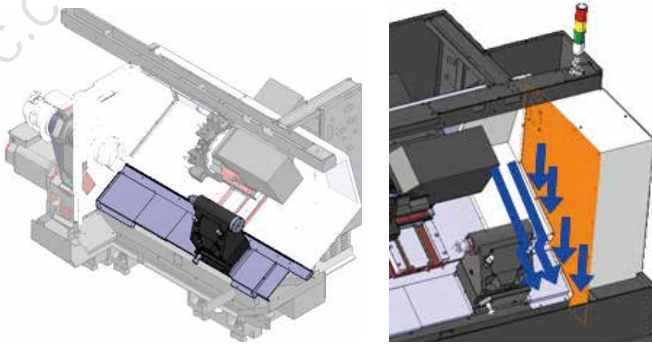
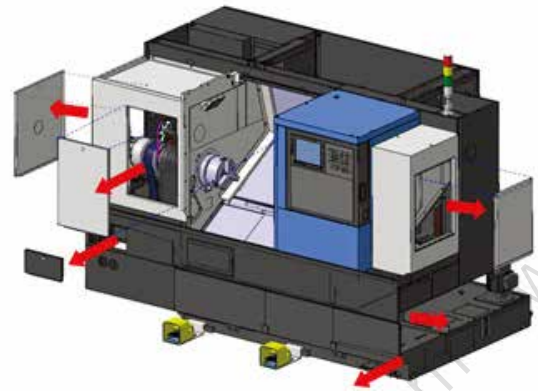
Accessibility

The distance between the operator and the chuck center and the tool holder is optimized to facilitate the operation and maintenance of the operator.

8 Easy maintenance and chip removal construction

Easy to maintain

The integrated design of the machine tool protective cover makes it easy to disassemble and maintain.

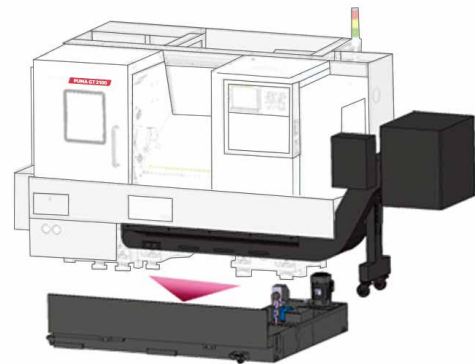


Sliding guard

The use of the shield prevents the heat of the chips from being transferred to the bed and the guide rail. Protect the bed and guide rail, and make the chip cleaning more convenient.

Coolant tank is easy to clean

The coolant tank (cutting fluid tank) can be easily moved without the need to move the chip tray and chip extractor for easy cleaning by the user.



Environmental friendly

We advocate the energy saving and environmental protection of machine tools through the use of low energy consumption equipment and increase power saving functions and other aspects of the effort, so that customers improve the use of efficiency, reduce operating costs and protect the environment.

GHT 245/305 series

9 Low energy consumption and environmental protection design

Hydraulic components



Oil skimmer

The new skimmer can fully improve the performance of oil /water separation and extend the life of the coolant. The chip pollution generated in the process of processing is reduced and the working environment is improved.



10 Energy saving and environmental protection

LED working light and condition light

LED working light



LED Condition lamp



Work light turn on



Work light goes off automatically



Auto power off

After 10 minutes of no operation on the operation panel, the working light will be automatically turned off.

Automatic off function

After 10 minutes of no operation on the operation panel, the spindle, servo motor, chip remover motor, and coolant tank motor will automatically shut down, saving energy and protecting the equipment.

Coolant tank motor stops and turns off



The spindle and servo motor stop and turn

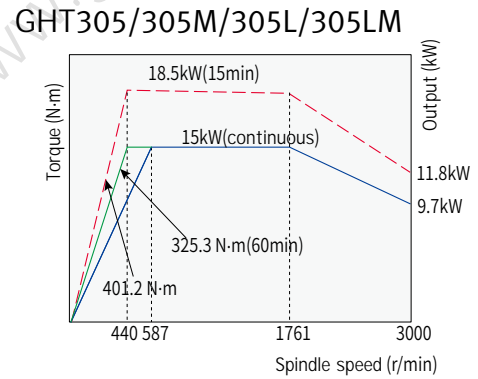
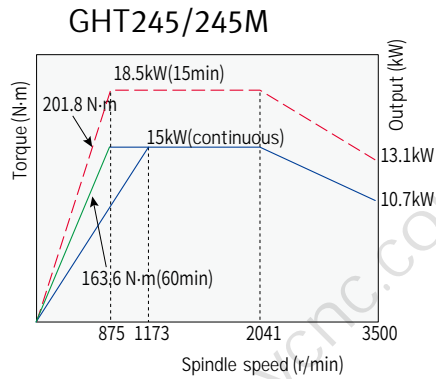


The motor of the chip remover stops and turns off



Machine performance

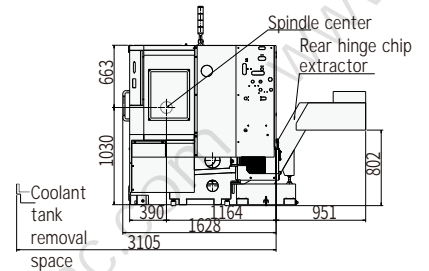
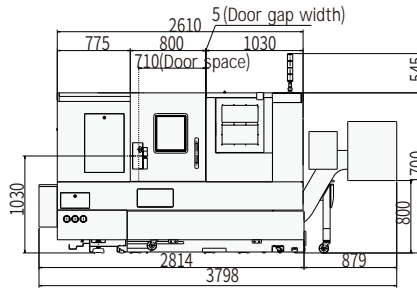
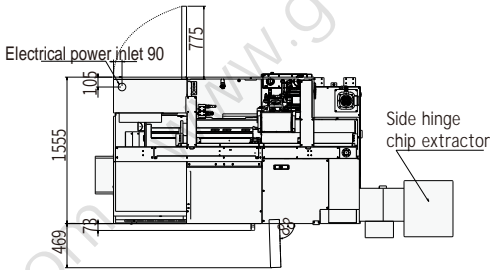
Spindle power-torque diagram



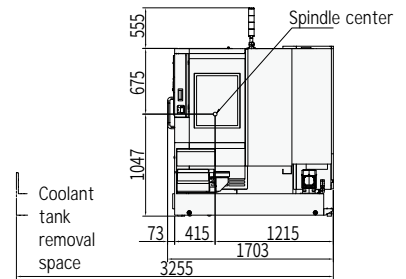
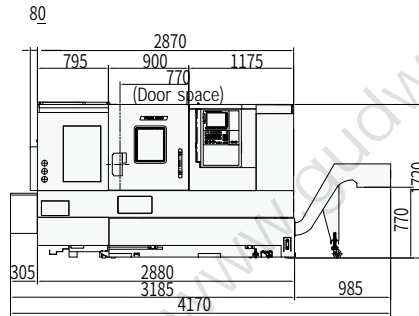
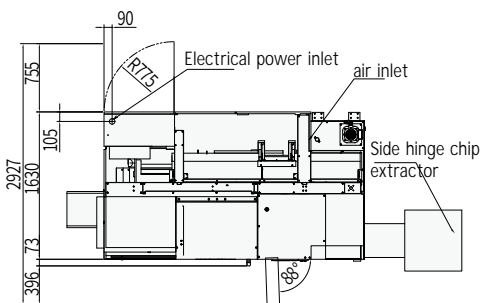
Machine size

GHT245/245M

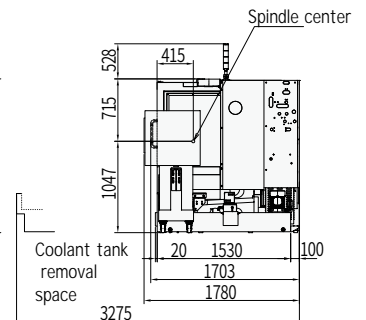
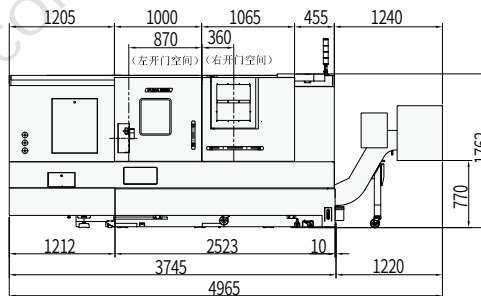
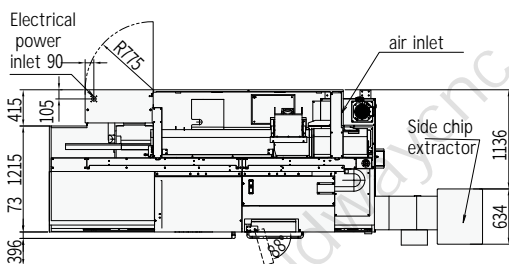
UNIT:mm



GHT305/305M



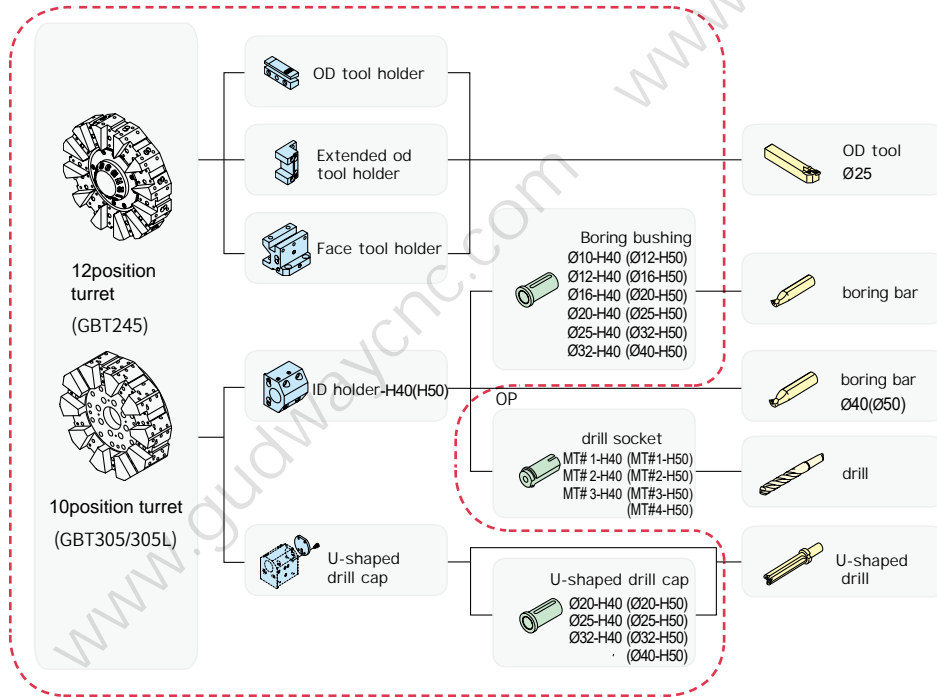
GHT305L/305LM



TOOL

GHT 245/305/305L

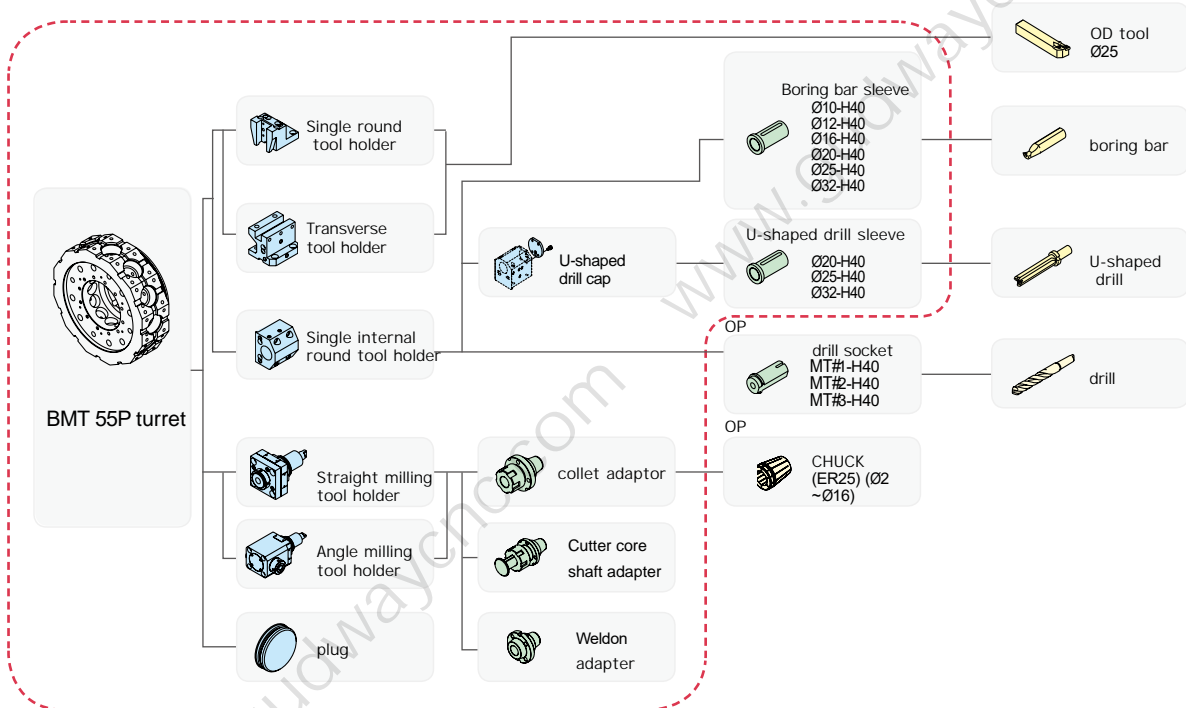
UNIT:mm



NOTE: () -GHT305/305L

GHT 245M/305M/305LM

UNIT:mm

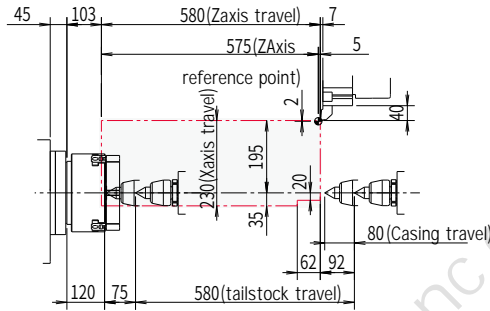


Work range

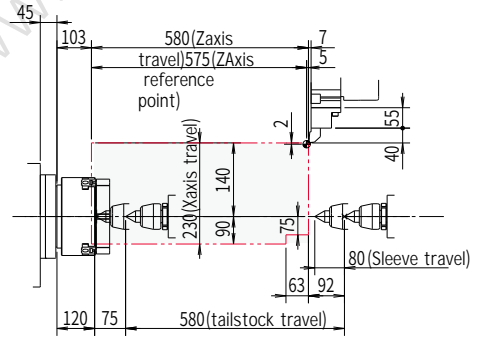
GHT245

UNIT:
mm

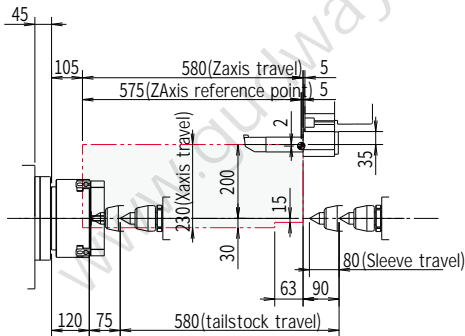
OD TOOL HOLDER



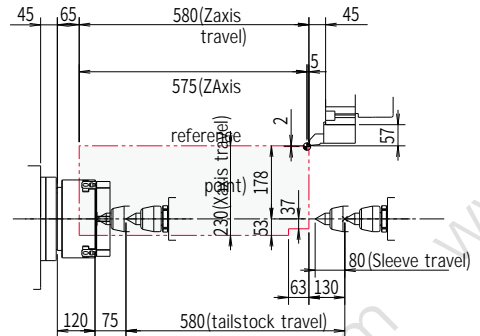
EXTENDED OD HOLDER



ID holder



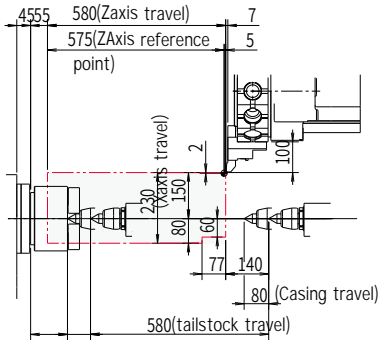
Face holder



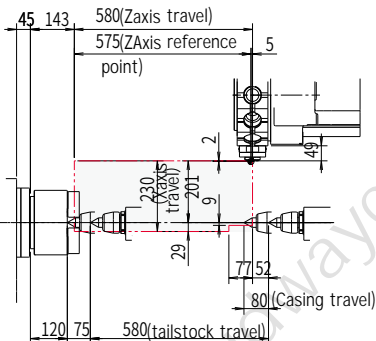
GHT245M

UNIT:mm

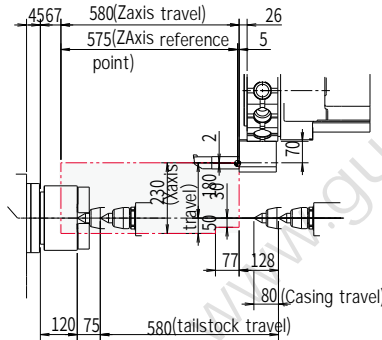
OD HOLDER



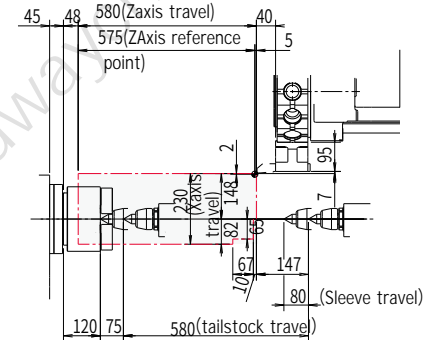
120 75 Straight milling holder



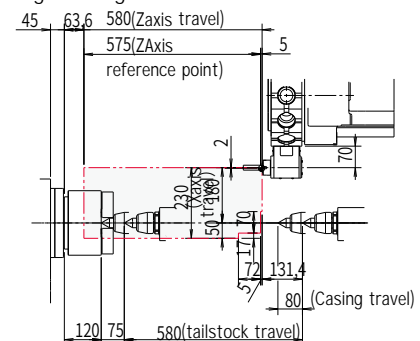
ID holder



Face holder



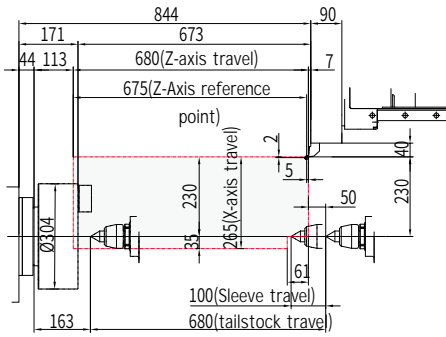
Angle milling holder



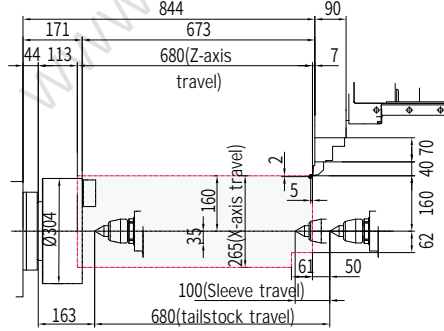
GHT305

UNIT:mm

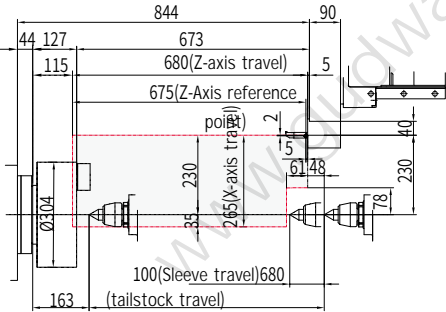
OD HOLDER



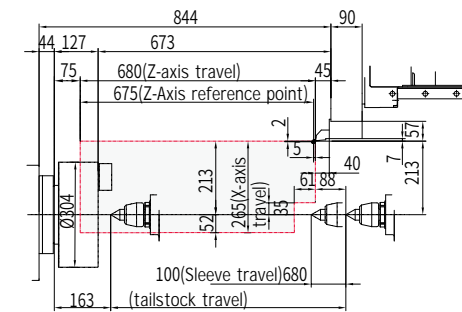
EXTENDED OD HOLDER



ID holder



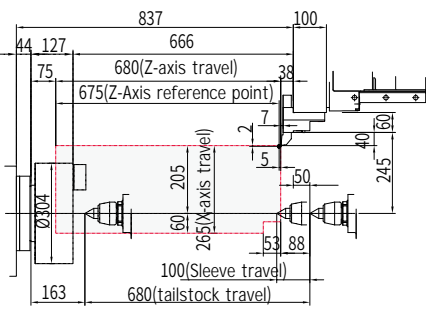
Face holder



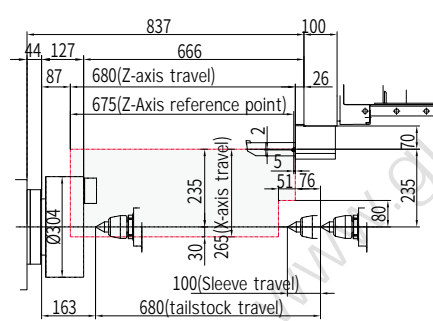
GHT305M

UNIT:mm

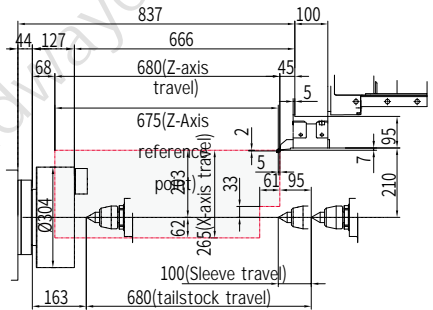
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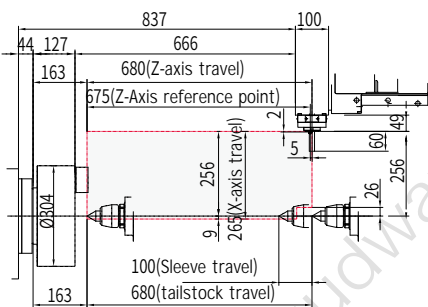
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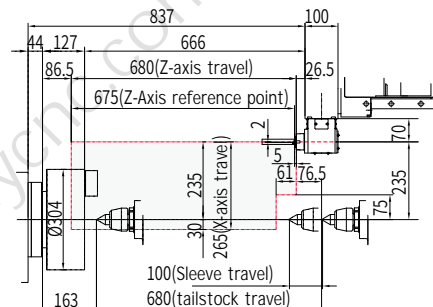
Face holder



Straight milling holder



Angle milling holder

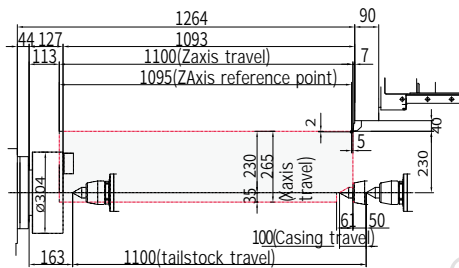


WORK RANGE

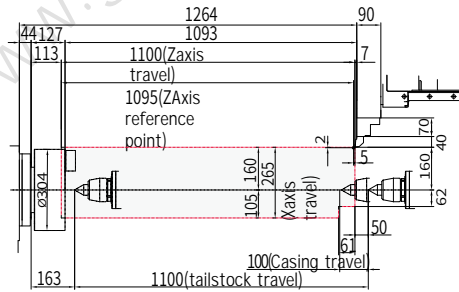
GHT305L

UNIT:mm

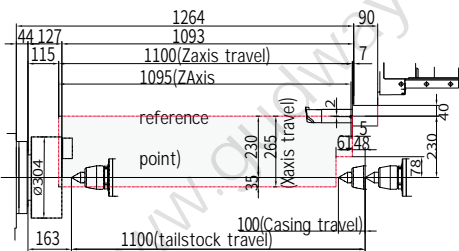
OD HOLDER



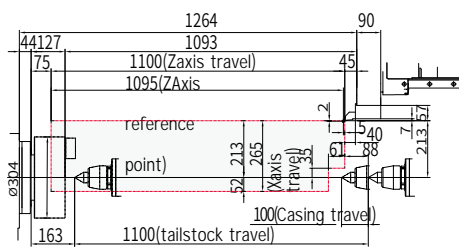
EXTENDED OD HOLDER



ID holder



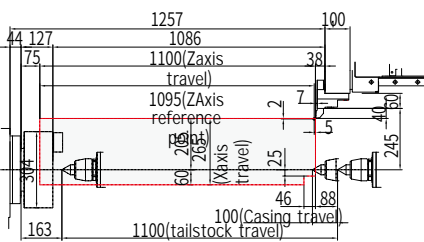
Face holder



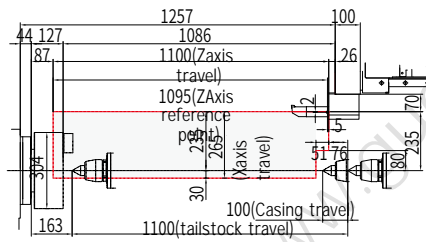
GHT305LM

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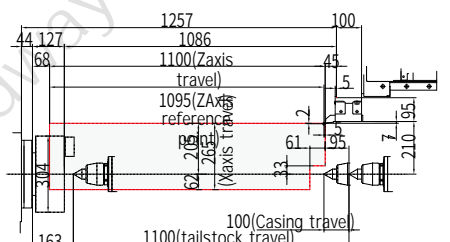
OD HOLDER



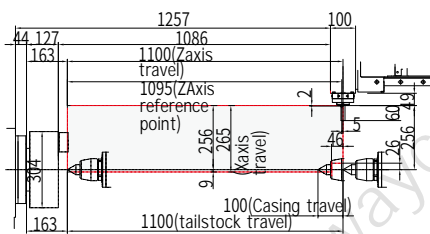
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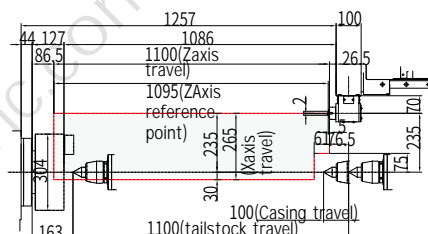
Face holder



Straight milling holder

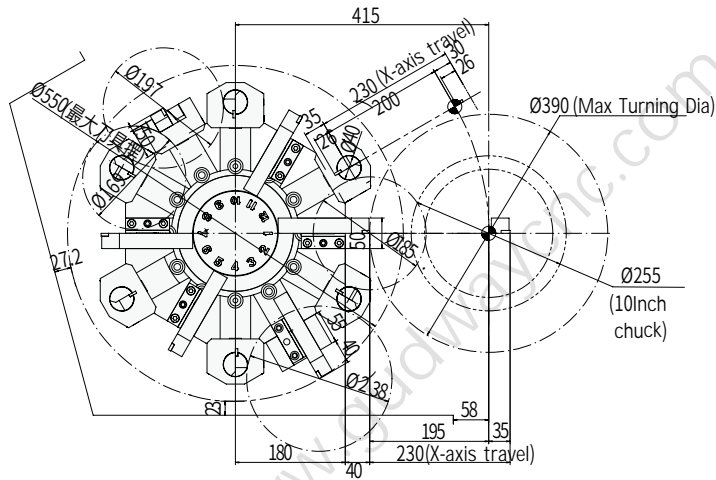


Angle milling holder



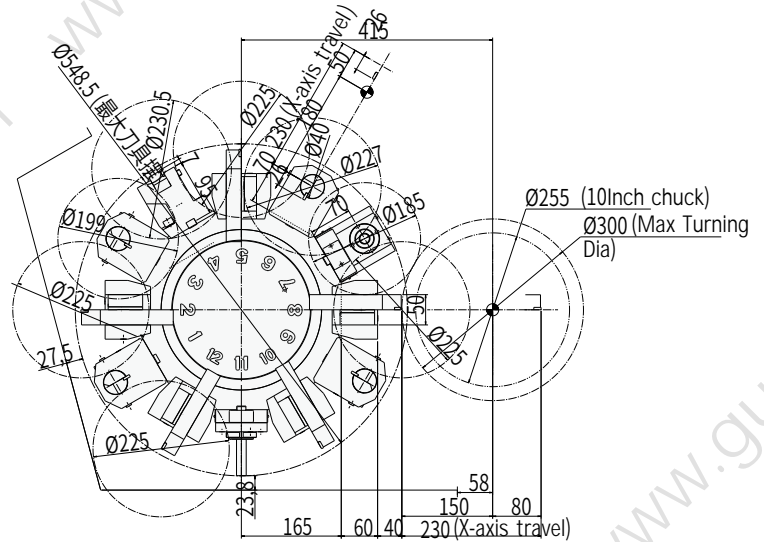
Tool interferogram

GHT245

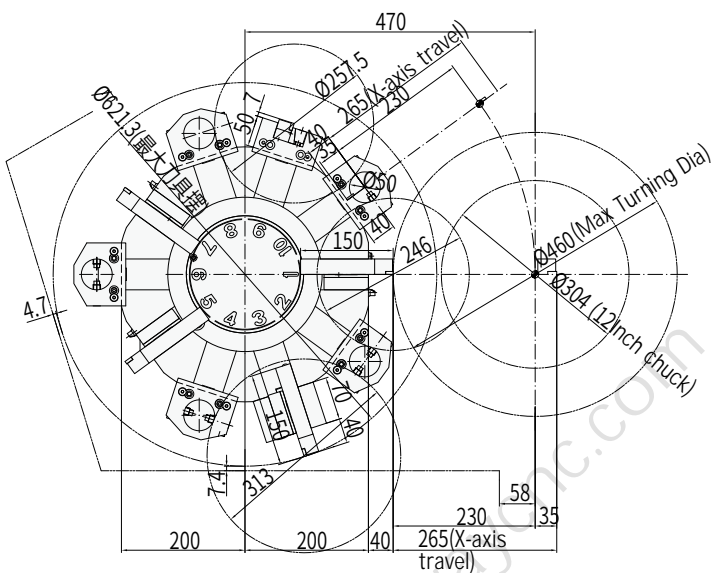


GHT245M

UNIT:mm

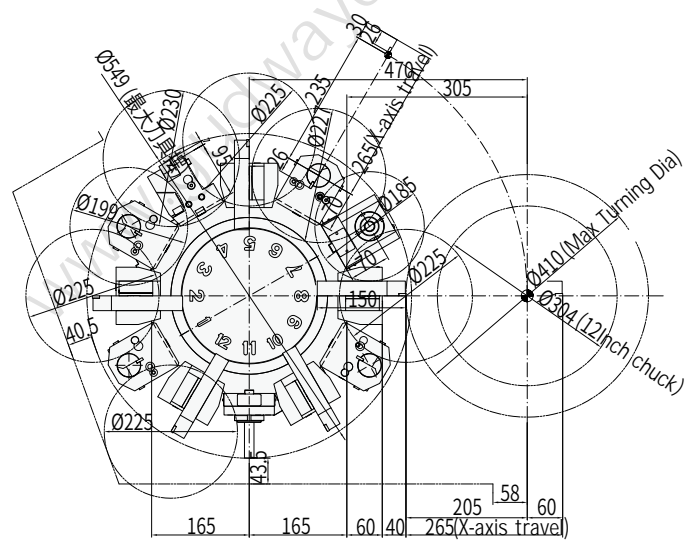


GHT305/305L



GHT305M/305LM

UNIT:mm



PARAMETERS

ITEM		UNIT	GHT 245	GHT 245M	GHT 305	GHT 305M	GHT 305L	GHT 305LM	
Machining ability	Machine bed Max Turning Dia	mm	Ø600		Ø630				
	Saddle Max Turning Dia	mm	Ø390		Ø460				
	Recommended turning diameter	mm	Ø255		Ø305				
	Max. turning dia	mm	Ø390	Ø300	Ø460	Ø410	Ø460	Ø410	
	Max turning length	mm	541	493	638	590	1058	1022	
	Bar machining diameter	mm	65		76				
Spindle	Max spindle speed	r/min	3500		3000				
	Spindle nose	ASA	A2#6		A2#8				
	Spindle bearing dia(front/rear)	mm	Ø110 / Ø100		Ø140 / Ø130				
	Spindle through hole diameter	mm	Ø76		Ø91				
	Min spindle indexing Angle (C-axis)	°		0.001	-	0.001	-	0.001	
Axial feed	Axis travel	X-axis	mm		230		265		265(60+205)
		Z-axis	mm		580		680		1100
		C-axis	°		-	360		-	360
	Fast feed	X-axis	m/min		24		24		
		Z-axis	m/min		30		30		
	C-axis	r/min		-	200		-	200	
Turret	Tool number	st	12	12(BMT55P)	10	12(BMT55P)	10	12	
	Cylindrical tool dimensions	mm	25x25		25x25				
	Boring bar diameter	mm	40		50	40	50	40	
	Transposition time	s	0.15		0.15				
	Rotary tool spindle speed	r/min	-	5000		-	5000	-	5000
Tail stock	Sleeve diameter	mm	Ø80		Ø100				
	Sleeve taper		MT#4		MT#5				
	Sleeve travel	mm	80		100				
	Maximum center thrust	kN	7.8		11				
Motor	Spindle motor power (30min/continuous)	kW	18.5/15		18.5/15				
	Servo motor (absolute)	X-axis	kW		1.8		1.8		
		Z-axis	kW		3.0		3.0		
	Rotary tool spindle motor power	kW	-	5.5		-	5.5	5.5	
Power	Power supply (rated capacity)	kVA	26.57	27.95	26.57	27.95	26.57	27.95	
Size	Height	mm	1700		1720				
	Floor area	Length	mm		2834		3185		3735
		Width	mm		1628		1630		
	Weight	kg	3500	3600	4300	4350	4900	4950	

STANDARD

Hydraulic chuck&Rotary cylinder	Work light
Soft clamp	Condition light (yellow, red, green)
Chuck clamp detection switch	Foot switch
Live tip	Front door interlock
Standard tool holder	Safety warning nameplate
Hydraulic power unit	Leveling bolts & pad iron
Cutting fluid supply equipment	Stochastic toolbox
Lubricating oil equipment	Machine instructions and manuals
Iron filings and cooling safety sheet metal	

OPTIONAL

Chip remover & truck	Auto door
Coolant pump	Automatic tail seat
Hard clasp	Dead center for tail seat
Automatic power off	Center frame (hydraulic type)
Air gun	Special chuck
Water gun	Feeder
Oil skimmer	Oil mist collector
Additional holder&bush	Automatic tool setting gauge
Clamp clean blowing	- GHT245/245M(Manual or hydraulic)
Clamp clean blowing	- GHT305/305M/305L/305LM (Manual or electric)

SPECIFICATION

Fanuc i Plus Series

Shaft control	Coordinate offset
Control path 1 path	User macros
Number of control axes 2 axes	Decimal point input/Calculator decimal point input
Control axis number 2 axis at the same time	Diameter/radius specified
Control shaft removal	Coordinate offset direct input
Reverse gap compensation	G code class B/C
Reverse gap compensation for each quick feed and cut feed	Any Angle chamfer/corner R
Chamfer start/stop	10 times input UNIT
Advanced feedforward control	Mark Skip
Location tracking	Manual absolute value ON/OFF
Servo HRV controls HRV2	Maximum command value Earth 9 digits
Imperial/metric conversion	Composite fixed cycle
Interlock all axes/all axes	Composite fixed cycle II
Minimum input increment 0.001/0.0001mm/inch	Select program segment skip 9 pieces
Minimum setting UNITC ISXC	Parity check
Mechanically lock all shafts/individual shafts	Plane select G17 G18 G19
Mirror image	Program file name 04 digits
Exceedances	Programmable data input G10
Servo off	Number N8 digits
Storage Trip Detection 1	Subroutine instruction calls 10 layers nested
Number constant load check source	Paper tape code EIA RS422/S0840
Emergency Stop	FANUC 10/11 System paper tape format
Position switch	Workpiece coordinate system G52-G59
Controls	Job coordinate system preset
Automatic running (memory)	User software capacity 6 M
MDI run	Macro actuator
Buffer register	Tool function/tool compensation
DNC Run	Automatic tool compensation
DNC running with a memory card requires a CF card and a dedicated adapter	Tool compensation value measurements are entered directly into B T2+2 digits
Scheduling function	Tool function
Empty Run	Tool shape/wear compensation
Increment feed X1 X10 X100	Tool life Management
Handwheel feed interruption	Tool radius compensation G43,G44,G49
JOG feed	Tool position offset 128 pairs
Manual intervention and return	Number of tool compensation
Hand wheel feed	Tool life management extension
Return to reference point manually	Program editing
Program number retrieval	Background editing
Program restart	Extension editing
Sequence number search	Number of login programs 1000ea
Interpolation function	Program editing
Return to Second Manual, G28	Program Protection
Return to second reference point G30	Program storage capacity 2 M
Return to reference points 3 and 4	Set and Display
Nanointerpolating	Showing the actual speed
The exact way to stop	Display alarm information
Tapping method	Show alarm resume
Cutting mode	Display current position
Stop exactly	Display the floppy directory
Arc interpolation G02 G03	Display the actual spindle rotation number /T code
Continuous thread cutting	Book HTLTB
Polygon Machining	Display in languages by country
Cylindrical interpolation	Show operation resume
Pause	Show parameter Settings
High Speed Skip	Show program comment 32.31 characters
Line interpolation G01	Show working time/number of parts
Multiple thread cutting	Self-diagnostic function
Location G00	Servo info screen
Return to reference point to detect G27	Main Axis speech
Thread cutting/synchronous feed	Graphic display cutting path display
Thread cutting cycle recovery	Status display
Torque Limit skip	Clock feature
Variable pitch thread cutting	Parameter checksum function
Feed function	Data input/output
Automatic acceleration/deceleration	External data entry
Cutting feed speed box system	External key input
Feed G98 per minute	External program number retrieves 1 to 9999
Each go to G99	External job number retrieve 9999
Feed speed multiplier (10%UNIT) 0-200%	Input/output of memory card
LOG multiplier (10%UNIT) 0-2.000 mm/min	Reader/puncher interface CH1. Interface
Manual feed per turn	RS232C interface
Multiplier cancel	USB port
Fast feed multiplier F0.50,100%	Automatic data backup
Fast feed speed	Other
Fast feed bell type plus or minus speed	Start running and indicator light
Auxiliary/spindle speed function	Display unit 10.4" color LCD/MDI
Spindle positioning	Feed held and indicator light on
Actual spindle speed output	NC and servo preparation
Hold on to your neck	PMC System QI-PMC
Constant weekly speed control	Ethernet features
Accessibility M 8-bit number	EOP(Easy operation screen)
Spindle function S.5 digit number	Select specifications
Spindle serial output S5 digits	- Data server
Spindle magnification 0-150%	- Hand wheel feed back
Spindle output switch	- Dynamic graphics display
Rigid tapping	- Operating guide I
Program input	- Operation Guide 0i
Absolute/incremental instruction	- Tool load monitoring
Append user macros public variables	-CF card (2GB)
Fixed loop for drilling	-PROFIBUS-DP
Single shape fixed cycle	-AI profile control machine maximum number of preared segments 40
Arc radius R specified	-PROFINET
Control input/output	-CC-LINK
Coordinate set G50	-AI profile control II Maximum number of preared segments 200
	- Fast Ethernet

GHT245/305



ITEM	UNIT	GHT245	GHT305
Max. turning dia	mm	Ø390	Ø460
Max turning length	mm	541	638
Bar machining dia	mm	Ø65	Ø76
Chuck dia	mm	Ø255	Ø304
Spindle motor power	kW	18.5	18.5
Max spindle speed	r/min	3500	3000
Max. spindle torque	N·m	201.8	401.2
Tool number	ea.	12	10

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