

# GLH SERIES

Linear rail type horizontal machining center

**500**



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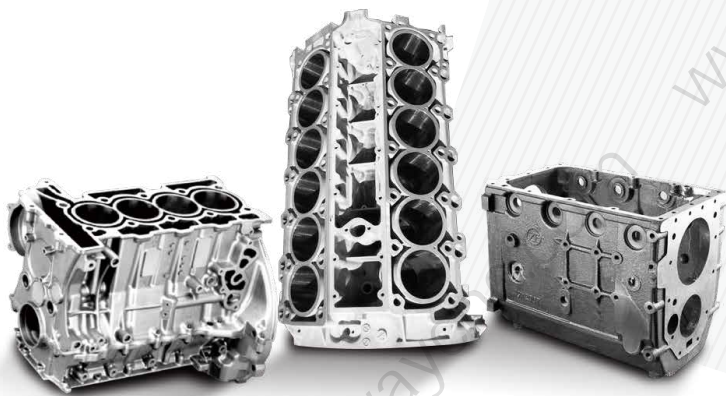
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# GLH 500

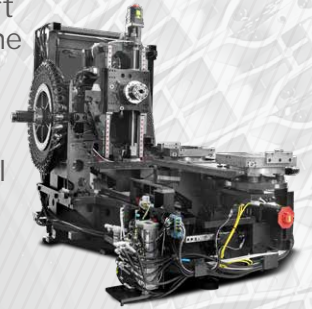
The GLH 500 is both stable and efficient, and can maintain stable processing performance in batch processing and long-term processing. 40# taper rich variety of spindles, tool library, automation forms, etc., for users to provide a convenient choice of diverse processing needs.





### 1 Stable bed structure

The 3-point support structure makes the bed have good static and dynamic rigidity. Compared with the traditional bed design, it improves the convenience of machine tool installation.



### 2 High Performance

The rich types of spindles provide convenient choices for users' diversified processing needs.



### 3 Ease of operation

The user-friendly operation panel improves the convenience of operation through the design of common buttons.



# Stable bed structure

## 1 Stable bed structure

X-axis segment differential design, solid support column, so that the bed has a higher static and dynamic rigidity. The 3-point support structure is adopted to improve the convenience of equipment installation and shorten the installation time.

## 2 Stable and fast axial feed structure

High-speed servo motors are installed on all axes for high-speed machining in a stable bed structure.

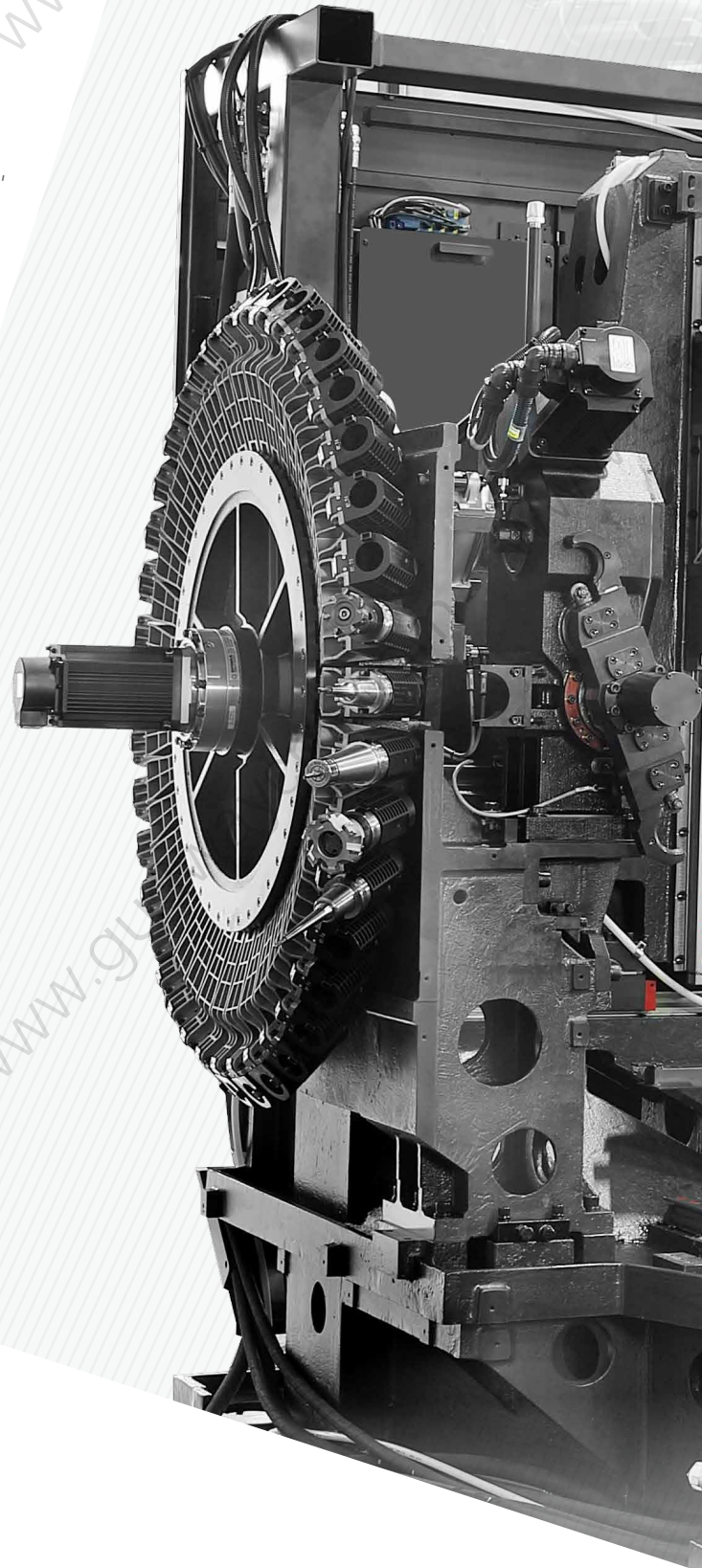
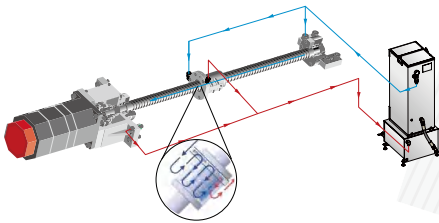
Acceleration **0.93/0.85/0.85 G**

Fastfeed speed: **60 m/min**

Feed speed: **0~60 m/min**

## 3 Ball screw cooling system

In order to avoid the lead screw deformation due to heat and affect the processing accuracy, the standard hollow oil cooling lead screw to achieve high precision during processing.



X/Y/Z axis travel  
730/730/880  
mm

Fast  
feed speed  
60/60/60  
m/min

Distance  
from spindle  
end face to  
center of  
table  
100mm

Eco-friendly grease lubrication is  
standard on all shafts.

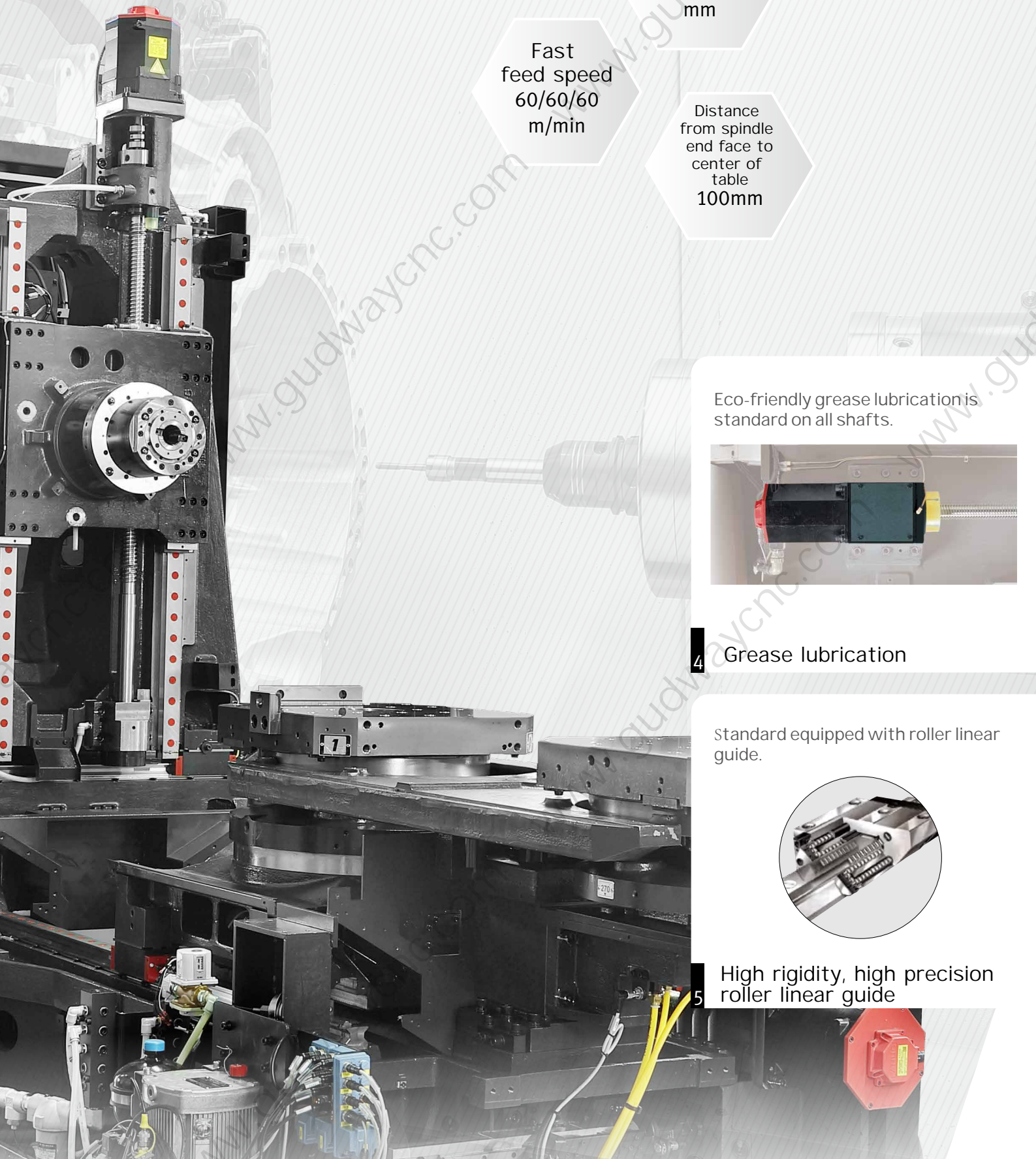


4 Grease lubrication

Standard equipped with roller linear  
guide.



5 High rigidity, high precision  
roller linear guide



# A wide variety of spindles provides convenient choices for diverse processing needs

## 1 High speed, high performance spindle

Direct drive motorized spindle is used to achieve high speed machining accuracy and surface quality. The standard spindle thermal displacement compensation function reduces the impact of thermal displacement on machining accuracy.

## 2 Various spindle configurations

Various spindle configurations are available to meet the diverse processing needs of users.

### General processing spindle: 15000 min<sup>-1</sup> ST

Spindle speed	min <sup>-1</sup>	15000
Spindle power (S325%/ continuous)	kW	30/18.5
Maximum torque	N·m	230

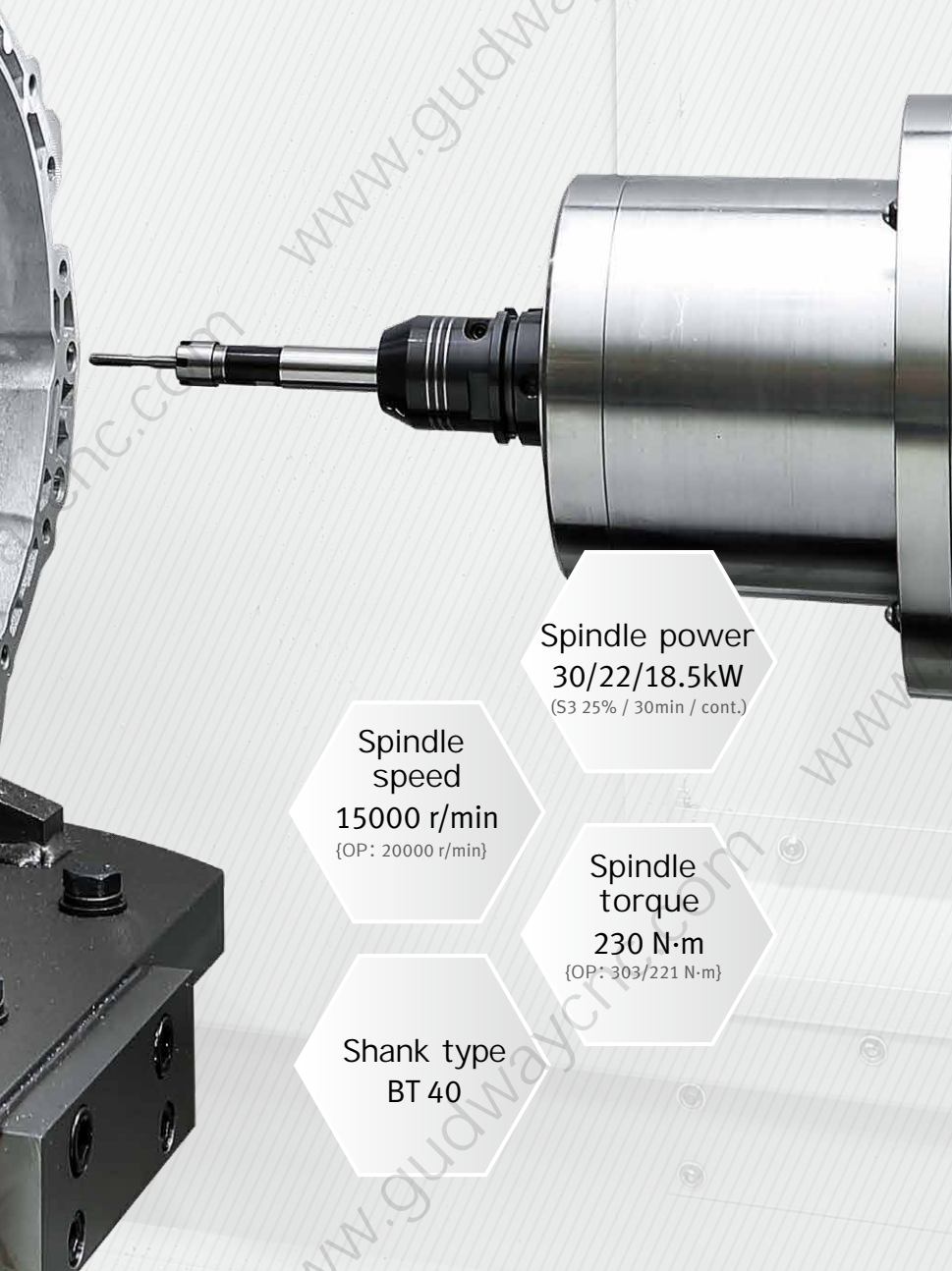
### Spindle for high torque machining: 15000 min<sup>-1</sup> OP

Max speed	min <sup>-1</sup>	15000
Spindle power (S325%/ continuous)	kW	37/22
Maximum Torque	N·m	303

### Spindle for high speed machining: 20000 min<sup>-1</sup> OP

Maximum spindle speed	min <sup>-1</sup>	20000
Spindle power (S315%/ continuous)	kW	37/18.5
Maximum Torque	N·m	221





**Spindle speed**  
15000 r/min  
{OP: 20000 r/min}

**Spindle power**  
30/22/18.5kW  
{S3 25% / 30min / cont.}

**Spindle torque**  
230 N·m  
{OP: 303/221 N·m}

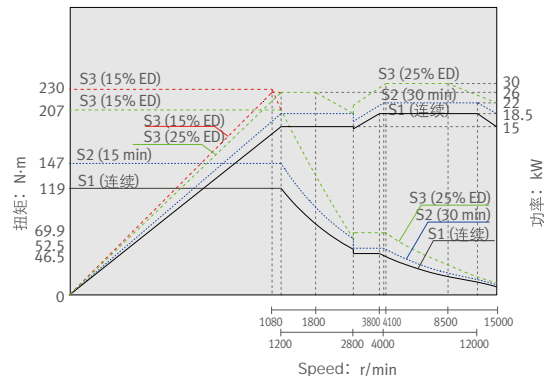
**Shank type**  
BT 40

## Spindle power-torque

Spindle 15000 r/min

ST

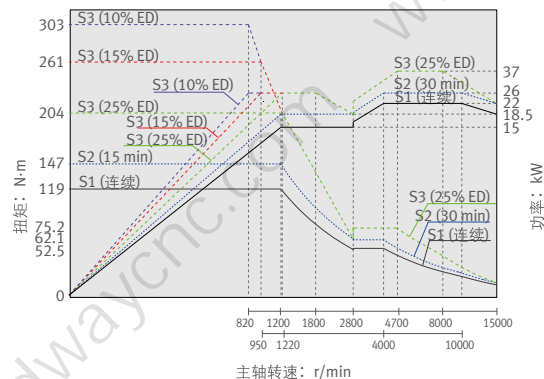
Maximum spindle motor power 30kW  
Maximum spindle motor torque 230N·m



Spindle 15000 r/min High torque

OP

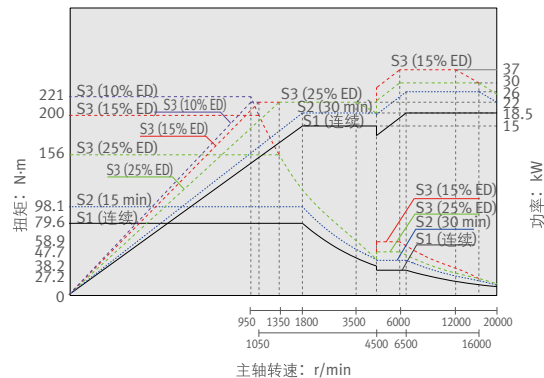
Maximum spindle motor power 37kW  
Maximum spindle motor torque 303 N·m



Spindle 20000 r/min

OP

Maximum spindle motor power 37kW  
Maximum spindle motor torque 221 N·m



# High precision rotary table

## 1 Rotary table with high precision positioning

1° indexing table **ST**

Min indexing: Angle **1°**

Table indexing time (90°) : **1.4** second

Max speed: **40** min<sup>-1</sup>

0.001° index direct drive motor table **OP**

Optional DDM (direct drive motor) high-speed rotary table, suitable for high-speed indexing, high-precision positioning when the processing.

Minimum indexing Angle **0.001°**

Table indexing time (90°): **0.9** second

Maximum speed: **100** min<sup>-1</sup>

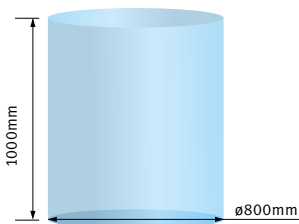
## 2 High rigidity rotary table

TABEL SIZE: **500X500** mm

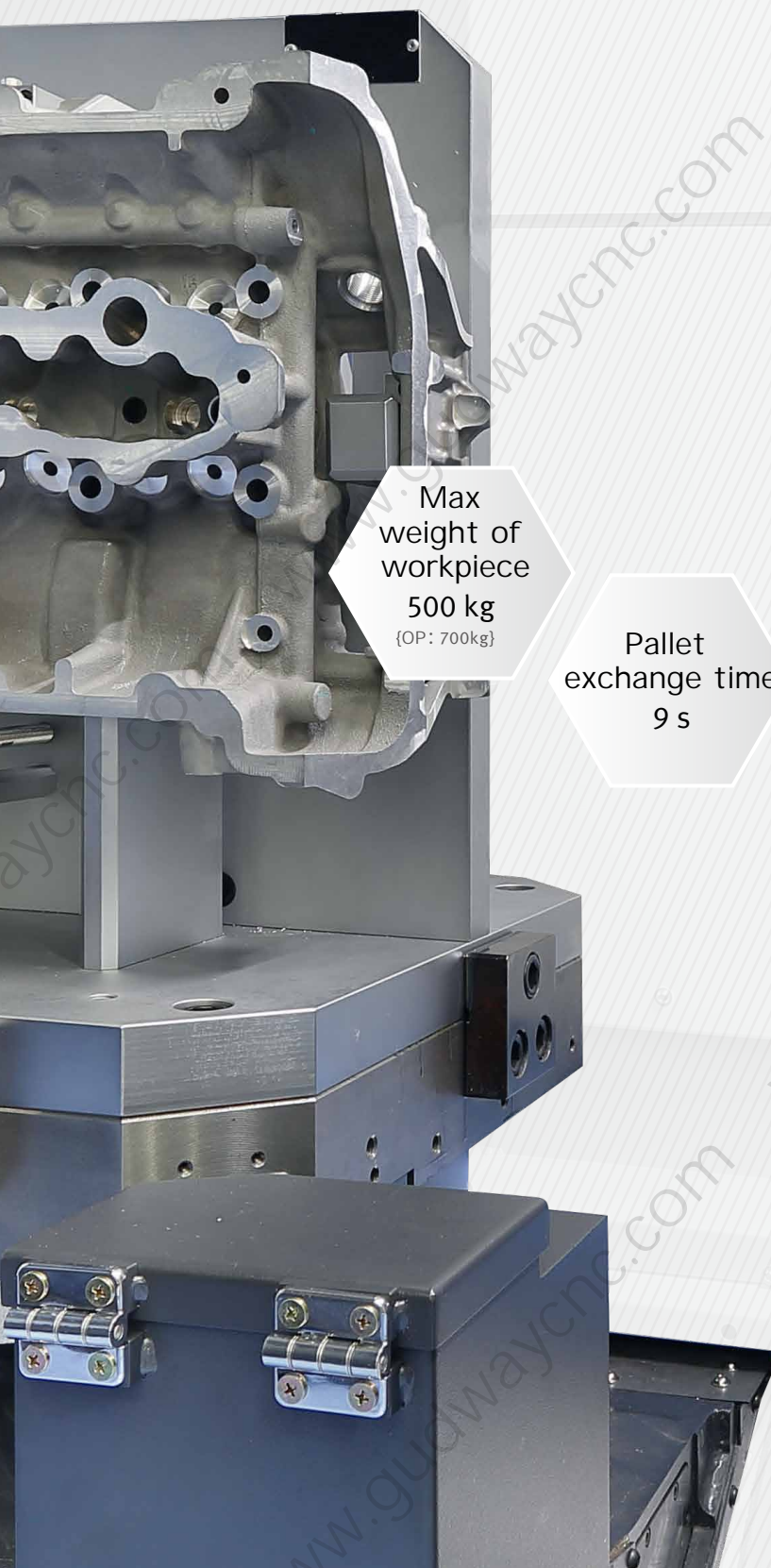
MAX SIZE : **φ800 X1000** mm

MAX WEIGHT: **500** kg **ST**

**700** kg **OP**







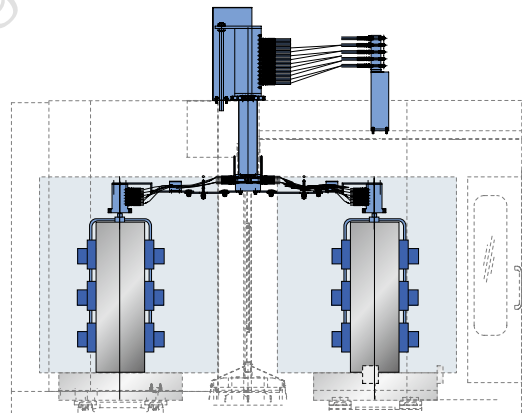
Max  
weight of  
workpiece  
**500 kg**  
{OP: 700kg}

Pallet  
exchange time  
**9 s**

### A Type Upper supply system

Hydraulic pressure is supplied to the clamps of each pallet through hydraulic pipes above the pallet exchange device

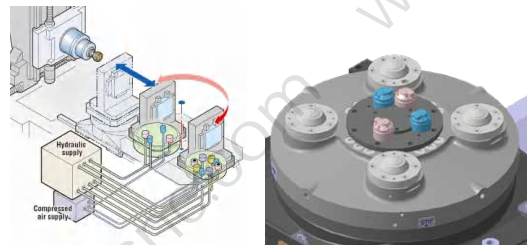
Maximum number of interfaces: 8 X 8



### B Type Lower supply mode

Hydraulic pressure is supplied via sealed couplers via a loop at the bottom of the tray

Maximum number of interfaces: 4 X 4



3

### Hydraulic clamp interface OP

Select hydraulic or pneumatic fixtures according to user requirements.

Hydraulic/pneumatic fixture sleeve

- A/B wire: 2, 4, 6, 8 (including solenoid valve)
- P/T wire: 2, 4, 6, 8 (Excluding solenoid valve)

Hydraulic motor for fixed fixture

- 2.2 kW / 7MPa
- 3.7 kW / 15MPa
- 5.5 kW / 21MPa



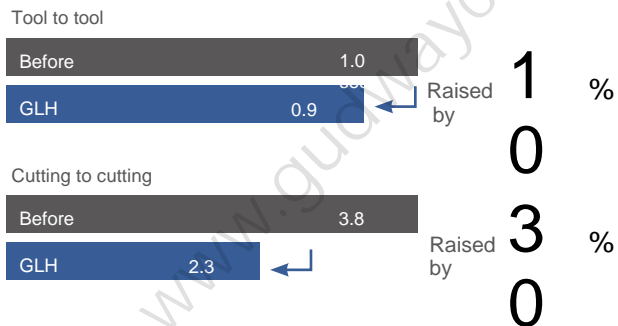
4

### Fixture system OP

# Multi-type tool library and servo ATC

## 1 Servo drive ATC (Automatic Tool changer)

The high speed servo ATC can effectively shorten the non-cutting time and improve the production efficiency.

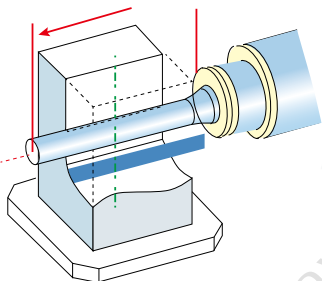


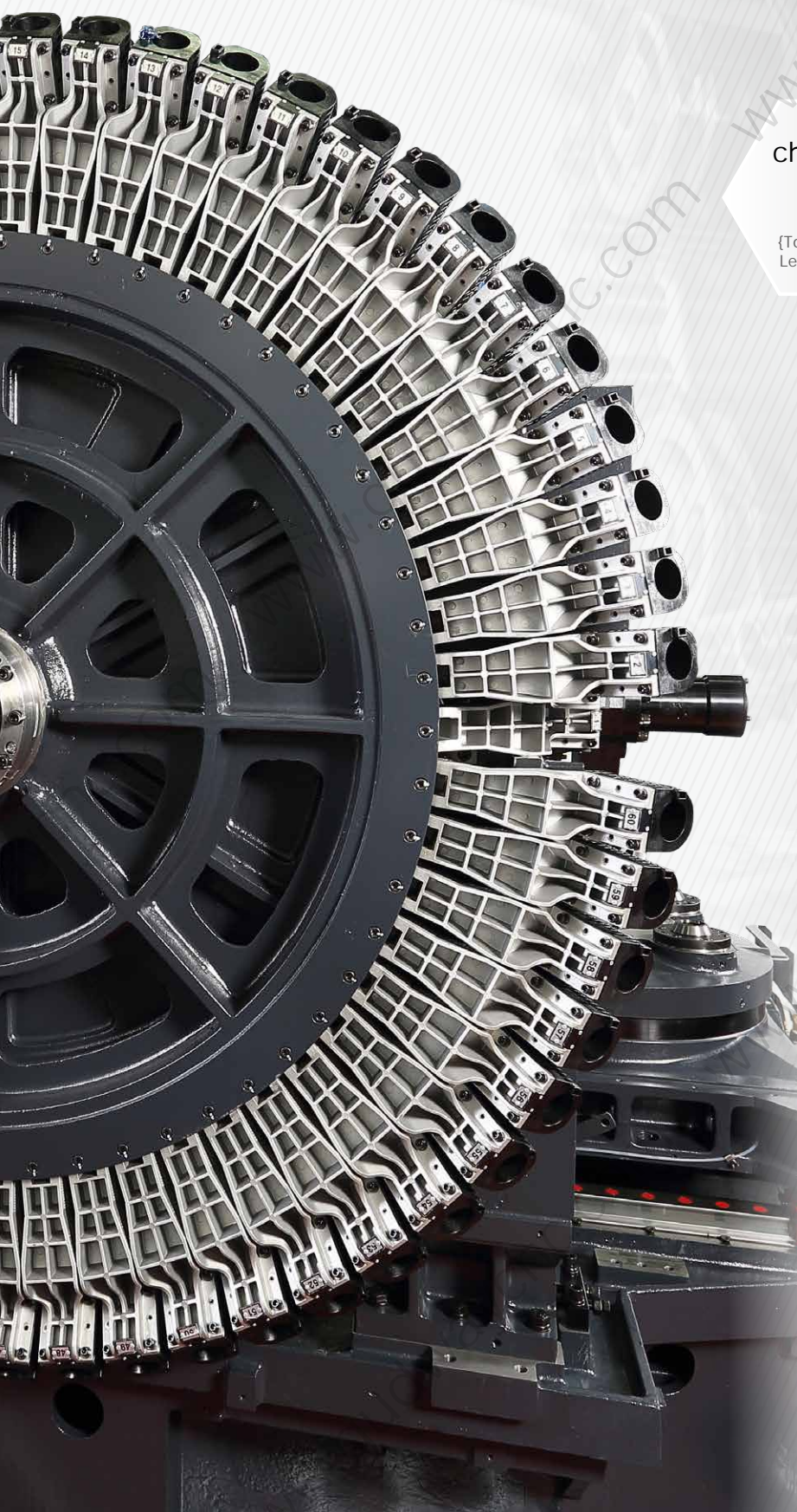
## 2 A wide range of tools

High-speed ring knife library with 40 knives as standard. Chain type, matrix tool library as an option, and provide a variety of capacity specifications, the maximum optional capacity of 275, easy to respond to the user's diversified processing, management needs.

## 3 Tool for deep hole machining

The longest tool reaches 550 mm, exceeding the size of the table. Deep hole boring can be performed.





Tool specification  
ø 170x550 mm  
(Max tool dia X length)

Tool changing time  
0.9 s  
{Tool to tool,  
Less than 8kg}

Tool capacity  
40  
{OP: 60/80/120/  
171/275}

Chain type, matrix knife library as optional

Chain tool magazine

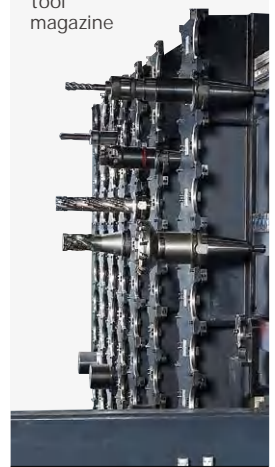
OP



80/120 tool

Matrix tool magazine

OP



171/275 tool

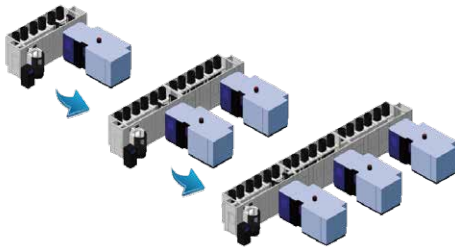
# Pallet automation system <sup>OP</sup>

## 1 Linear Pallet System [LPSII]

The LPSII linear pallet system is designed and produced by Dean Machine Tools to provide users with a convenient automation system that offers excellent flexibility, including system expansion and layout changes.



- Up to 7 devices
- Number of trays: up to 72 ea
- Workpiece diameter: 800 mm
- Maximum weight: 500 kg
- Standard size: 7824 x 2400 mm



### Features

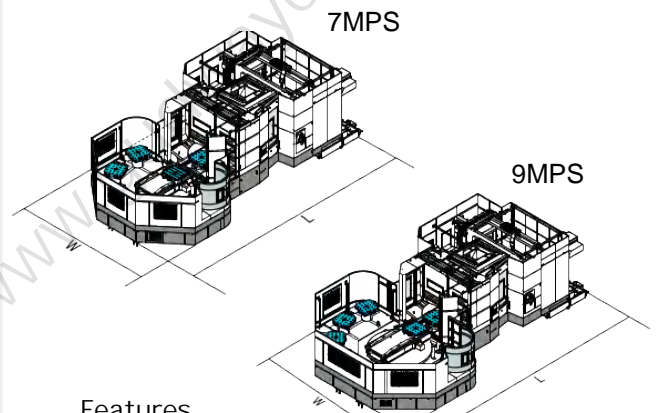
- Easy to implement system expansion station equipment with modular storage racks up to 7 machines and 72 pallets of efficient workpiece loading space
- Automated operation control via PC-based OS

## 2 Multi-pallet Automation System (MPS)

Compared to standard two-pallet machines, MPS uses the job scheduling function to enable long unmanned operation and flexible production of multiple workpieces. The system can be easily installed and disassembled on site.



- Number of trays: 7&9 ea
- Workpiece diameter: 800 mm
- Maximum weight: 500 kg

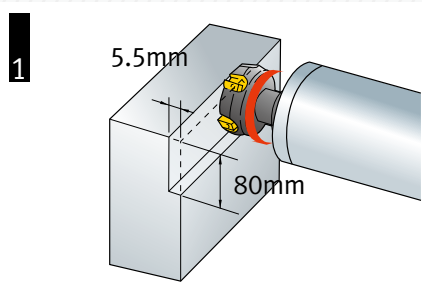


### Features

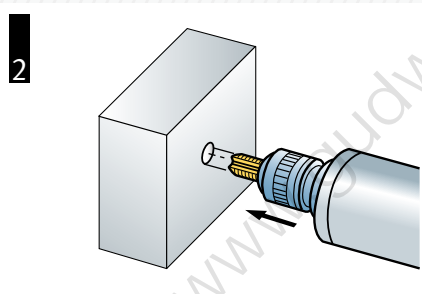
- Long time unmanned operation
- Bracket type servo drive, high reliability
- Simple installation and easy maintenance
- Convenient for field modification

# Machining

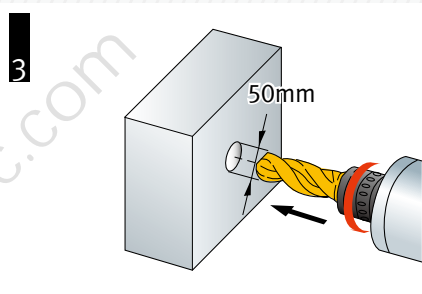
(Motor power : 30/18.5 kW)



Tool	ø80 Face milling cutter ø125 (mm7Z) Face milling cutter, Depth 5.5(mm8Z)
Cutting per minute	Cutting per minute 912 cm <sup>3</sup> /min
Spindle speed	500 r/min
Feedrate	2592 mm/min



Carbon Steel Tapping (SM45C)	
Tool	M36×4
Spindle speed	220 r/min
Feedrate	880 mm/min



Carbon steel drilling (SM45C)	
Tool	D50 U型钻头(2Z)
Cutting per minute	526 cm <sup>3</sup> /min
Spindle speed	1080 r/min
Feedrate	260 mm/min

## Productivity test

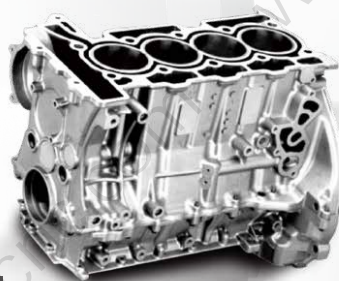
 Raised by **18%**

- Product: Diesel engine cylinder block
- Material: Aluminum

Processing Time

Before	193 sec
GLH 500	158 sec

35 sec

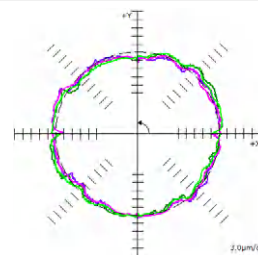


## Tolerance

Accuracy of positioning  
6.2/4.1/5.6 μm  
Repositioning resolution  
4.5/2.0/4.8 μm

## Roundness

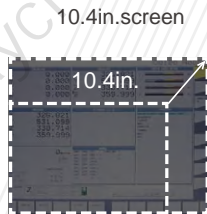
6.7 μm



# Convenience

## Simple panel

Humanized design of the operation panel, optional custom function switch and other functions, to bring convenience to the operator.



Lock/unlock buttons, counters, timers and other special optional buttons can be pressed by the mounting fixture

Partition button to prevent incorrect operation

### PCMCIA card

PCMCIA card can upload and download NC program, NC parameters, tool information and ladder program, in addition to support DNC operation.

### USB port

Allows the use of USB drive to upload/download NC software programs, NC parameters, tool information and ladder programs, but does not support DNC operation.



## Rotary operating panel

The operation panel can be rotated 90° and displays machine alarm information and controller errors, which is more convenient for the operator.



## Portable MPG

The portable MPG makes it easier for users to set up workpieces.



**Lubrication system**

Standard grease lubrication systems do not require skimmers and reduce lubrication costs by approximately 65% compared to oil lubrication.

Annual maintenance cost

Max **65%** ↓



**Chip-conveyor**



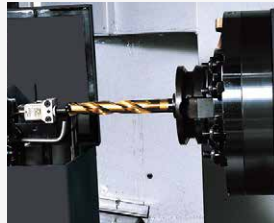
Drum filter **OP**



**Measuring system**



Auto tool breakage detection device I (BK 9) **OP**



Auto tool breakage detection device II (OMRON) **OP**



Auto tool measuring device (TS 27R) **OP**

**Chip handling system**



Flush coolant



Coolant spray gun on top of spindle



Spray coolant **OP**



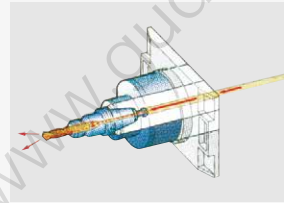
Cooling gun **OP**



Mainshaft flush coolant



Spindle center discharge **OP**



MQLsystem Oil mist **OP**



**Environmental protection device**



Oil skimmer **ST**



Oil mist collector **OP**

# EOP function

The Easy Operation Package (EOP) provides users with tool monitoring, management and help, operation and tray library.

## Tool Manager



### Tool Manager I

- Tool magazine control
- Display tool status
- Fastems tool add/remove function

### Tool Manager II OP

- Tool magazine control
- Tool life management
- Tool life prediction
- Tool magazine status control
- Balluff tool ID function

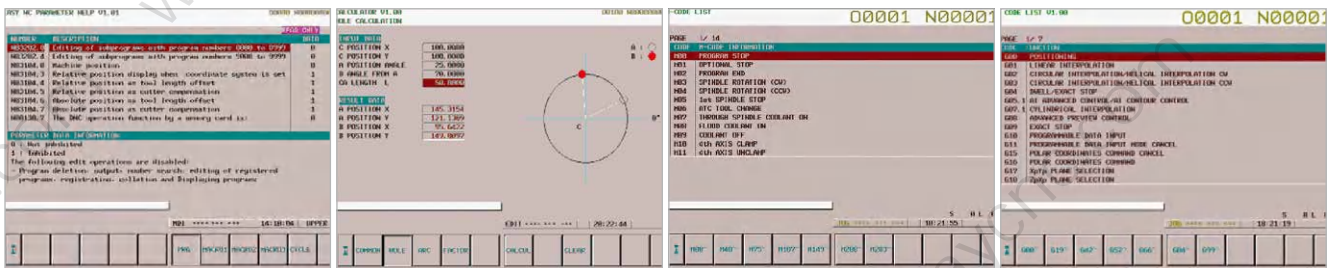
### Tool load monitor

- Tool damage detection
- Anomaly detection during operation
- No load blank cut detection

### ATC/APC panel

- ATC manual
- APC manual

## Help



### Simple NC parameters

- Main parameter help
- Display parameter Settings

### Calculator

- Calculator capabilities
- 4 arithmetic operations
- Support for math functions

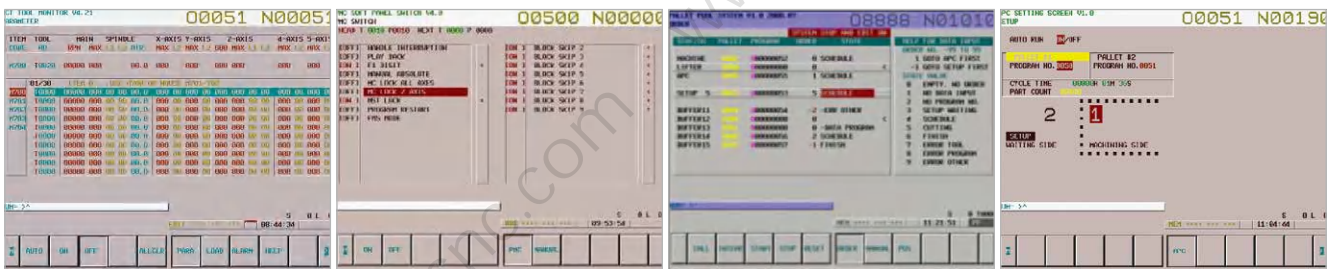
### M code list

- M code list

### G code list

- G code list

## Operation



### Running speed

- Measure various machine running speed
- Three shift operations are supported
- Calculate&store operating speed 30 days
- Displays data for a specified date

### PMC switch

- Operation Panel function (optional)
- Alternate switching switch
- NC Software Optional

### Multi-tray station OP

- Control MPS operation
- Displays MPS PMG information
- Set processing progress
- Automatic call function
- Manual operation and coordinate setting functions

### APC setting

- 2 Tray APC operation screen



Size

GLH500

UNIT: mm

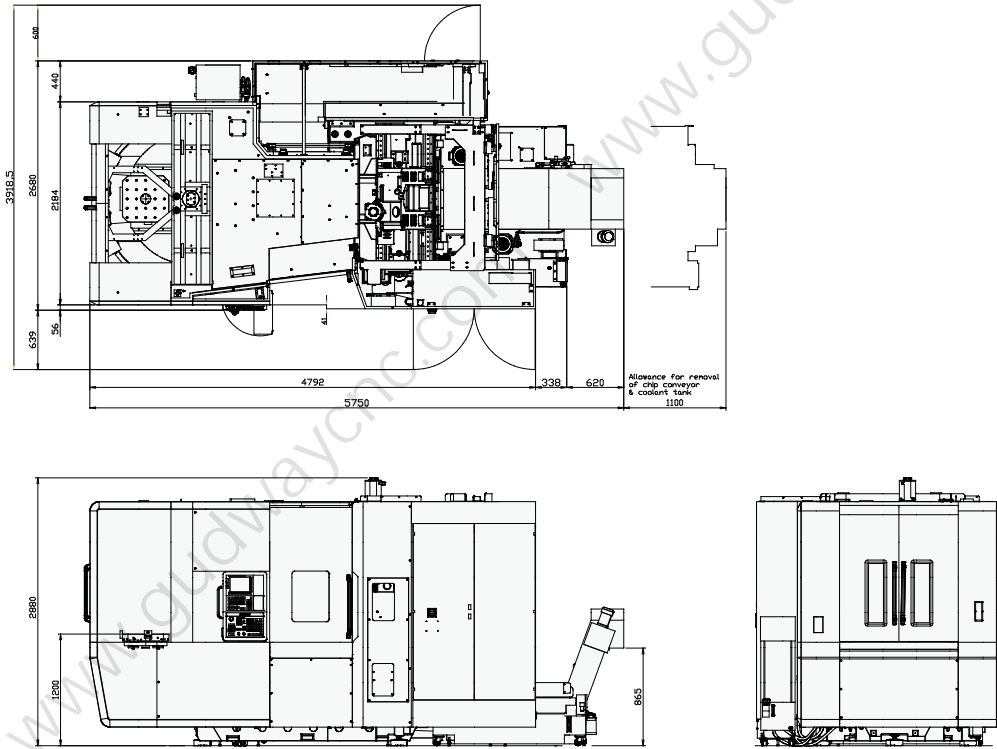
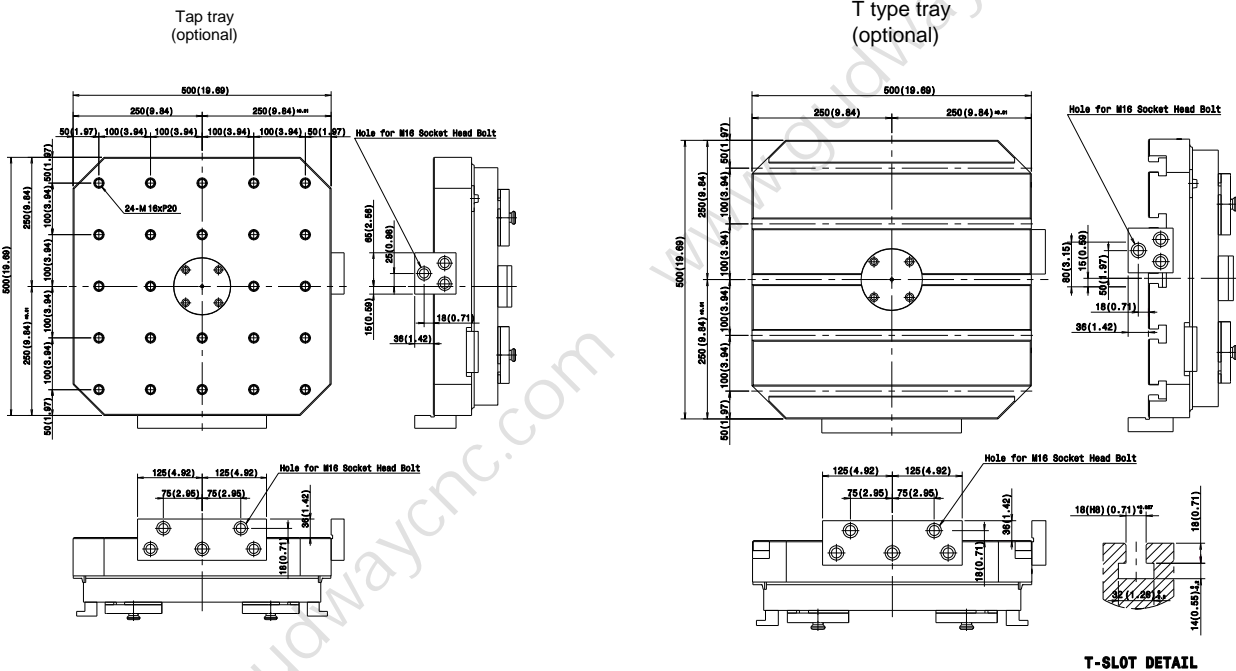


Table size

UNIT: mm



## Specification

GLH 500



Item		UNIT	GLH 500	
Machining	Feed distance (X/Y/Z)	mm	730 / 730 / 880	
	Distance from spindle front to bench center	mm	100 - 980	
	Distance from spindle center to table surface	mm	80 - 810	
Pallet	Pallet type		24-M16×P2.0	
	Indexing Angle	deg	1 {0.001}	
	Maximum load	kg	500 {700}	
	Max workpiece size	mm	800×1000	
	Tray size	mm	500×500	
Spindle	Maximum spindle speed	r/min	15000 {20000}	
	Taper specification		ISO #40, 7/24 TAPER	
	Maximum Torque	N·m	230 {303/221}	
Feedrate	Fast moving speed (X/Y/Z)	m/min	60 / 60 / 60	
	Cutting feed speed	mm/min	60000	
Auto pallet exchange device	Pallet quantity	ea.	2	
	Pallet switching system		Rotary shuttles	
	Pallet exchange time	s	9	
Auto tool changing	Shank type		MAS403 BT 40	
	Tool magazine capacity	ea	40 { 60 / 80 / 120 / 171 / 275 }	
	Maximum tool diameter	mm	75 (CONTINUOUS.), 170 (ADJACENT POTS EMPTY)	
	Maximum tool length	mm	550	
	Maximum tool weight	kg	12	
	Tool change time (tool-tool, less than 8kg)	s	0.9	
Motor	Spindle motor power	kW	30 / 22 / 18.5	
	Power	Power supplies	kVA	80 {90}
		Air pressure	MPa	0.54
Box capacity	Cooling tank capacity	L	570	
	Lubricating oil pot capacity	L	2	
Machine size	Machine height	mm	2880	
	Machine area (L X W)	mm	5750×2680	
	Machine weight	kg	11500	

• {}optional

### Standard

Oil skimmer  
 Work light  
 Condition light  
 Spindle head cooling system  
 Coolant tank  
 Install parts  
 Standard FANUC iPlus

### Optional

5th axis preparation  
 Linear grating ruler  
 Air gun  
 Auto workpiece measuring device  
 Auto power cut-off device  
 Auto tool length measuring device  
 Water gun  
 Chip extractor/chip truck  
 Test rod  
 Spray cooling  
 Hydraulic clamp interface  
 Spindle center water



**GLH 500**

ITEM	UNIT	GLH 500
Max spindle speed	r/min	15000 {20000}
Max spindle power	kW	30 / 22 / 18.5
Size of Rocking Plate	mm	500 x 500
Tool taper		ISO #40
Travel (X/Y/Z)	mm	730 / 730 / 880
Tool magazine capacity	ea	40 {60/80/120/171/275}

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