

# GTW-1500 SERIES

TURRET / GANG TOOLING  
MULTI-AXIS CNC TURNING CENTER



THE ULTIMATE MACHINING POWER  
**WOODWAY**

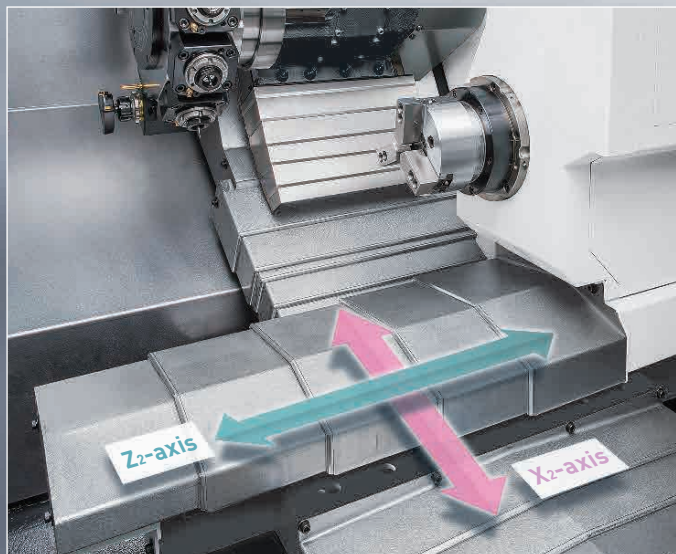
# TURRET / GANG TOOLING MULTI-AXIS TURNING CENTER

With the latest technology and high quality components of the industry, GOODWAY GTW series multi-axis turning centers combined with multi-axis, high efficiency and high performance especially developed for medical & automobile industry. It can easily complete the complex front and rear side machining of work-piece with high efficiency and high precision machining performance. It's perfectly once again annotating a new standard of multi-axis turning center.

- Combined with live tooling turret and gang tooling systems is more convenient for programming, and makes series high efficiency and economic.
- Brand new design of X-axis on sub-spindle provides extra working space. The gang tooling can continue working after catch the work-piece from sub-spindle, which increases the efficiency of machining.
- Standard twin Y-axis function with live tooling turret, gang tooling system and C-axis can improve the ability for complex machining and accuracy.
- With separated coolant tank and rear discharge of chips conveyor design, it is easy to maintain and provide high efficiency for cooling.



■ Gang tooling system



■ Sub-spindle X<sub>2</sub> & Z<sub>2</sub> axes



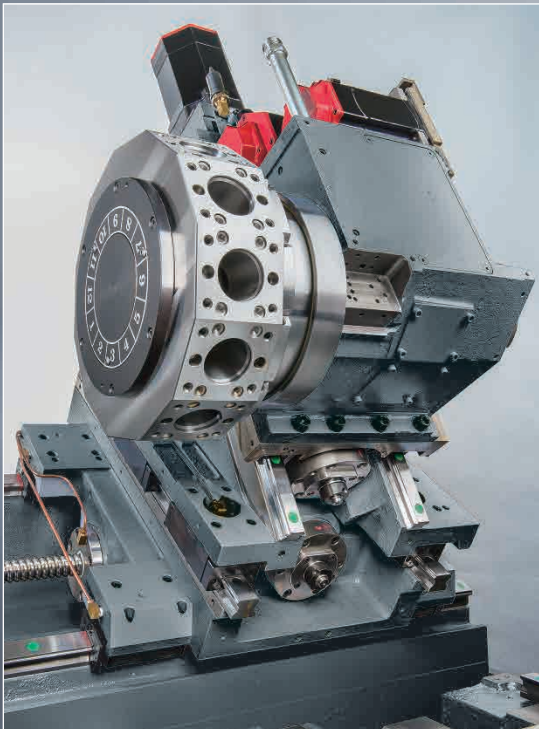
Maximum Performance Online



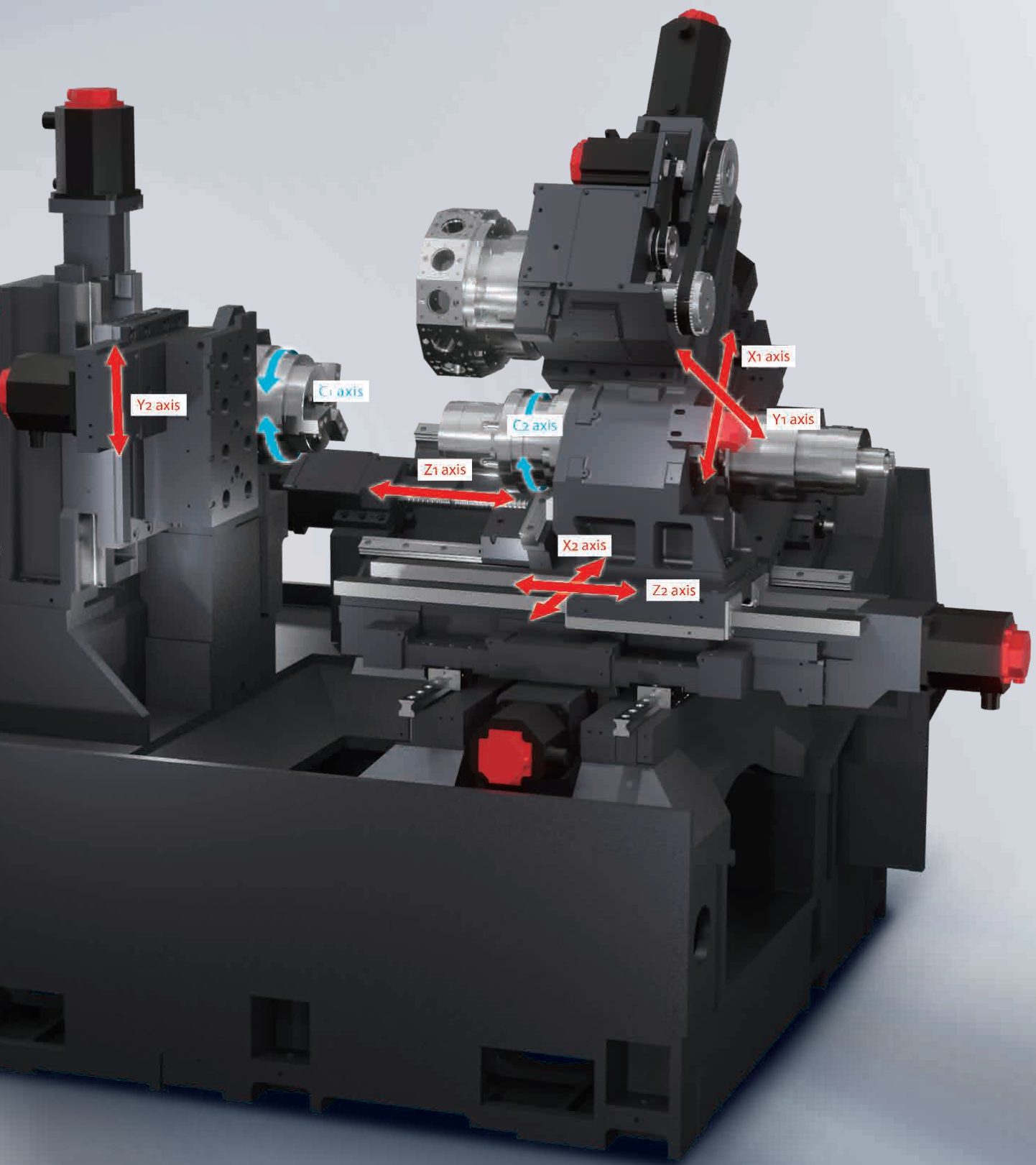
( GTW-1500 series with optional accessories. )

# SUPER RIGID STRUCTURE

- By using Finite Element Analysis ( FEA ), the optimal reinforced ribs are directly cast into the integrated base. Mechanical rigidity has been increased sharply compared to conventional design. The GTW series is capable of performing super-duty turning and maintain long-term super high-precision accuracy.
- The heavily ribbed, thermally balanced, super rigidity of "Meehanite" grade casting is capable of with standing much greater stress without deforming and provides maximum vibration dampening, which result in a machine that will outlast and outperform the competition.
- Contract surfaces of all slides, spindles, turrets and ball screw bearing housings and base are precisely hand scrapped to provide maximum assembly precision, structural rigidity, and load distribution.
- X, Y<sub>1</sub> and Z<sub>1</sub> axes uses high speed, high accuracy linear guide ways design and stretch to reach maximum intensity and accuracy, which can ensure the structural rigidity and reach the rapid feed rate.
- X, Y and Z axes are driven by high class FANUC absolute AC servo motors, and provide tremendous thrust output with faster acceleration / deceleration.



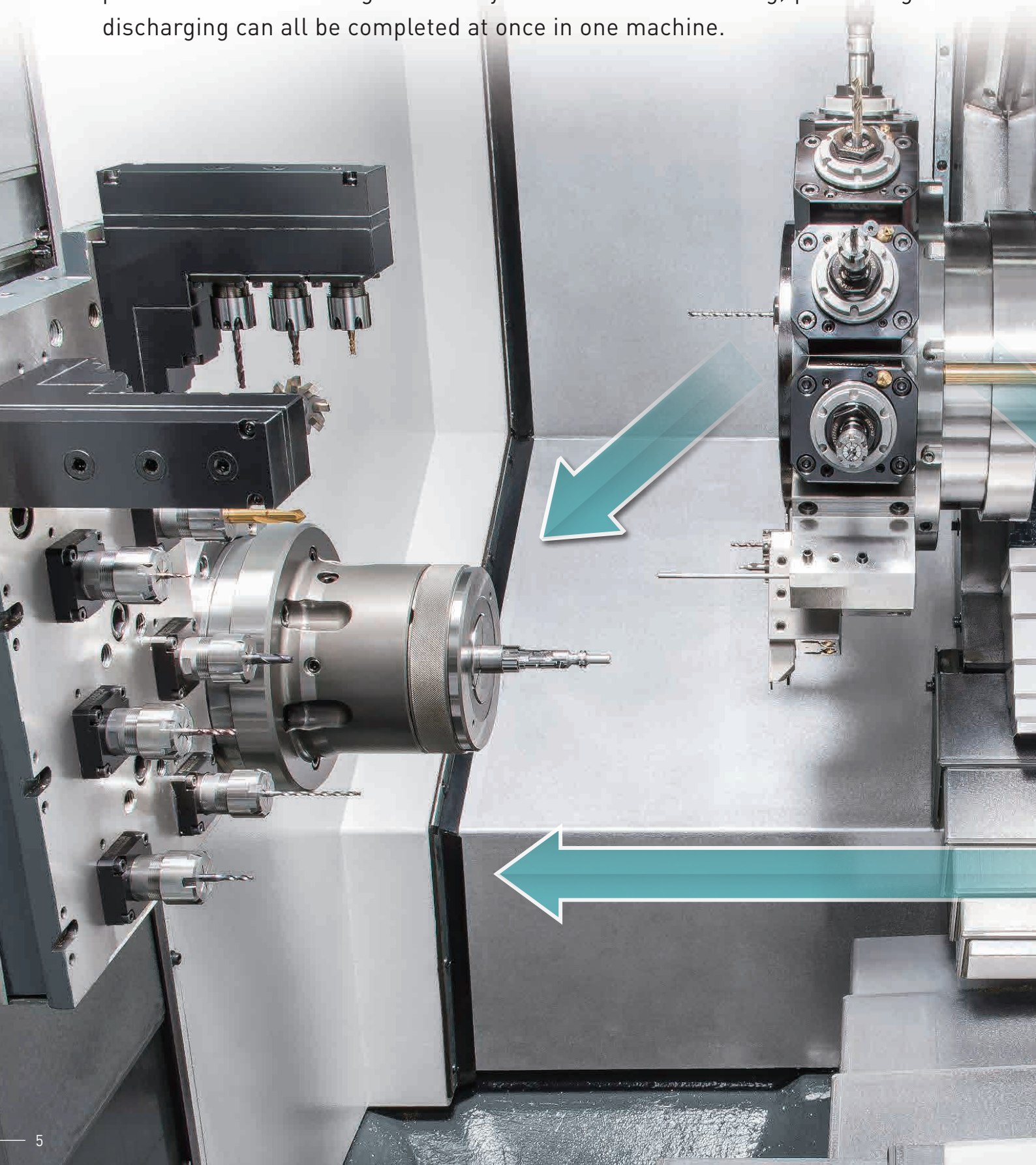
- 30° slant bed design provides extremely stable base and saddle.

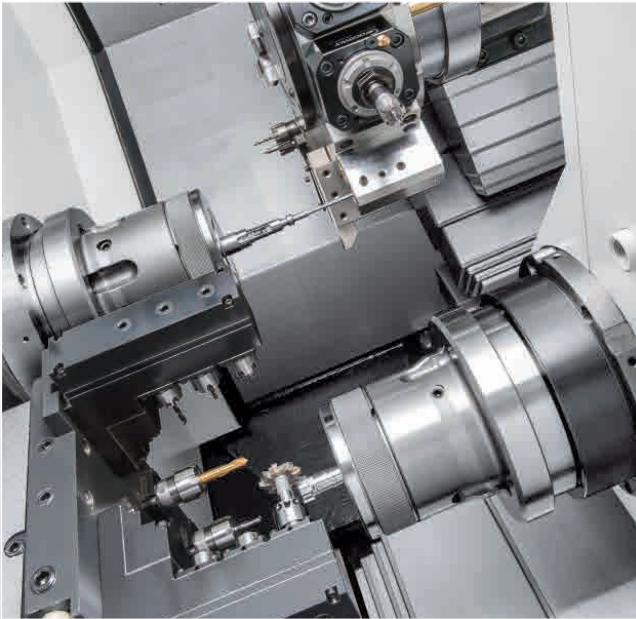


( Main construction of GTW-1500 series. )

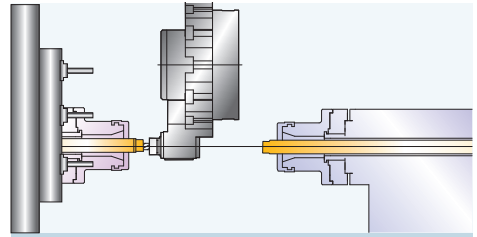
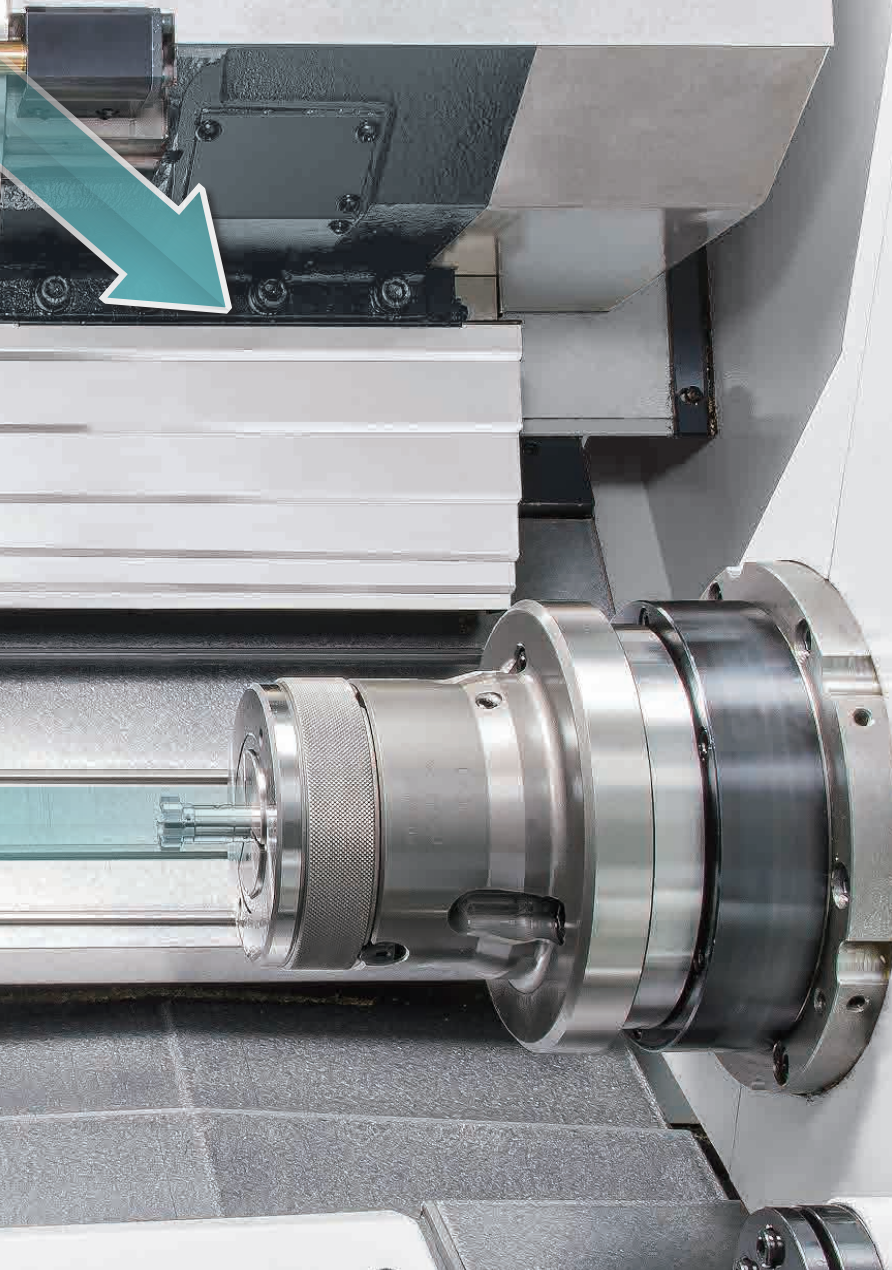
# FLEXIBLE MACHINING MODE

The turret can support main and sub-spindle while machining. Gang tooling system is specially for rear side of machining on sub-spindle. The specialized tooling system features with loading and unloading system, which provides flexible and high efficiency mode. From bar feeding, processing and discharging can all be completed at once in one machine.

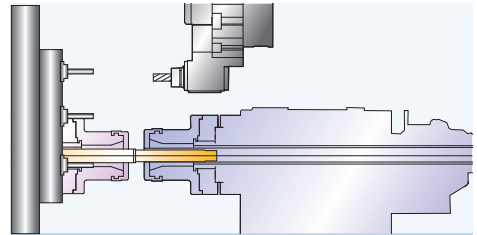




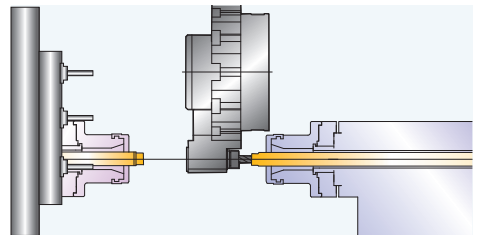
■ Spindle / Sub-spindle synchronous cutting



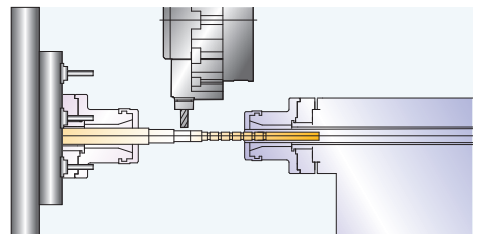
**A1** Front side machining



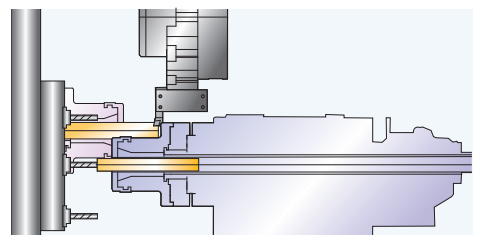
**A2** Sub-spindle clamps the work-piece



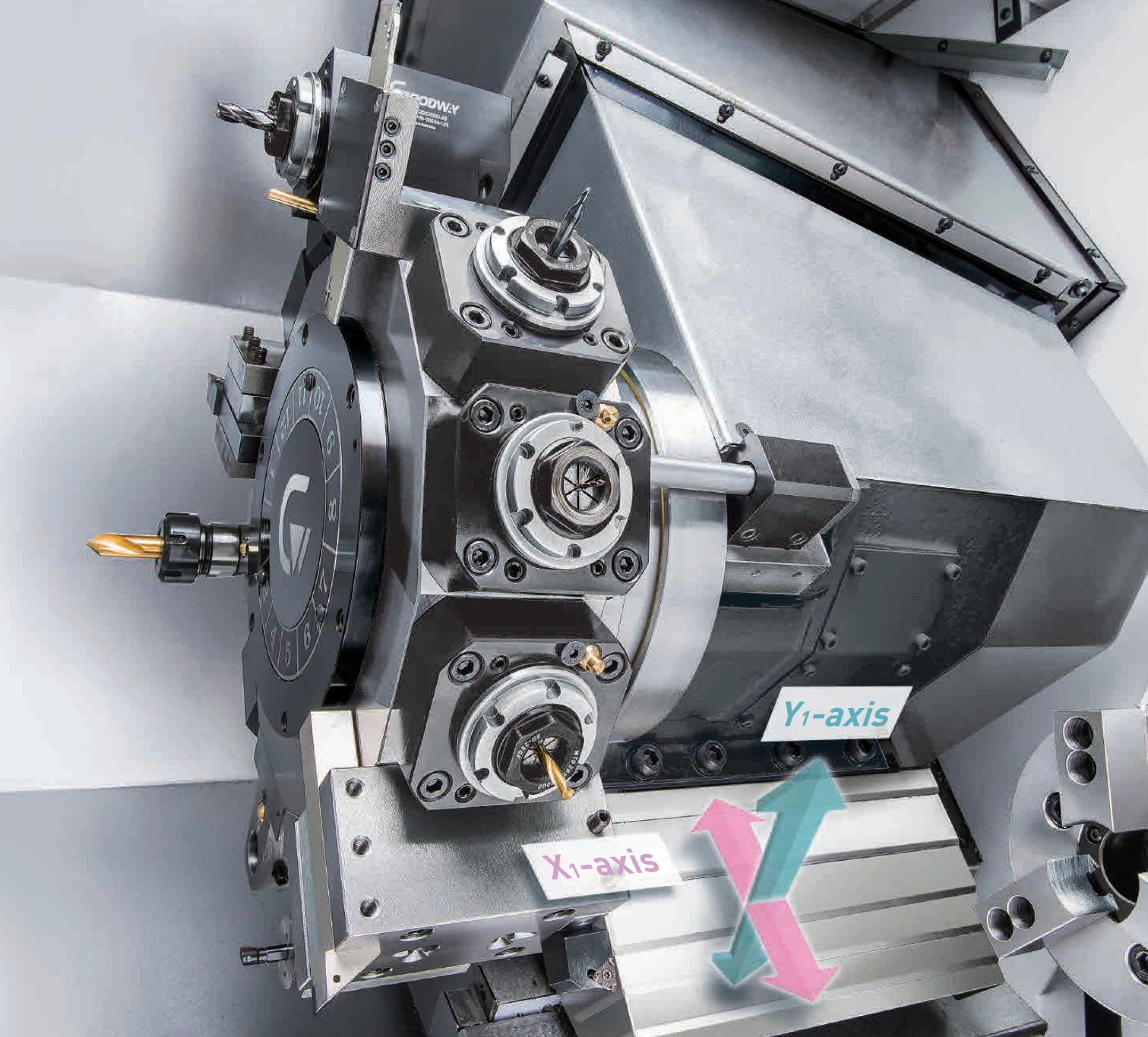
**A3** Rear side machining



**B** Corresponding machining on both main and sub-spindle



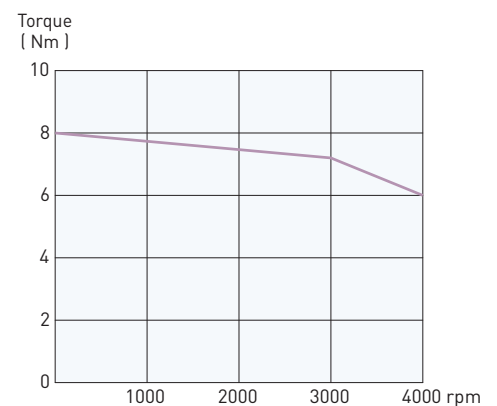
**C** Gang tooling machining on rear side of work-piece

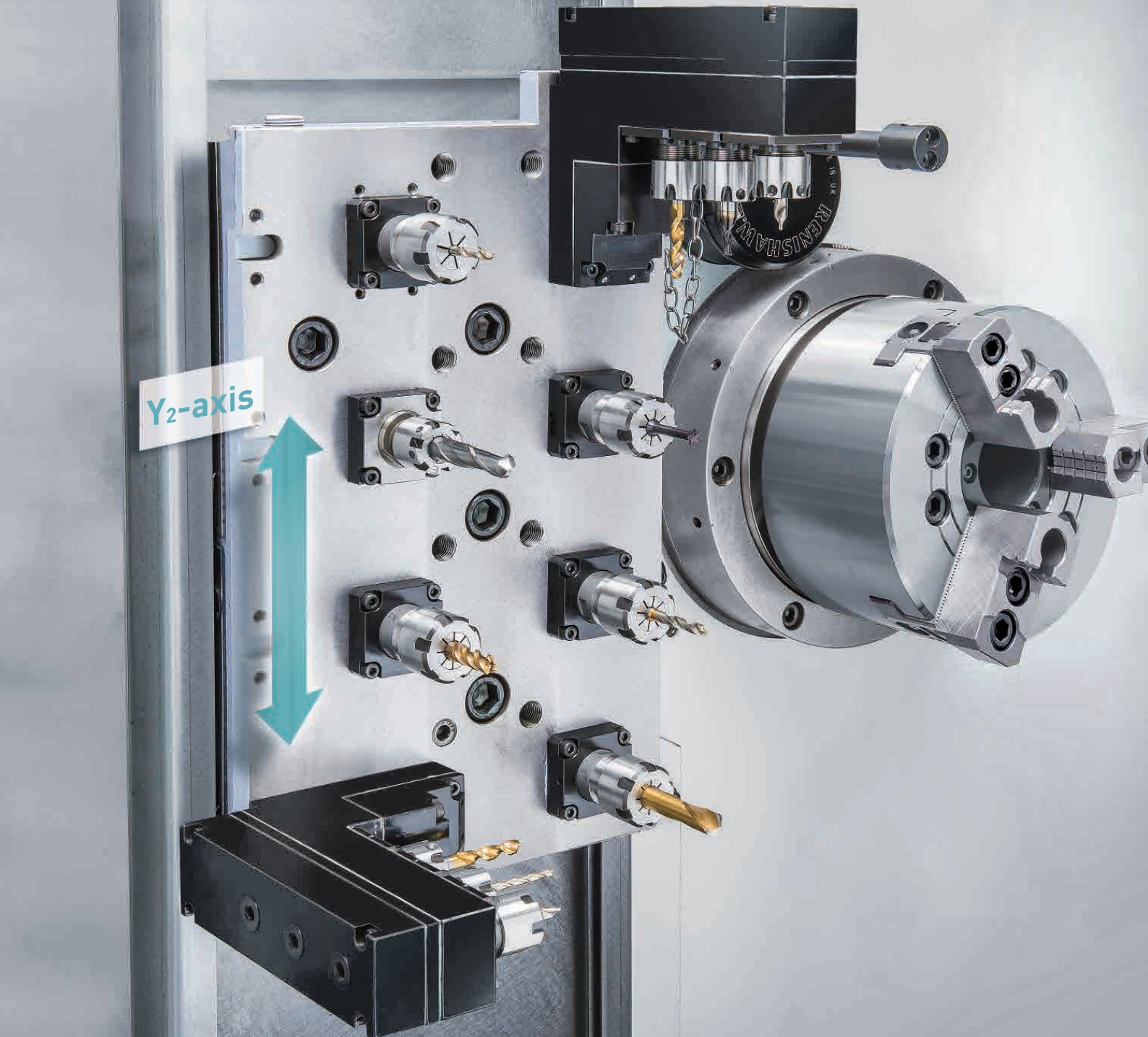


## LIVE TOOLING TURRET & Y-AXIS

- Adopt super high precision curvic couplings accurately positioning turret disk ensures the rigidity of turret in any cutting conditions.
- Heavy load servo indexing turret features the latest turret disk technology, achieving 0.2 second indexing for adjacent stations and 0.5 second for stations at the opposite end of the disk.
- 12-station live tooling turret is available for option, and only the working tools are spinning with the rest tools are not, which can save the wear of the tool.
- Y<sub>1</sub>-axis travel : 70 mm = ± 35 mm, Y<sub>1</sub>-axis and X<sub>1</sub>-axis direction included angle 30°, the gravity of turret is always located on the range of the saddle to ensure the rigidity of full travel.

Torque Output of Live Tools

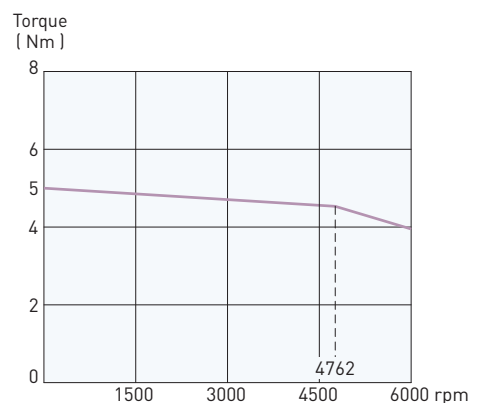


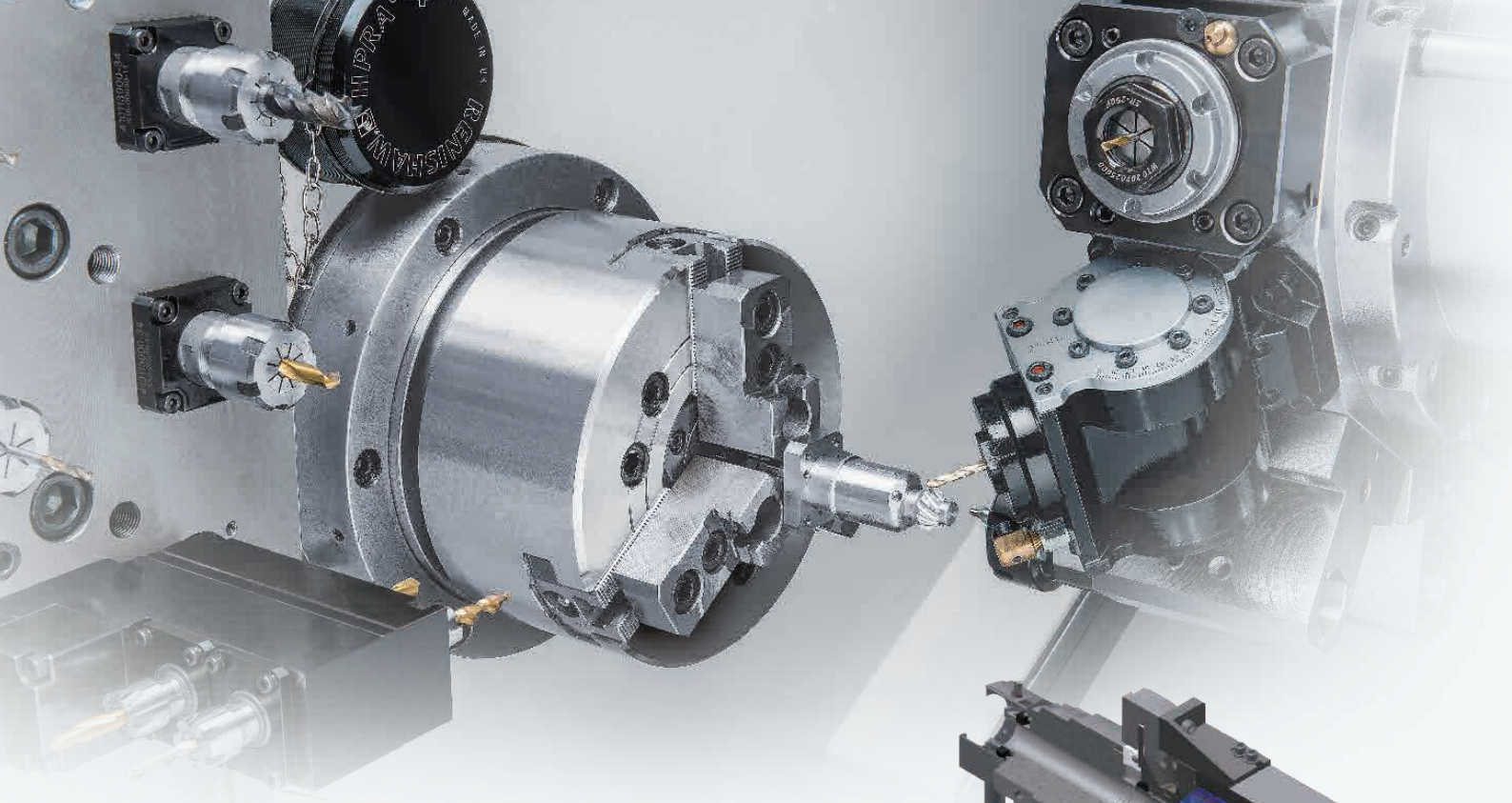


## GANG TOOLING SYSTEM & Y-AXIS

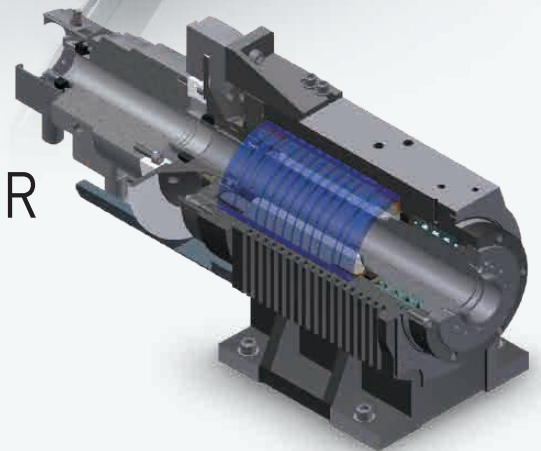
- Gang tooling system provides 8-station live tooling and driven by AC servo motor with high torque, which can accomplish the hardest machining easily.
- Easy dismount design on gang tooling system is especially designed for sub-spindle. Rapid tool change, and no need to recede tools, which greatly improves the machining efficiency on rear side machining.
- Y<sub>2</sub>-axis travel : 250 mm, rapid feed rate : 24 m/min. with rapid tool change and enable to perform multi-tasking for precise machining.

Torque Output of Live Tools



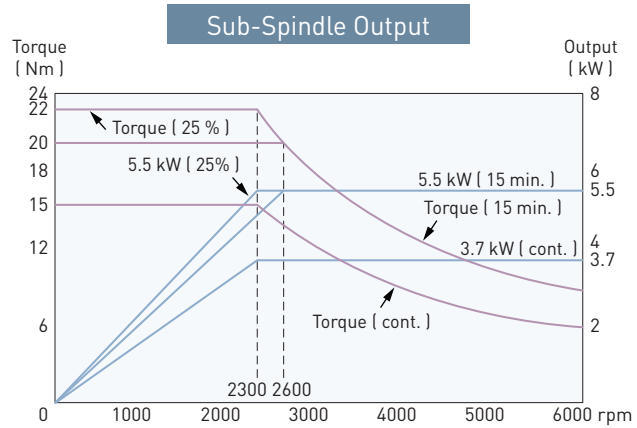
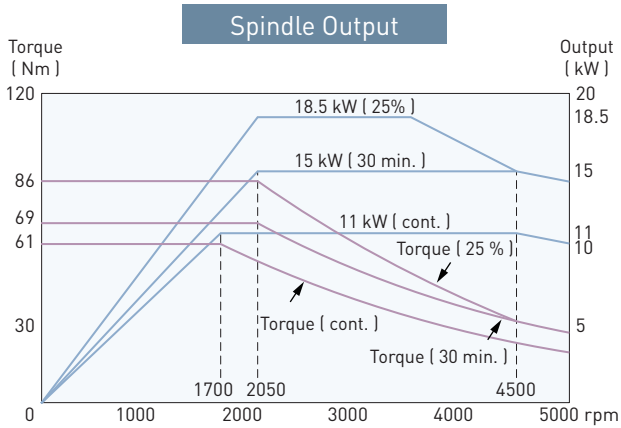


# THE ULTIMATE MACHINING POWER



GANG TOOLING SYSTEM CAPABILITY	
Tapping ( Dead )	10 mm
Tapping ( Live )	8 mm
Drilling ( Dead )	M8 × P1.25
Drilling ( Live )	M6 × P1.0
Milling ( Live )	10 mm

LIVE TOOLING TURRET MACHINING CAPABILITY					
	Tool Size	Spindle Speed ( rpm )	Feedrate ( mm/min. )	Cutting Speed ( m/min. )	Cutting Depth ( mm )
Drilling	Ø 16 mm HSS	500	—	25	—
End Mill	Ø 16 mm HSS	600	190	30	4
Tapping	M12 × P1.75	400	—	15	—



# GLINC INTELLIGENT OPERATING SYSTEM (Opt.)

## Make Your Machine Smarter

- Multi-touch screen
- Excellent operability
- Multiple adjuvant tool
- Utilization rate checking and analysis
- Workpiece counter checking and analysis
- Integrative machining operating interface
- Visible date interface
- Maintenance notification



### Machining preparation

- Ultra fast tool selection
- To memorize MDI program

### Program editing

- Adjuvant of G/M code
- Graphical procedure management
- Manual Guide

### Machining

- Load monitor
- Tool life time
- Machined parts counter
- Visible servo observation

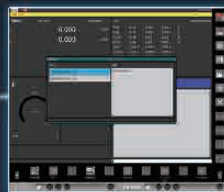
### Adjuvant function

- Data record
- Maintenance Warn
- Memo
- E book
- Prt Scrm record



#### Ultra fast tool selection

To quick change the current tool number by virtual keyboard and to set the protective button for mistouch.



#### MDI program memory

Operator can save the current machining program code in bookmark and call it again from there.



#### G/M code assistance

When editing process program, search G/M coder function to assist in editing program.



#### Visible servo observation

Observe information of each spindle and servo axis, such as coordinates, rotating speed, torque, etc.



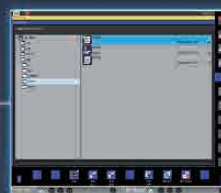
#### Tool load monitor

In processing, it is able to monitor each axis loading value. If loading value is out of the reasonable range, alarm will sound.



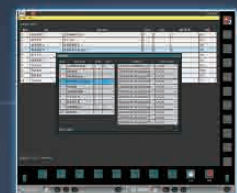
#### Tool life monitor

Set each tool process time and amount. If it reaches to set value, alarm sound.



#### Graphical process manager

Graphical present process program list and add note to each process program.

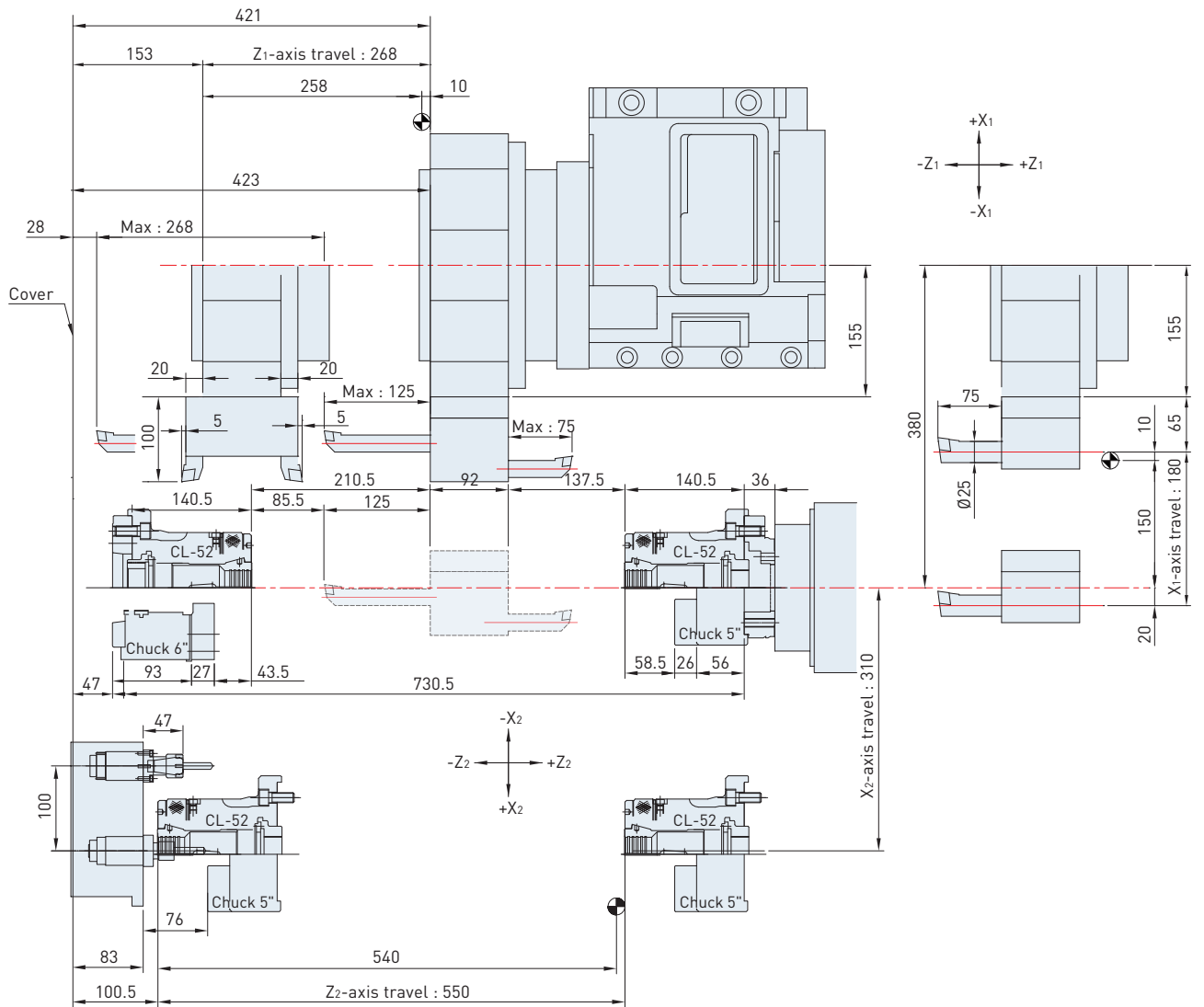


#### Data recorder

View after setting every information of machine monitor. Export file and analyze the data.

# GENERAL DIMENSION

## Work Range



Unit : mm



# MACHINE SPECIFICATIONS

■ : Metric ■ : Inch

<b>GTW-1500Y</b>			
<b>SPECIFICATIONS</b>			
Max. turning diameter	Ø 250 mm 9.84"		
Max. swing diameter	Ø 400 mm 15.74"		
Max. turning length	210 mm 8.26"		
Chuck size	CL42	CL52	6" ( Big-Bore )
Bar capacity	Ø 42 mm 1.65"	Ø 51 mm 2"	
<b>SPINDLE</b>			
Hole through spindle	Ø 61 mm 2.4"		
Hole through draw tube	Ø 52 mm 2.04"		
Spindle nose	A2-5		
Spindle bearing diameter ( front )	Ø 120 mm 4.72"		
Max. spindle speed	5,000 rpm		
Spindle torque ( cont. / 30 min. / 25% )	61 / 69 / 86 Nm 45 / 50.8 / 63.4 lb-ft		
Spindle motor ( cont. / 30 min. / 25% )	11 / 15 / 18.5 kW 15 / 20 / 25 HP		
<b>SUB-SPINDLE</b>			
Chuck size	CL42	CL52	5"
Hole through spindle	Ø 43 mm 1.69"		
Spindle nose	Ø 140 mm 5.5"	Ø 170 mm 6.69"	Ø 110 mm 4.33"
Spindle bearing diameter	Ø 90 mm 3.54"		
Max. spindle speed	6,000 rpm		
Spindle torque ( cont. / 15 min. / 25% )	15 / 20 / 22 Nm 11 / 14.7 / 16.2 lb-ft		
Spindle motor ( cont. / 30 min. / 25% )	3.7 / 5.5 / 5.5 kW 5 / 7.3 / 7.3 HP		
<b>X / Z AXES</b>			
X <sub>1</sub> / X <sub>2</sub> axes travel	180 / 310 mm 7.08" / 12.2"		
Z <sub>1</sub> / Z <sub>2</sub> axes travel	268 / 550 mm 10.55" / 21.6"		
X <sub>1</sub> / X <sub>2</sub> axes servo motor ( cont. )	1.2 kW 1.6 HP		
Z <sub>1</sub> / Z <sub>2</sub> axes servo motor ( cont. )	1.2 kW 1.6 HP		
X <sub>1</sub> / X <sub>2</sub> axes rapids	18 / 24 m/min. 708 / 945 IPM		
Z <sub>1</sub> / Z <sub>2</sub> axes rapids	30 m/min. 1,181 IPM		
X <sub>1</sub> / X <sub>2</sub> axes ball screw Ø × Pitch	Ø 32 mm 1.25" × Pitch 10 / Ø 36 mm 1.41" × Pitch 8		
Z <sub>1</sub> / Z <sub>2</sub> axes ball screw Ø × Pitch	Ø 32 mm 1.25" × Pitch10		
<b>LIVE TOOLING TURRET</b>			
Stations	12		
Turret disk diameter	Ø 310 mm 12.2"		
Live tooling drive motor	2.5 kW 3.3 HP		
O.D. tool shank size	□ 20 mm 3/4"		
I.D. tool shank size	Ø 25 mm 1"		
Live tooling shank size	ER 25 ( Ø 16 mm ) 0.62"		
Max. live tooling RPM	4,000 rpm		

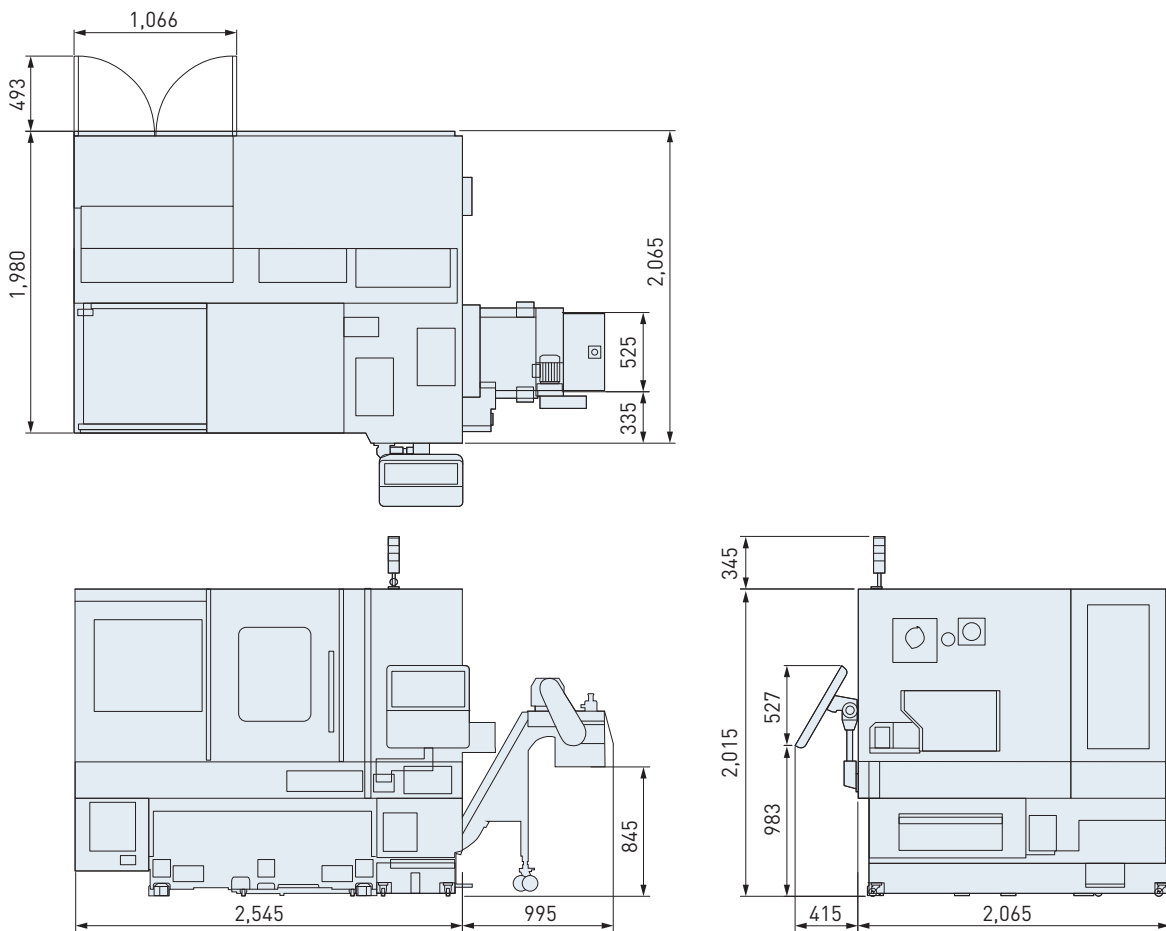
■ : Metric ■ : Inch

**GTW-1500Y**

Y-AXIS	
Y <sub>1</sub> / Y <sub>2</sub> axes travel	± 35 / 250 mm ± 1.37" / 9.84"
Y <sub>1</sub> / Y <sub>2</sub> axes servo motor ( cont. )	1.4 / 0.75 kW 1.8 / 1 HP
Y <sub>1</sub> / Y <sub>2</sub> axes rapids	20 / 24 m/min. 788 / 945 IPM
Y <sub>1</sub> / Y <sub>2</sub> axes ball screw Ø × Pitch	Ø 32 mm 1.25" × Pitch 6 / Ø 28 mm 1.1" × Pitch 6
GANG TOOLING SYSTEM	
Stations	8
Live tools	ER20
Max. live tooling RPM	6,000 rpm
GENERAL	
Positioning accuracy ( X / Y / Z )	0.01 mm 0.00039"
Repeatability ( X / Y / Z )	± 0.003 mm ± 0.00011"
NC controller	G.LINC 350 ( FANUC 32i )
Coolant tank capacity	240 L 63 gal
Machine weight	4,000 kg 8,800 lb
Dimensions ( L × W × H )	2,545 × 2,065 × 2,015 mm 101" × 82" × 80"

Specifications are subject to change without notice.

**Machine Layout**



Unit : mm



GOODWAYCNC.com

## GOODWAY MACHINE CORP.

### HEADQUARTERS

No.13, 5<sup>th</sup> Road,  
Taichung Industrial Park,  
Taichung City, 407, Taiwan  
E-mail : [goodway@goodwaycnc.com](mailto:goodway@goodwaycnc.com)

### CENTRAL TAIWAN SCIENCE PARK BRANCH

No. 38, Keyuan Road,  
Central Taiwan Science Park.Taichung,  
Taichung City, 407, Taiwan  
TEL : + 886-4-2463-6000  
FAX : + 886-4-2463-9600

### GOODWAY MACHINE ( WUJIANG ) CO.,LTD

No. 4888, East Lake Taihu Avenue, Wujiang  
Economic and Technological Development Zone,  
Jiangsu, China  
Sales Hot line : + 86-512-8286-8680  
Service Hotline : + 86-512-8286-8066  
FAX : + 86-512-8286-8620  
E-mail : [goodway@goodwaycnc.cn](mailto:goodway@goodwaycnc.cn)