

# GTS SERIES

MULTI-TURRET CNC TURNING CENTERS



THE ULTIMATE MACHINING POWER  
**WOODWAY**®

# GTS series

## TWIN SPINDLES · TWIN TURRETS

DELICATE MACHINE SIZE

EXTREME CUTTING CAPACITY

A FULL RANGE AUTOMATIC SYSTEM

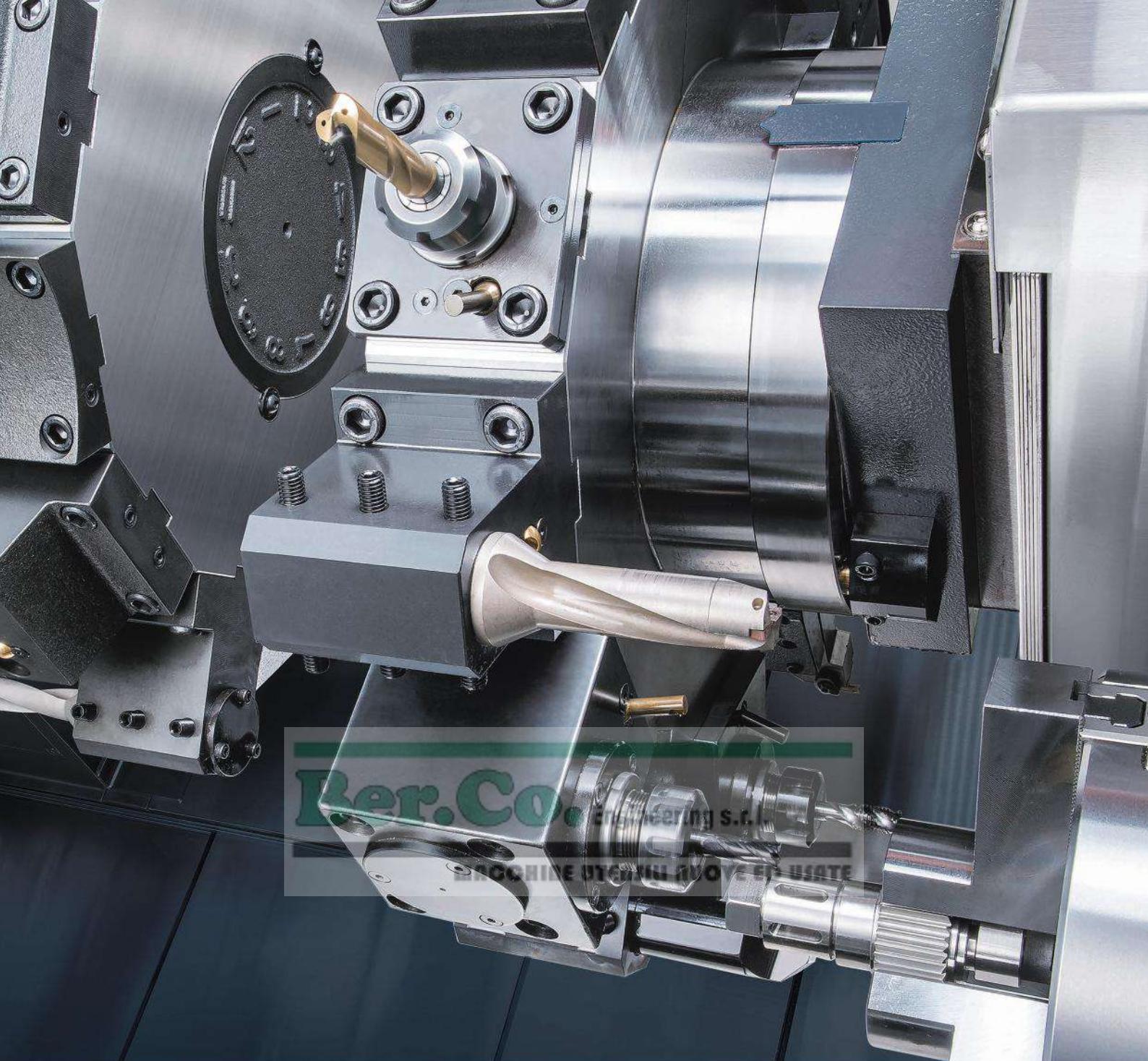
GTS evolved into impeccable performance and reliability by long-term customers' experience and feedback



### GTS series line-up

	Left	Right	6" Chuck	8" Chuck	10" Chuck
Twin Spindles	Turret	Turret	GTS-150X	GTS-200X	GTS-260X
	Live Tooling Turret	Turret	GTS-150MX	GTS-200MX	GTS-260MX
	Live Tooling Turret	Live Tooling Turret	GTS-150MMX	GTS-200MMX	GTS-260MMX
	Y-axis	Y-axis	GTS-150XY	GTS-200XY	GTS-260XY

( Y-axis function should options live tooling turret necessary )

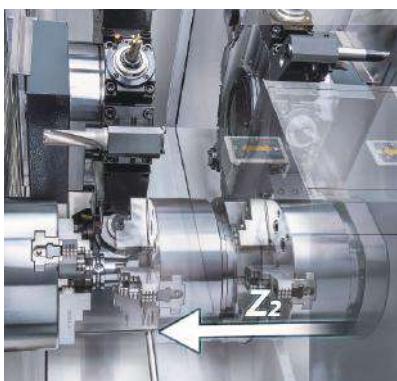
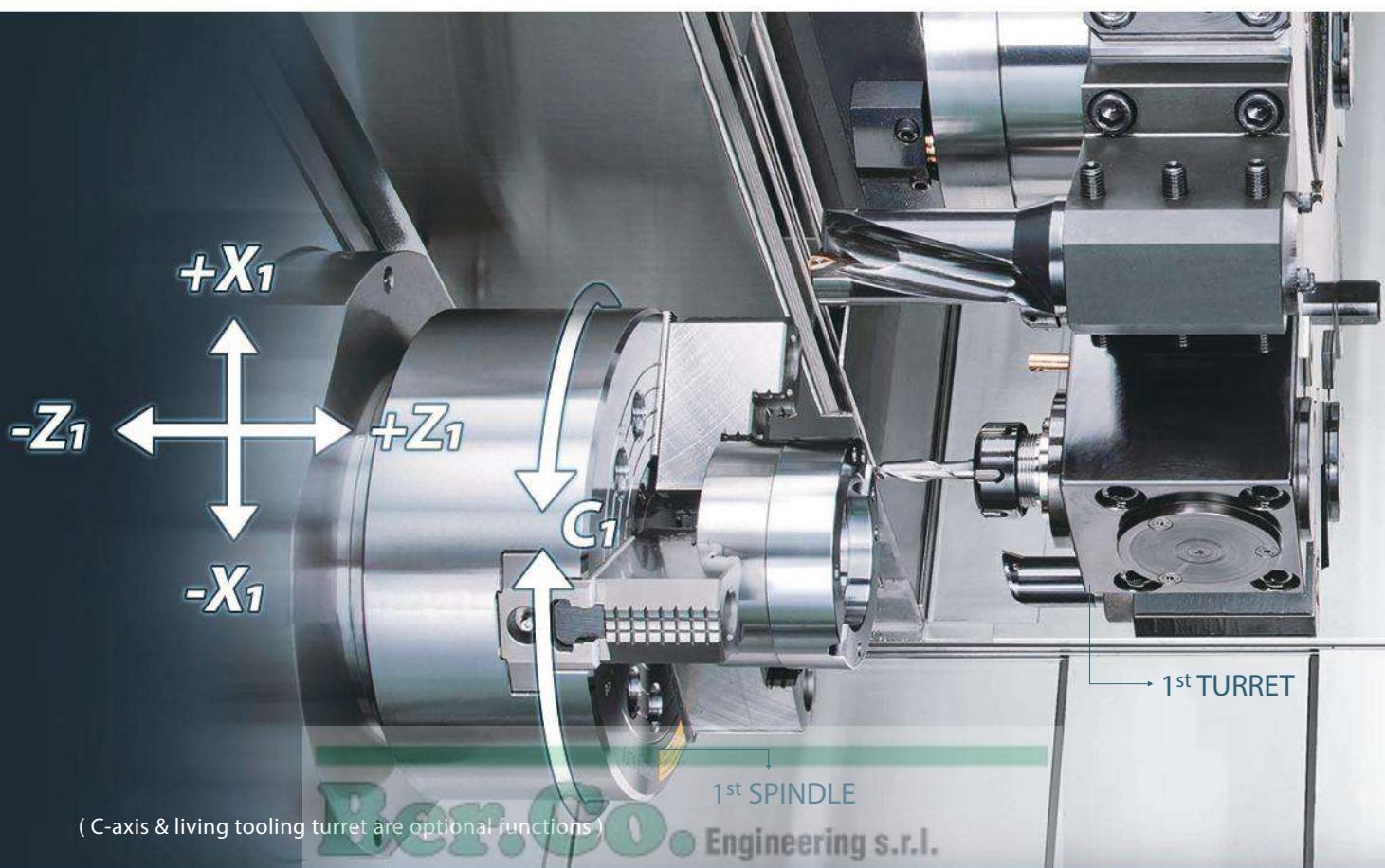


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MACHINING SYSTEMS

Complicated machining operation of front & rear side can be done by one GTS series .



# EXTREME MACHINING PERFORMANCE



### 2<sup>nd</sup> Spindle Catches Parts Automatically

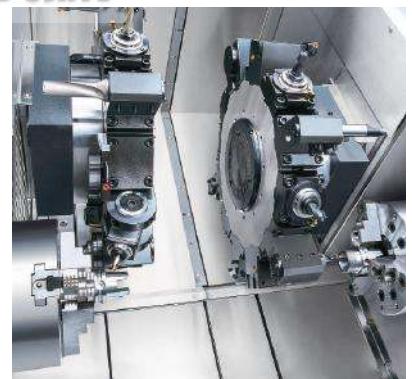
2<sup>nd</sup> spindle catches parts from 1<sup>st</sup> spindle and automatically machining rear side to avoid the error of movement manually by the operator.

### MACCHINE UTENSILI NUOVE ED USATE



### Twin Spindles Simultaneous Cutting

By clamping two ends of the long bar on each spindle and rotate synchronous to avoid the run out of rotating by single side clamping.



### Front / Rear Side Synchronous Cutting

The 1<sup>st</sup> and 2<sup>nd</sup> spindle synchronous cutting makes GTS series functional as two multi-tasking machines.

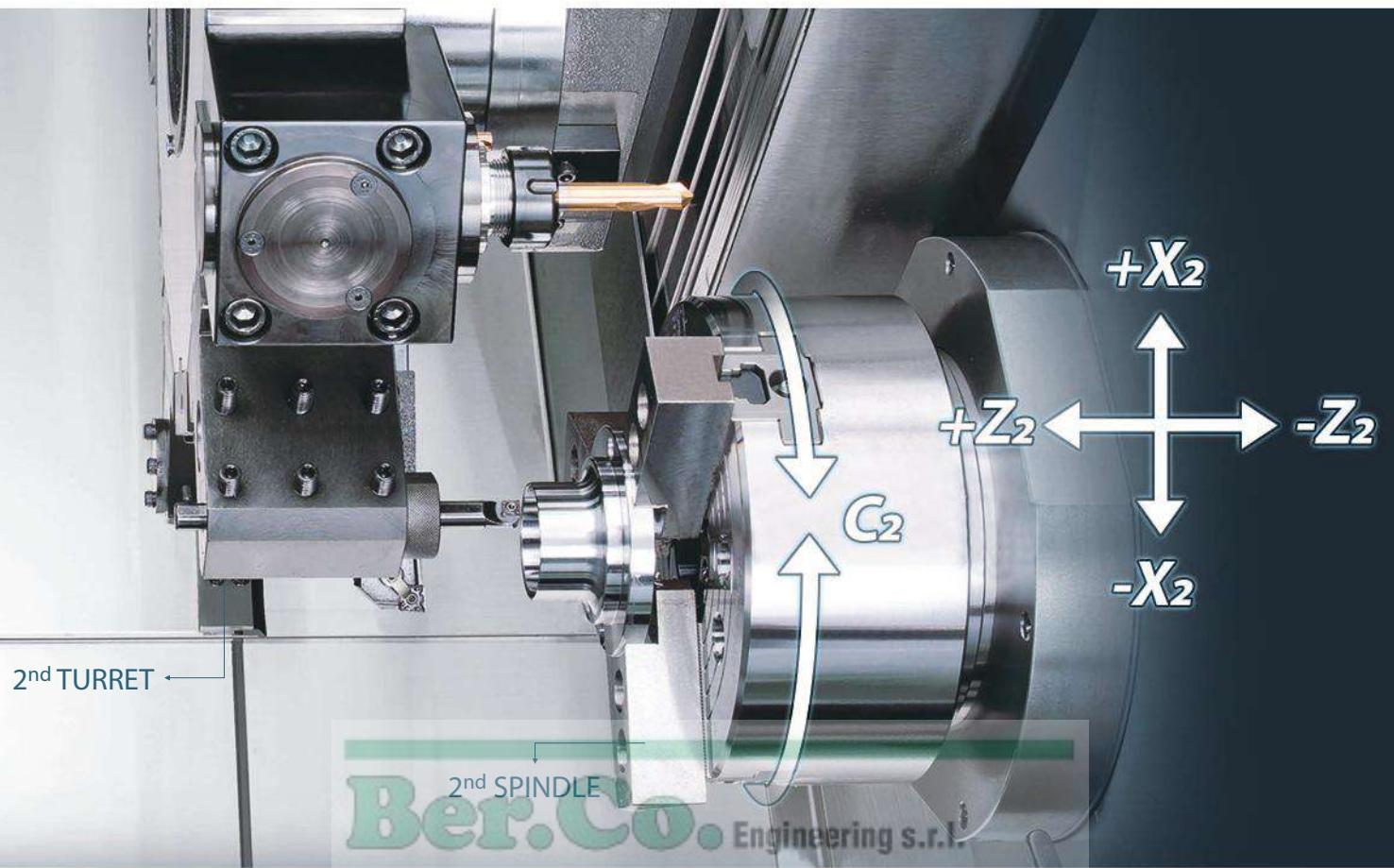
Traditional machining process



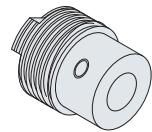
**V.S**

GTS series with  
auto loading / unloading system



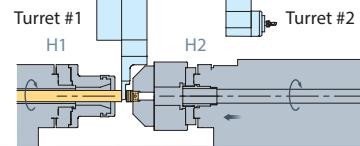


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**Small Parts**

With optional bar feeder

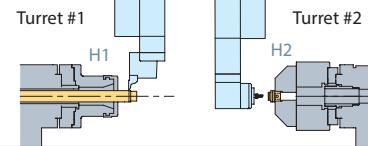


**H1 Cut-off**

Synchronization cut-off

**H2 Workpiece Support**

Spindle stop → H2 advance with chuck open  
→ Chuck close → Synchronization cut-off  
→ H2 retract after cut-off



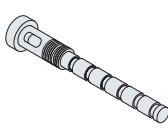
**H1 Load Bar**

Spindle stop → Collect chuck open →  
Load Bar → Collect chuck close →  
Spindle run → O.D. and Thread machining



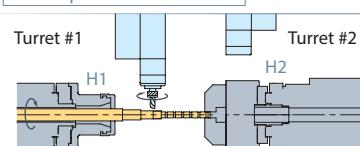
**H2 Turn / Mill Operation**

Turning / drilling → Milling  
→ Eject to parts catcher



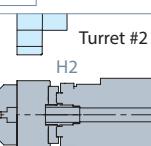
**Long Parts**

With optional bar feeder



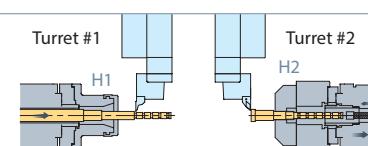
**H1 Drilling**

C-axis brake → Drilling  
→ Cut-off workpiece



**H2 Workpiece Support**

Chuck hold workpiece



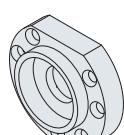
**H1 Load Bar**

Collect chuck open → Load Bar  
→ Collect chuck close →  
O.D. and Thread machining

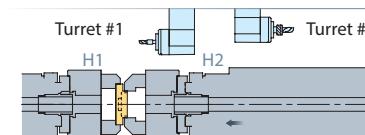


**H2 Turn / Mill Operation**

End face and O.D. machining  
→ Finished

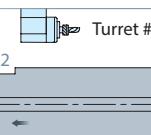


**Casting /  
Forge Parts**



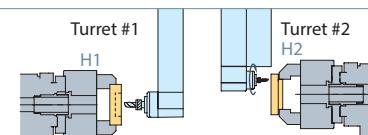
**H1 Workpiece Support**

Workpiece finished in H1 →  
Spindle stop / chuck open →  
Load new workpiece / chuck close



**H2 Workpiece Support**

Spindle stop →  
H2 advance with chuck open →  
H2 retract after cut-off



**H1 Turn operation**

Synchronization →  
O.D. machining →  
Bore machining



**H2 Turn / Drill Operation**

END face and O.D. machining →  
Drilling → Finished

# MULTI-TURRET CNC TURNING CENTERS

- ▶ Opposite twin turrets design on GTS, the 2<sup>nd</sup> spindle can move directly through Z2 guide way to 1<sup>st</sup> spindle to catch the parts which saves the floor space and the cost buying robot arm to flip the workpiece.
- ▶ Compare to single turret type of machine can work one side machining only, the twin turrets design separately for OP1 and OP2 with different operation performs higher efficiency.
- ▶ Compound function of optional live tooling turret, C-axis and Y-axis enable GTS series with the extreme cutting ability of 8 axes control and 4 axes simultaneously machining.



GTS-200MMX model shown with optional accessories.



## Compact Machine Size

Machine dimensions ( W x D )

GTS-150 : 3,135 x 1,700 mm

GTS-200 : 3,900 x 1,940 mm

GTS-260 : 3,900 x 1,940 mm



## Plenty of Space For Operator

Door Full opened width.

GTS-150 : 820 / 805 mm ( T12 / T6 )<sup>\*1</sup>

GTS-200 : 1,065 mm

GTS-260 : 1,065 mm



## Convenient Working Distance

Distance from the center of spindle to door guarding.

GTS-150 : 459 mm

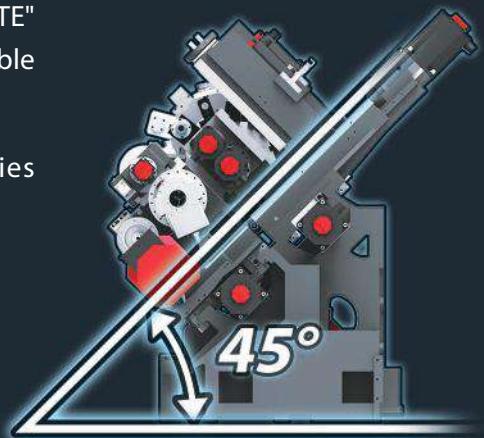
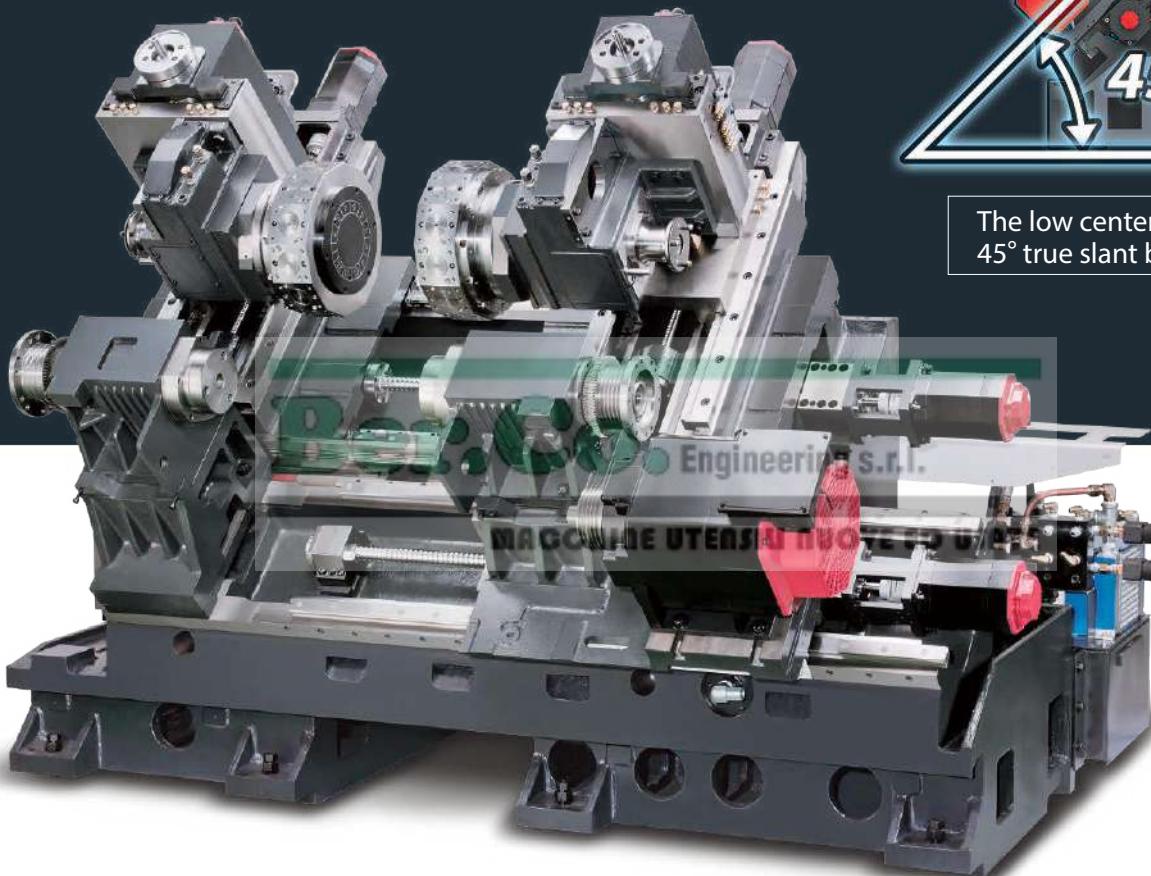
GTS-200 : 394 mm

GTS-260 : 394 mm

<sup>\*1</sup> : Please see page 7 for detail of turret type

# SUPER RIGID STRUCTURE

- The Finite Element Methods ( FEM ) provides optimal machine design and light-weight structure advantage while ensuring super rigid of machine.
- High rigidity machine bed are built by one-piece casting of "MEEHANITE" and the 45° slant bed design provides the most rigid foundation possible for the headstock and turret.
- All spindles and servo motors, including drives, are Fanuc  $\alpha$  i series components to ensure peak machining performance and accuracy.



## High Speed Linear Guide Ways

GTS-150 series

Linear guide ways design can provide optimal motion and efficiency to meet the high speed high precision working condition on GTS-150 series.

( Box ways design on X / Y axes for "Y" models )



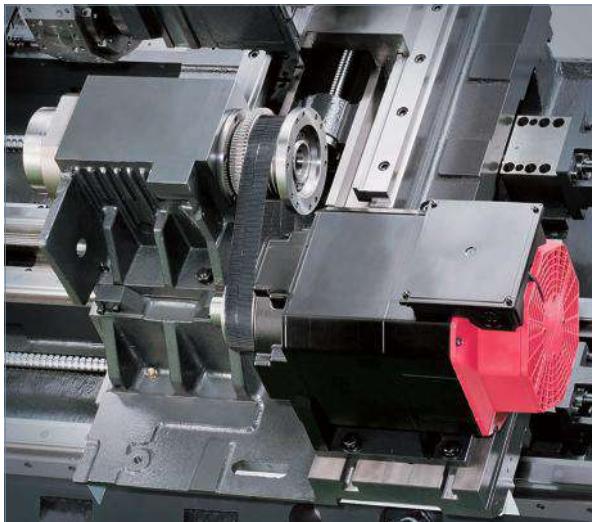
## Super Rigid Box Ways

GTS-200 series  
GTS-260 series

High rigidity box ways design which is through heat treatment and precise finishing processes meet the need of GTS-200 / GTS-260 series for heavy cutting and interrupted turning.



# ULTIMATE TURNING POWER

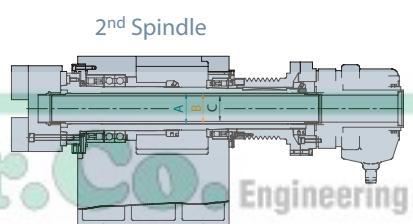
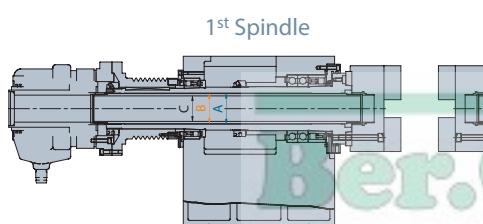


P4 grade high precision bearings are directly assembled for maximum level of support. Bearing configuration is designed for super heavy-duty cutting and long term durability with a higher level of accuracy.

Generating twice the torque output of standard motors, the standard wide-range spindle motor is designed to reach full output at 1/2 the RPM of standard motors, providing the ability to take heavier cuts in the lower RPM ranges.

## Spindle Dimensions Drawing

A : Hole through spindle    B : Draw tube OD.    C : Draw tube ID.



	A	B	C
GTS-150	61	50	43
GTS-200	66	65	52
GTS-260	76	75	66

Unit : mm

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## LIVE TOOLING TURRET & C-AXIS

Option

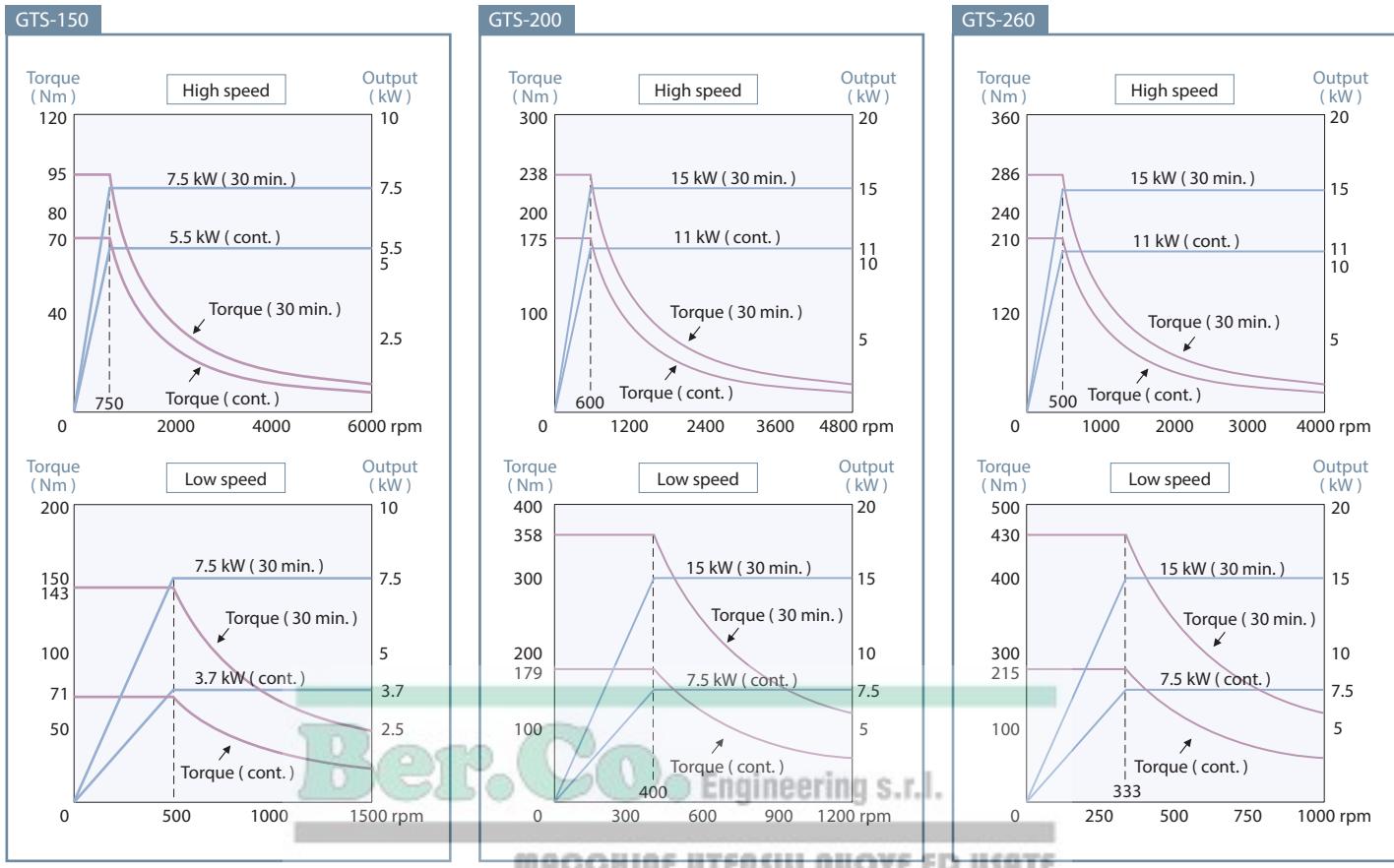
### GOODWAY's Live Tooling Turret

Servo drive live tooling turret with high precision curvilinear coupling tool indexing system provides quick tool change and indexing time. And make sure the rigidity of turret in any machining conditions.

Turret type	T12	T6
Stations	12	
Live tooling stations	12	6
Tool drive	Live tooling tools rotate in working position only	Live tooling tools rotate at the same time

GTS series with optional GOODWAY T12 or T6 live tooling turret of different performance can easily meet your machining needs.

## Spindle Output



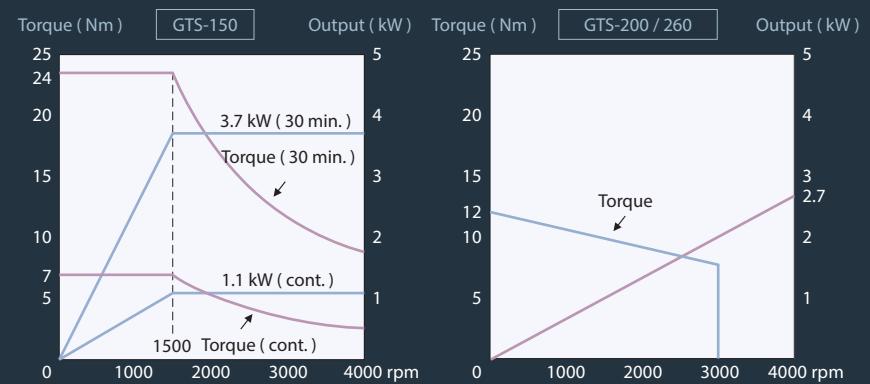
## Ultimate C-axis Spindle

C-axis adopts super rigid Cf-axis with disk brake system, and with the FANUC servo motor generating 240 Nm ( cont. ) of torque it offers excellent surface finishes and accuracy. Plus, dynamic accuracy is within  $\pm 0.02^\circ$  even under heavy cutting condition.

Models	C-axis Output
GTS-150	120 Nm
GTS-200 / 260	240 Nm

### Live Tooling Output

T12 type live tooling turret



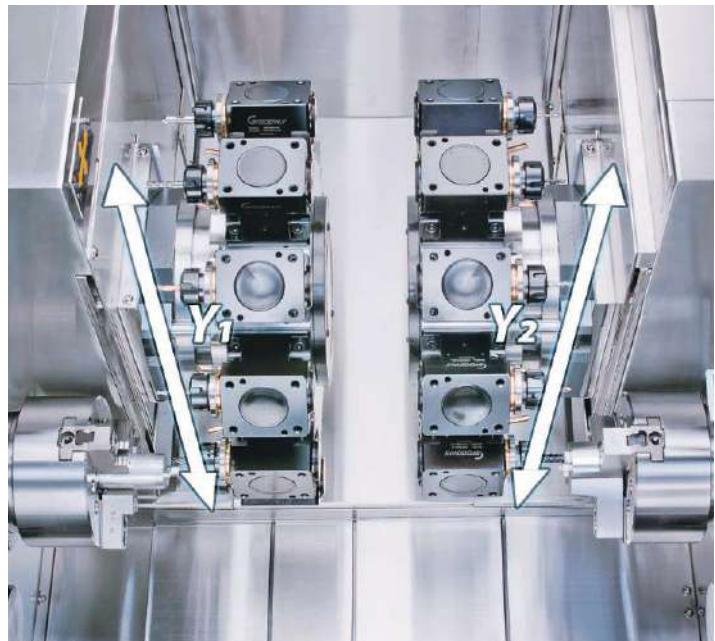
( Please contact with GOODWAY for T6 type live tooling turret output diagram )

# TWIN Y AXES CONTROL FUNCTION

Option

The optional Y-axis control can achieve X, Y, Z and C axes simultaneously machining, which allows the series can work on Y-axis off center milling, drilling and tapping as well as improving the machining accuracy from a regular 3 axes simultaneously machining processes under certain condition.

Models	Y-axis Travel
GTS-150	60 ( ±30 ) mm
GTS-200	120 ( ±60 ) mm
GTS-260	120 ( ±60 ) mm



## Low Center of Gravity with Orthogonal Design

Orthogonal design of Y & X axes saddle to keep the center of gravity of turret lay on the proper range of slide on the base to make sure the overall structural rigidity.

# AUTOMATIC PRODUCTION SYSTEM

Option

Optional automation accessories can greatly enlarge the capability for mass production. From workpiece loading, front / rear cutting, accuracy check and workpiece unloading can be done in one machine. It saves manpower and non-cutting time.

GTS-150XY with auto.  
loading / unloading system



## Unique Y-axis Machining Capability



## High Precision Y-axis Machining Capability

Polar coordinate interpolation V.S Y-axis control	O.D. Troughing
<p>The diagram illustrates the difference between two machining methods. On the left, a circular workpiece is shown with a contour being machined. A spindle center is indicated at the center of the circle. Two points on the contour are labeled X(-) and X(+). Arrows show the tool's path as it follows the contour, with one arrow pointing clockwise and another pointing counter-clockwise, indicating a reversal of direction. This is labeled 'Polar coordinate interpolation'. On the right, a similar setup is shown but with a straight line contour instead of a circle. This is labeled 'Y-axis control'.</p> <ul style="list-style-type: none"> <li>▶ The polar coordinate interpolation can work on troughing or contouring. X-axis reverses at cross point of the center point of workpiece and contour, which makes tool not able to be completely contouring and remains worse accuracy.</li> <li>▶ With Y-axis control, it can avoid the situation above and remain better accuracy.</li> </ul>	<p>The diagram shows a vertical workpiece being machined by a horizontal end mill. An inset shows a cross-section of the machined part, which has a non-uniform width at the top and bottom, indicating lack of parallelism.</p> <ul style="list-style-type: none"> <li>▶ Without featuring Y-axis, width of troughs are not perfectly parallel with worse accuracy.</li> </ul> <p>The same setup as above, but now featuring a Y-axis. The inset shows a cross-section where the machined part has a uniform width, indicating perfect parallelism.</p> <ul style="list-style-type: none"> <li>▶ Featuring Y-axis, width of trough remains parallel with better accuracy.</li> </ul>



Bar Feeder



Parts Catcher



Parts Collecting Box



Parts Conveyor



Workpiece Inspection Probe



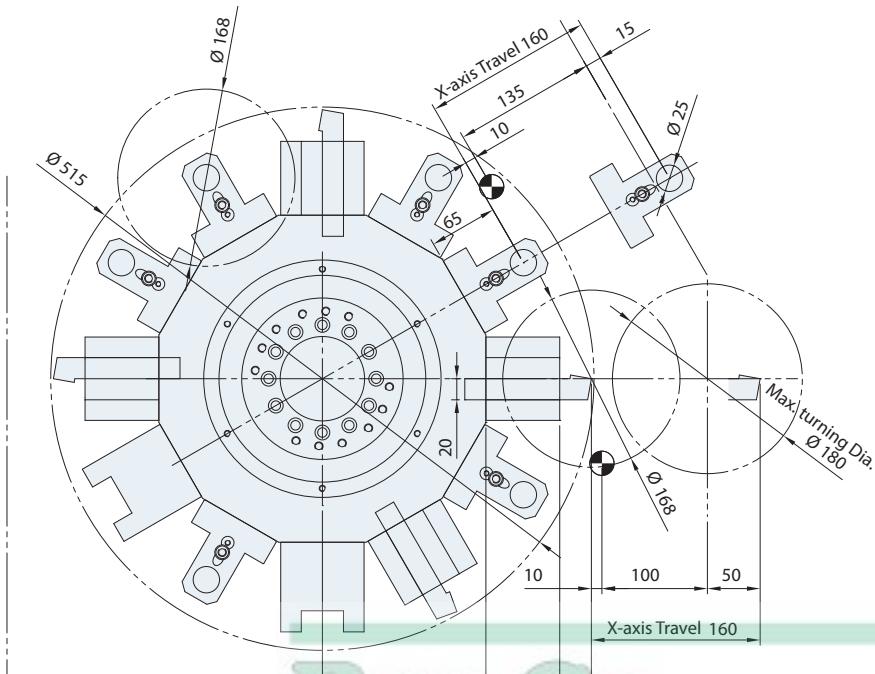
Tool Presetter

# GENERAL DIMENSION

## Interference Diagram

Standard turret

GTS-150X



## Tooling System

O.D. Tools	Clamp Block	Face Tool Holder
CX-4227	CX-42A7	
O.D. Tools	Clamp Gib	O.D. Tool Holder
CX-4226	CX-42A6	
Cut-off Tool		Cut-off Tool Holder (opt.)
		CX-4228
		CX-42A8
Cut-off Blade	Clamp Block	Cut-off Tool Holder
		CX-4229
Drill	Sleeve	I.D. Tool Holder
I.D. Tools	Sleeve	CX-4225
Drill	Sleeve	CX-42A5
Drill	Insert Drill	

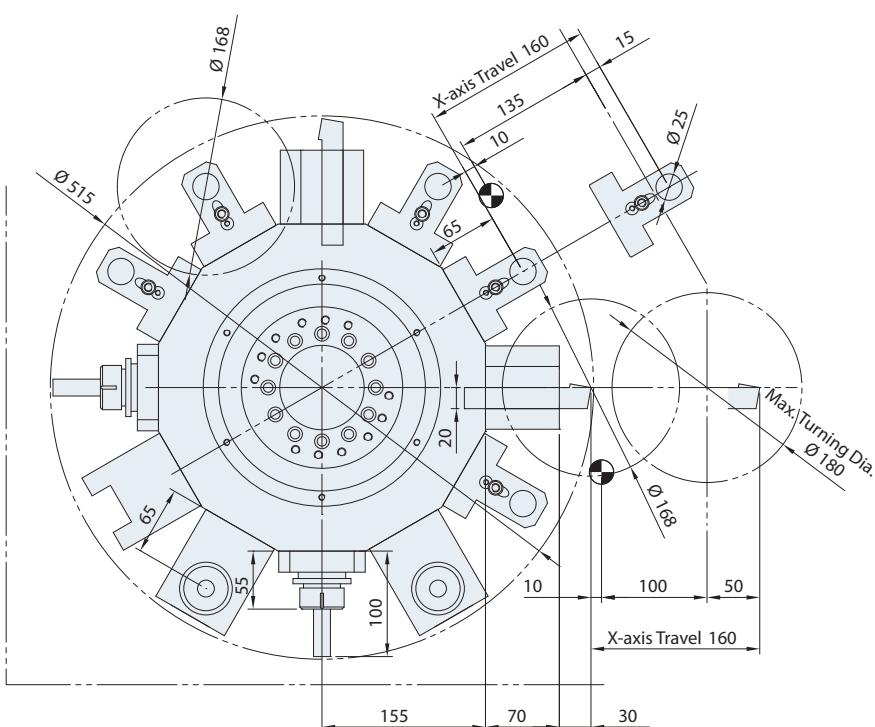
BerCo Engineering s.r.l.

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T12 type live tooling turret

GTS-150MMX

( Specification of T6 type live tooling turret, please contact with GOODWAY for more information )



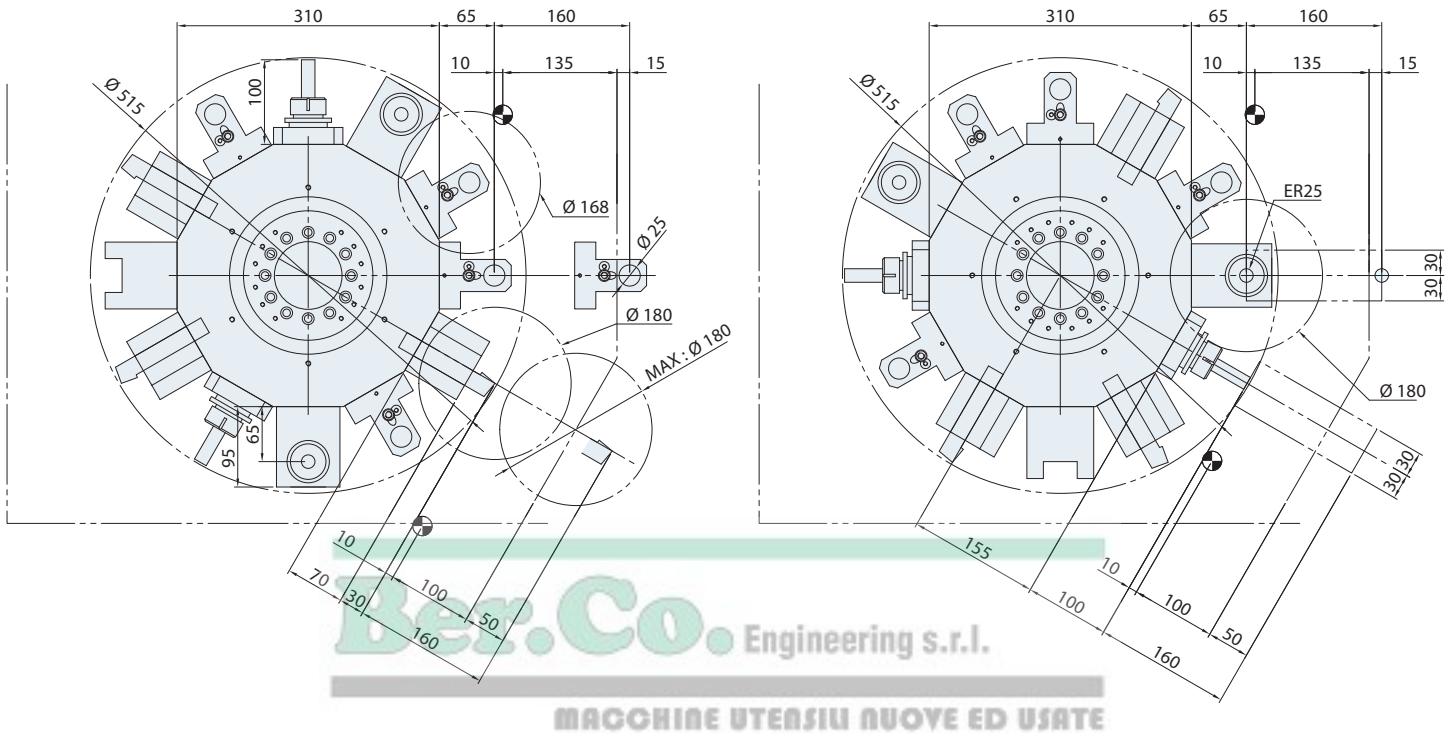
O.D. Tools	Clamp Block	Face Tool Holder
CX-4227	CX-42A7	
O.D. Tools	Clamp Gib	O.D. Tool Holder
CX-4226	CX-42A6	
Cut-off Tool		Cut-off Tool Holder (opt.)
		CX-4228
		CX-42A8
Cut-off Blade	Clamp Block	Cut-off Tool Holder
		CX-4229
Drill	Sleeve	I.D. Tool Holder
I.D. Tools	Sleeve	CX-4225
Drill	Sleeve	CX-42A5
Drill	Insert Drill	
90° Live Tool Holder	ER Collet	CY-3783
0° Live Tool Holder		CY-3782

## Interference Diagram

T12 type live tooling turret & Y-axis    GTS-150XY

► I.D. / O.D. Tool

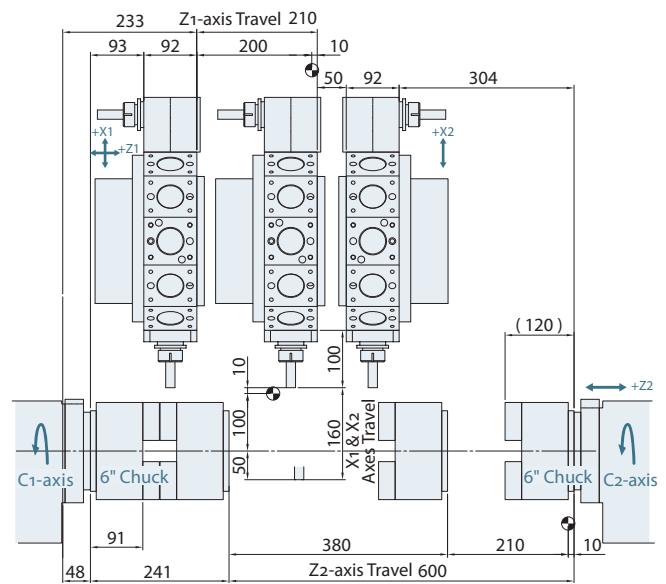
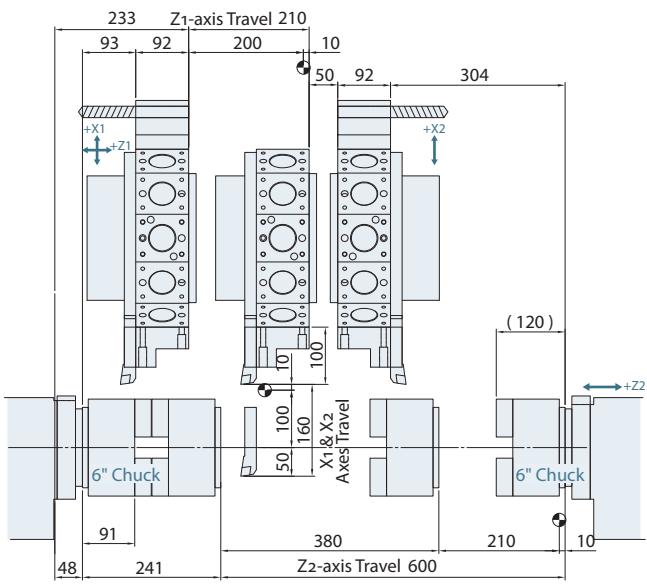
► Live Tool



## Work Range

Standard turret    GTS-150X

T12 type live tooling turret    GTS-150MMX / GTS-150XY

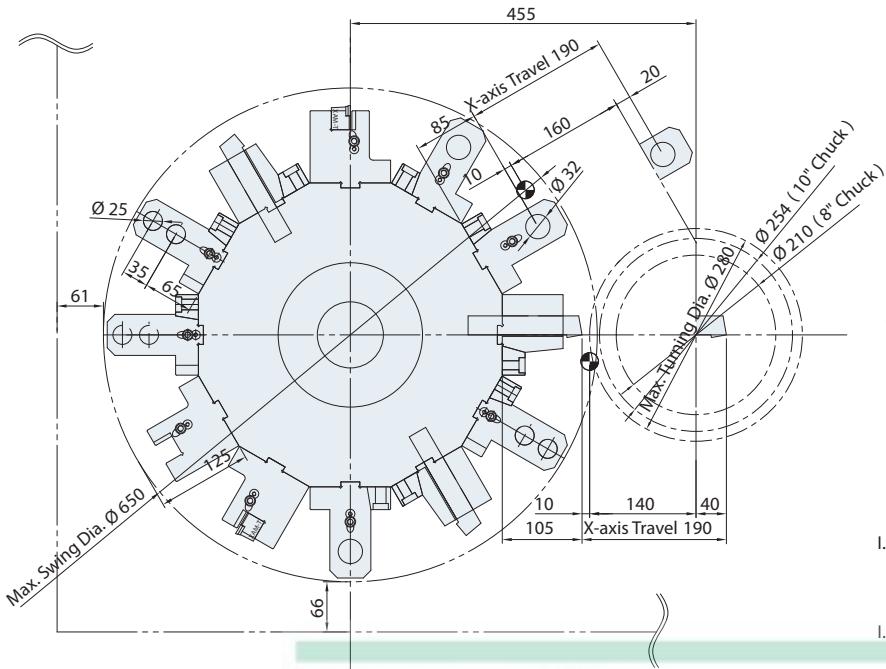


Unit : mm

## Interference Diagram

## Tooling System

Standard turret GTS-200X / GTS-260X

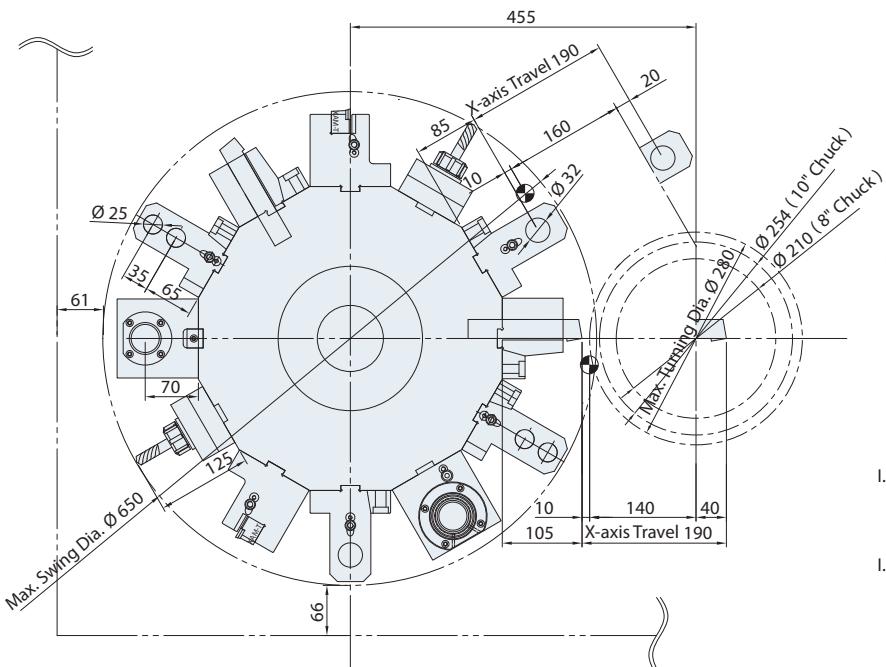


O.D. Tools	Face Tool Holder CB-4796 CB-47A6
O.D. Tools	O.D. Tool Holder CB-4795 CB-47A5
O.D. Tools	Clamp Block CB-4795A CB-47A7
O.D. Tools	Cut-off Tool Holder CB-4790 CB-47A8
Cut-off Blade	Cut-off Tool Holder CB-4797
I.D. Tools	Sleeve I.D. Tool Holder CB-4793 CB-47A3
I.D. Tools	Sleeve I.D. Tool Holder CB-4794 CB-47A4
I.D. Tools	Sleeve Two-hole I.D. Tool Holder CB-4792 CB-47A2

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T12 type live tooling turret GTS-200MMX / GTS-260MMX

( Specification of T6 type live tooling turret, please contact with GOODWAY for more information )



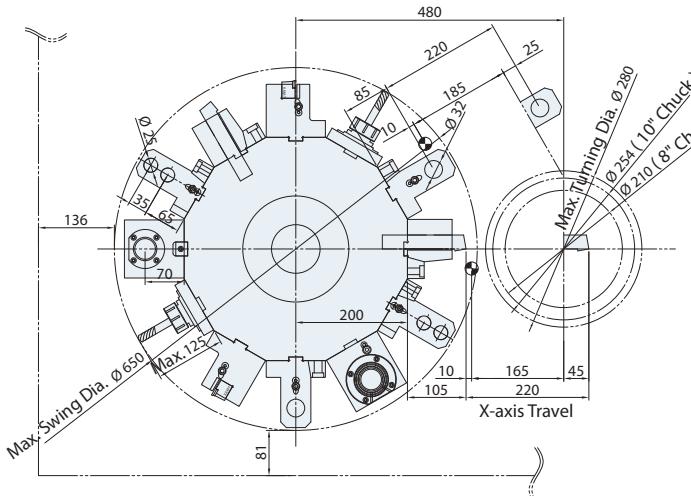
O.D. Tools	Face Tool Holder CB-4796 CB-47A6
O.D. Tools	O.D. Tool Holder CB-4795 CB-47A5
O.D. Tools	Clamp Block CB-4795A CB-47A7
O.D. Tools	Cut-off Tool Holder CB-4790 CB-47A8
Cut-off Blade	Cut-off Tool Holder CB-4797
I.D. Tools	Sleeve I.D. Tool Holder CB-4793 CB-47A3
I.D. Tools	Sleeve I.D. Tool Holder CB-4794 CB-47A4
I.D. Tools	Sleeve Two-hole I.D. Tool Holder CB-4792 CB-47A2
ER Collet	90° Live Tool Holder CB-4783B
ER Collet	0° Live Tool Holder CB-4782B

## Interference Diagram

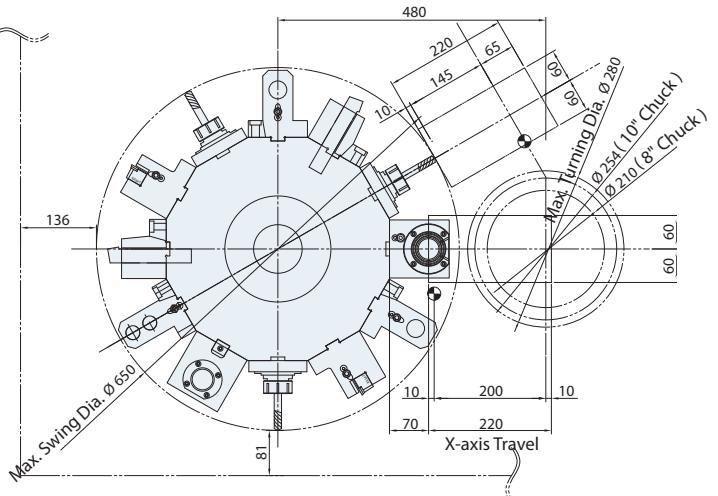
T12 type live tooling turret & Y-axis

GTS-200XY / GTS-260XY

### ► I.D. / O.D. Tool

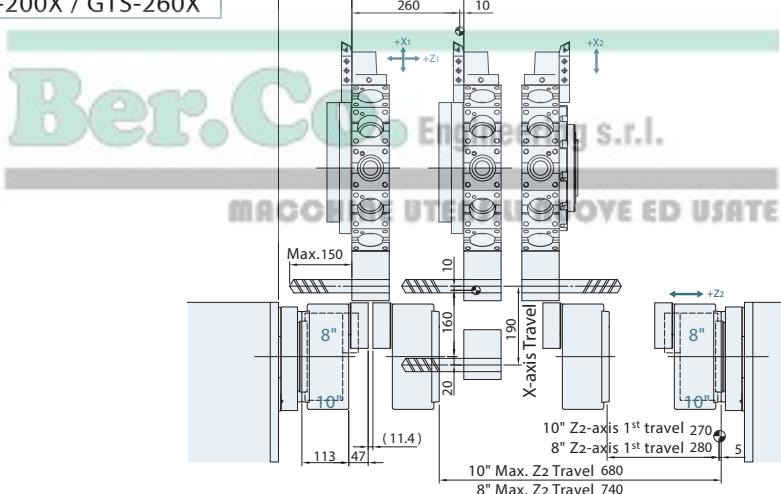


### ► Live Tool

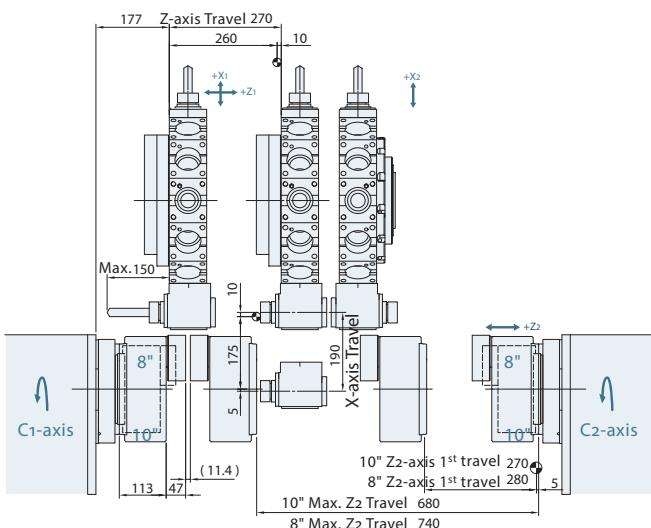


## Work Range

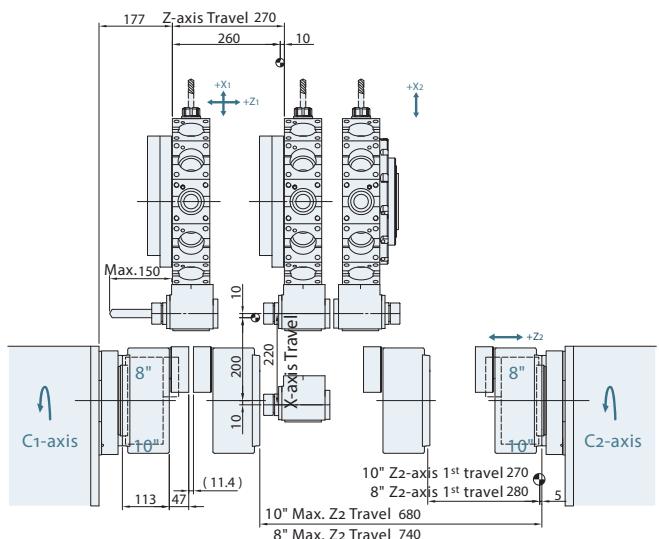
Standard turret GTS-200X / GTS-260X



T12 type live tooling turret GTS-200MMX / GTS-260MMX



T12 type live tooling turret GTS-200XY / GTS-260XY



Unit : mm

# NC INTELLIGENCE G.LINC 350

Option

## Advanced Hardware Combined with Intelligent Software, Makes Your Machine Smarter

- ▶ Advanced hardware
- ▶ Reliable continuous operation
- ▶ Outstanding operability
- ▶ Shortened troubleshooting time
- ▶ Streamlined programming
- ▶ Improved utilization rate
- ▶ High security and shortened machining setting

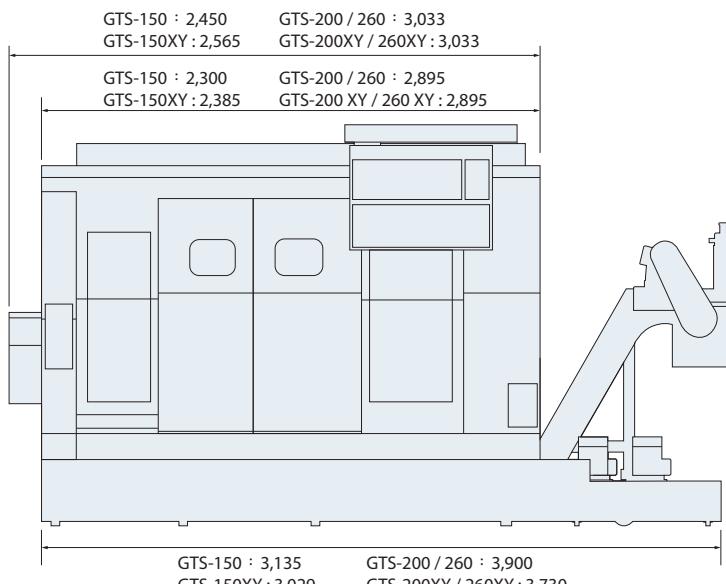


## Comprehensive Functions

Programming	Setting	Test-Run	Actual Production	Daily Used
Program management Friendly programing environment Programming auxiliary Manual Guide <i>i</i> Embedded E-manual	3D advance tool path and cutting simulation	Tool load monitor Program check Smart balance ejection 3D Real-time cutting simulation and interference check	Tool load monitor 3D Real-time cutting simulation and interference check	Safety signal viewer Fast alarm check productivity Productivity management Twin operation system switch Maintenance management



## MACHINE DIMENSIONS



Unit : mm

# STANDARD & OPTIOANL FEATURES

S : Standard      O : Option  
- : Not Available      C : Contact GOODWAY

		GTS-150	GTS-200	GTS-260
<b>1<sup>st</sup> &amp; 2<sup>nd</sup> SPINDLE</b>				
Main spindle motor configuration	Belt driven	S	S	S
Rigid tapping & spindle orientation		S	S	S
Spindle disk brake	O	O	O	
Cf-axis & spindle disk brake*1	O	O	O	
<b>WORK HOLDING</b>				
Hydraulic hollow cylinder for chuck	6"	S	-	-
	8"	-	S	-
	10"	-	-	S
Hydraulic hollow 3-jaw chuck	6"	S	-	-
	8"	-	S	-
	10"	-	-	S
Hard jaws		O	O	O
Collet chuck		O	O	O
Special work holding chuck		C	C	C
In spindle work stopper		O	O	O
Spindle liner ( guide bushing )		O	O	O
Foot switch for chuck operation		S	S	S
<b>1<sup>st</sup> &amp; 2<sup>nd</sup> TURRET</b>				
12-station turret		S	S	S
12-station live tooling turret ( Goodway T12 type or T6 type )		O	O	O
Tool holder & sleeve package		S	S	S
Live tooling tool holders ( 0°x2, 90°x2 )*1		O	O	O
<b>MEASUREMENT</b>				
RENISHAW HPRA tool presetter		O	O	O
<b>COOLANT</b>				
Coolant pump	3 kg/cm <sup>2</sup>	S	S	S
	5 kg/cm <sup>2</sup>	O	O	O
	10 kg/cm <sup>2</sup>	O	O	O
High-pressure coolant system	20 kg/cm <sup>2</sup>	C	C	C
Roll-out coolant tank		S	S	S
Oil skimmer		O	O	O
Coolant flow switch		O	O	O
Coolant level switch		O	O	O
Coolant intercooler system		O	O	O
<b>CHIP DISPOSAL</b>				
Chip conveyor with auto timer	Right discharge	S	S	S
	Rear discharge	C	C	C
Chip cart with coolant drain		O	O	O
Chuck air blow		O	O	O
Coolant gun		O	O	O
Oil mist collector		O	O	O
<b>AUTOMATIC OPERATION SUPPORT</b>				
Parts catcher		O	O	O
Work-piece transport conveyor		O	O	O
Bar feeder		O	O	O
Bar feeder interface		O	O	O
Gantry-type loader / unloader		O	O	O
Auto door		O	O	O
Extra M-code output	4 sets ( 8 )	O	O	O
	8 sets ( 16 )	O	O	O
<b>SAFETY</b>				
Fully enclosed guarding		S	S	S
Door interlock ( incl. Mechanical lock )		S	S	S
Impact resistant viewing window		S	S	S
Chuck cylinder stroke out-end check		S	S	S
Chuck cylinder check valve		S	S	S
Low hydraulic pressure detection switch		S	S	S
Over travel ( soft limit )		S	S	S
Load monitoring function*2		O	O	O

\*1 Available for live tooling turret or Y-axis model.

\*2 Available for Oi -TF controller.

\*3 10.4" color LCD option needed.

	GTS-150	GTS-200	GTS-260
<b>OTHERS</b>			
Tri-color operation status light tower	S	S	S
Florescent work light	S	S	S
External work light	O	O	O
Electrical cabinet	Heat exchanger	S	S
	A/C cooling system	O	O
Complete hydraulic system		S	S
Advanced auto lubrication system		S	S
Emergency maintenance electrical part package		S	S
Operation & maintenance manuals		S	S
<b>FANUC CONTROL FUNCTIONS</b>			
Display	10.4" color LCD	S	S
Graphic function	Standard	S	S
	Dynamic	O	O
Part program storage size	512K bytes	S	-
	1M bytes	-	S
	2M bytes	O	O
	4M bytes	-	O
	8M bytes	-	O
	400	S	-
Registerable programs	1,000	O	S
	4,000	-	O
	99	-	S
	128	S	-
	200	O	O
Tool offset pairs	400	-	O
	499	-	O
	999	-	O
	2000	-	O
	HRV 3	S	S
Servo HRV control		S	S
Automatic data backup		S	S
Synchronous / Composite control		O	O
Inch / metric conversion		S	S
Polar coordinate interpolation		S	S
Cylindrical interpolation		S	S
Multiple repetitive cycle		S	S
Rigid tapping		S	S
Unexpected disturbance torque detection function		S	S
Spindle orientation		S	S
Constant surface speed control		S	S
Spindle speed fluctuation detection		S	S
Embedded macro		O	O
Spindle synchronous control		S	S
Background editing		S	S
Tool radius / Tool nose radius compensation		S	S
Multi-language display		S	S
Cs contouring control		S	S
Polygon turning		S	S
Helical interpolation		O	O
Direct drawing dimension programming		S	S
Thread cutting retract		S	S
Variable lead threading		S	S
Multiple repetitive cycle II		S	S
Canned cycles for drilling		S	S
Tool nose radius compensation		S	S
Chamfering / Corner R		S	S
AI contour control I		O	S
Multi part program editing*3		S	S
Manual handle retrace		O	O
Manual intervention and return		S	O
External data input		S	S
Addition of custom macro		S	S
Increment system C		S	S
Run hour & parts counter		S	S
Auto power-off function		S	S
RS-232 port		S	S
Memory card input / output ( CF + USB )		S	S
Ethernet		S	S

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# MACHINE SPECIFICATIONS

CAPACITY	GTS-150	GTS-200	GTS-260
Max.swing diameter	Ø 180 mm <b>7.08"</b>	Ø 280 mm <b>11.02"</b>	Ø 280 mm <b>11.02"</b>
Swing over saddle ( door )	Ø 180 mm <b>7.08"</b>	Ø 280 mm <b>11.02"</b>	Ø 280 mm <b>11.02"</b>
Max. turning diameter	Ø 180 mm <b>7.08"</b>	Ø 280 mm <b>11.02"</b>	Ø 280 mm <b>11.02"</b>
Standard turning diameter	Ø 170 mm <b>6.69"</b>	Ø 210 mm <b>8.26"</b>	Ø 210 mm <b>8.26"</b>
Max. turning length	180 mm <b>7.08"</b>	200 mm <b>7.87"</b>	200 mm <b>7.87"</b>
Hydraulic chuck	6"	8"	10"
Bar capacity	Ø 42 mm <b>1.65"</b>	Ø 51mm <b>2"</b>	Ø 65 mm <b>2.55"</b>
1 <sup>st</sup> & 2 <sup>nd</sup> SPINDLE			
Hole through spindle	Ø 51 mm <b>2"</b>	Ø 66 mm <b>2.598"</b>	Ø 76 mm <b>2.99"</b>
Spindle bearing diameter	Ø 80 mm <b>3.14"</b>	Ø 100 mm <b>3.93"</b>	Ø 120 mm <b>4.72"</b>
Hydraulic cylinder	6"	8"	10"
Spindle nose	A2-5	A2-6	A2-8
Motor output ( cont. / 30 min. )	5.5 / 7.5 kW <b>7.4 / 10 HP</b>	11 / 15 kW <b>15 / 20 HP</b>	11 / 15 kW <b>15 / 20 HP</b>
Motor full output speed		750 rpm	
Spindle drive system		Direct Belt Drive	
Spindle drive ratio	1 : 1	4 : 5	2 : 3
Spindle speed range	6,000 rpm	4,800 rpm	4,000 rpm
Spindle full output speed	750 rpm	600 rpm	500 rpm
C-AXIS ( OPT. )			
Cf-axis drive motor		FANUC AC Servo motor	
Min. spindle indexing angle		± 0.001°	
Dynamic accuracy		± 0.002°	
X / Z AXES			
X-axis travel	160 mm <b>6.29"</b>	190 mm <b>7.48"</b>	190 mm <b>7.48"</b>
Z <sub>1</sub> / Z <sub>2</sub> axes travel	210 / 600 mm <b>8.26" / 23.6"</b>	270 / 740 mm <b>10.6" / 29.1"</b>	270 / 740 mm <b>10.6" / 29.1"</b>
X / Z axes rapids	15 / 36 m/min. <b>590 / 1,417 IPM</b>	20 / 24 m/min. <b>787 / 945 IPM</b>	20 / 24 m/min. <b>787 / 945 IPM</b>
Slide way type	Linear guide way	Box way	Box way
Feed rates		1~ 4,800 mm/min. <b>0.039 ~ 189 IPM</b>	
X-axis servo motor	AC 1.6 kW <b>2 HP</b>	AC 3 kW <b>4 HP</b>	AC 3 kW <b>4 HP</b>
Z-axis servo motor	AC 1.6 kW <b>2 HP</b>	AC 3 kW <b>4 HP</b>	AC 3 kW <b>4 HP</b>
X-axis ball screw Ø / pitch	Ø 32 mm <b>1.25" / Pitch 6</b>	Ø 32 mm <b>1.25" / Pitch 10</b>	Ø 32 mm <b>1.25" / Pitch 10</b>
Z-axis ball screw Ø / pitch	Ø 32 mm <b>1.25" / Pitch 12</b>	Ø 36 mm <b>1.41" / Pitch 10</b>	Ø 36 mm <b>1.41" / Pitch 10</b>
X / Z axes thrust ( cont. )	855 / 427 kgf	769 / 769 kgf	769 / 769 kgf
1 <sup>st</sup> & 2 <sup>nd</sup> TURRET			
Stations		12	
Indexing drive		FANUC AC Servo motor	
Indexing speed		0.2 sec. Adjacent / 0.5 sec. 180 degrees ( Single step )	
Accuracy		Positioning : ± 0.00069°, Repeatability : ± 0.00027°	
O.D. tool shank size	<input type="checkbox"/> 20 mm <b>3/4"</b>	<input type="checkbox"/> 25 mm <b>1"</b>	<input type="checkbox"/> 25 mm <b>1"</b>
I.D. tool shank size	Ø 25 mm <b>1"</b>	Ø 32 mm <b>1-1/4"</b>	Ø 32 mm <b>1-1/4"</b>

LIVE TOOLING TURRET ( OPT. )		GTS-150	GTS-200	GTS-260
Max. turning length		180 mm <b>7.08"</b>	200 mm <b>7.87"</b>	200 mm <b>7.87"</b>
Stations			12	
Live tooling stations	T12	12 ( Live tooling tools rotate in working position only )		
	T6	6 ( Live tooling tools rotate at the same time )		
Live tooling drive motor	T12	1.1 / 3.7 kW <b>1.5 / 5 HP</b> ( cont. / 30 min. )	2.7 kW <b>3.6 HP</b>	2.7 kW <b>3.6 HP</b>
	T6	2.2 / 3.7 kW <b>3 / 5 HP</b>		
Live tooling torque	T12	7 / 23.6 Nm ( cont. ) <b>5.16 / 17.4 lb-ft</b>	12 Nm <b>8.8 lb-ft</b>	12 Nm <b>8.8 lb-ft</b>
	T6	14 / 23.6 kW <b>18.8 / 31.6 HP</b>		
Index speed		0.3 sec. Adjacent / 0.5 sec. 180 degrees ( Single step )		
O.D. tool shank size		<input type="checkbox"/> 20 mm <b>3/4"</b>	<input type="checkbox"/> 25 mm <b>1"</b>	<input type="checkbox"/> 25 mm <b>1"</b>
I.D. tool shank size		Ø 25 mm <b>1"</b>	Ø 32 mm <b>1-1/4"</b>	Ø 32 mm <b>1-1/4"</b>
Live tooling shank size	T12	ER25 ( Ø16 mm ) <b>5/8"</b>	ER32 ( Ø20 mm ) <b>3/4"</b>	ER32 ( Ø20 mm ) <b>3/4"</b>
	T6	ER25 ( Ø16 mm ) <b>5/8"</b>		
Live tooling rpm range		4,000 rpm		
Y-AXIS ( OPT. )				
Max. turning diameter		Ø 180 mm <b>7.08"</b>	Ø 280 mm <b>11.02"</b>	Ø 280 mm <b>11.02"</b>
Max. turning length		180 mm <b>7.08"</b>	200 mm <b>7.87"</b>	200 mm <b>7.87"</b>
Max. Y-axis travel		60 ( ±30 ) mm <b>2.3" ( ±1.1" )</b>	120 ( ±60 ) mm <b>4.7" ( ±2.3" )</b>	120 ( ±60 ) mm <b>4.7" ( ±2.3" )</b>
Y-axis rapids		10 m/min. <b>393 IPM</b>	6 m/min. <b>236 IPM</b>	6 m/min. <b>236 IPM</b>
Slide way type		Box way ( X / Y axes )		
Feed rates		1 ~ 4,800 mm/min. <b>0.039 ~ 189 IPM</b>		
Y-axis servo motor		AC 1.6 kW <b>2 HP</b>		
Y-axis ball screw Ø / pitch		Ø 32 mm <b>1.25" / Pitch 6</b>		
Y-axis thrust ( cont. )		855 kgf		
PARTS CATCHER ( OPT. )				
Max. workpiece diameter		Ø 42 mm <b>1.65"</b>	Ø 65 mm <b>2.55"</b>	Ø 65 mm <b>2.55"</b>
Max. workpiece length		130 mm <b>5.1"</b>	160 mm <b>6.29"</b>	160 mm <b>6.29"</b>
Max. workpiece weight		3 kg <b>6.6 lb</b>	3 kg <b>6.6 lb</b>	3 kg <b>6.6 lb</b>
GENERAL				
Repeatability		± 0.003 mm <b>± 0.000118"</b>		
Positioning accuracy		0.01 mm <b>0.00039"</b>		
Standard CNC control		FANUC Oi-TF ( opt. 31i )		
Voltage / Power requirement		AC 200 / 220 +10% to -15% 3 phase / 30 kVA		
Hydraulic capacity		50 L <b>13 gal</b>	30 L <b>7.9 gal</b>	30 L <b>7.9 gal</b>
Coolant tank capacity		140 L <b>36 gal</b>	150 L <b>39 gal</b>	150 L <b>39 gal</b>
Coolant pump / pressure		0.5 kW ( 3/4 HP , 60 Hz ) rated at 3 bar ( 43.5 PSI )		
Machine weight		6,000 Kg <b>13,300 lb</b>	7,800 Kg <b>17,200 lb</b>	7,800 Kg <b>17,200 lb</b>
Machine weight ( Y-axis model )		7,000 kg <b>15,500 lb</b>	8,500 kg <b>18,800 lb</b>	8,500 kg <b>18,800 lb</b>
Dimensions L × W × H		2,450 x 1,700 x 1,850 mm <b>97" x 67" x 73"</b>	3,033 x 1,940 x 1,985 mm <b>120" x 77" x 79"</b>	3,033 x 1,940 x 1,985 mm <b>120" x 77" x 79"</b>
Dimensions L × W × H ( Y-axis model )		2,535 x 2,030 x 1,950 mm <b>100" x 80" x 77"</b>	3,035 x 2,049 x 2,150 mm <b>120" x 81" x 85"</b>	3,035 x 2,049 x 2,150 mm <b>120" x 81" x 85"</b>

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