JOURNAL 8

The Ultimate Machining Power

THE ULTIMATE MACHINING POWER

GOODWAY®

GOODWAY MACHINE CORP.

GOODWAY GROUP AROUND THE GLOBE

For 45 years, Goodway has been dedicated to the production and development of CNC lathe and has been selling over 55 countries globally with its own brand. The product line consists of multi-axis, vertical, horizontal and Swiss type turning centers and recently, high precision cylindrical grinder and center-hole grinder has been added to the collection. Goodway provides a wide range of turning and grinding machines that supports comprehensive fields such as the aerospace, automobile, energy, electronics, and communication industry.

GOODWAY OPERATION CENTER
DEALERS

Global Sales Network

EUROPE

Sweden	Ireland	Netherlands	Italy	Czech	Russia
Denmark	England	Switzerland	Spain	Poland	Ukraine
Finland	France	Luxembourg	Portugal	Bulgaria	Slovenia
Norway	Germany	Belgium	Hungary	Romania	Croatian
Lithuania					
Latvia					
Estonia					
Turkey					

AMERICA

U.S.A	Chile	Brazil	
Canada	Paraguay	Argentina	
Mexico			

OCEANIA

Australia
New Zealand

AFRICA

Morocco
Egypt
South Africa

ASIA

Japan	Philippines	Myanmar	Iran
Korea	Indonesia	India	Pakistan
Singapore	Thailand	Israel	
Malaysia	Vietnam		

G.LINC New generation intelligent operation system P.07

New generation 5-axis / multi-axis machines coming soon P.20

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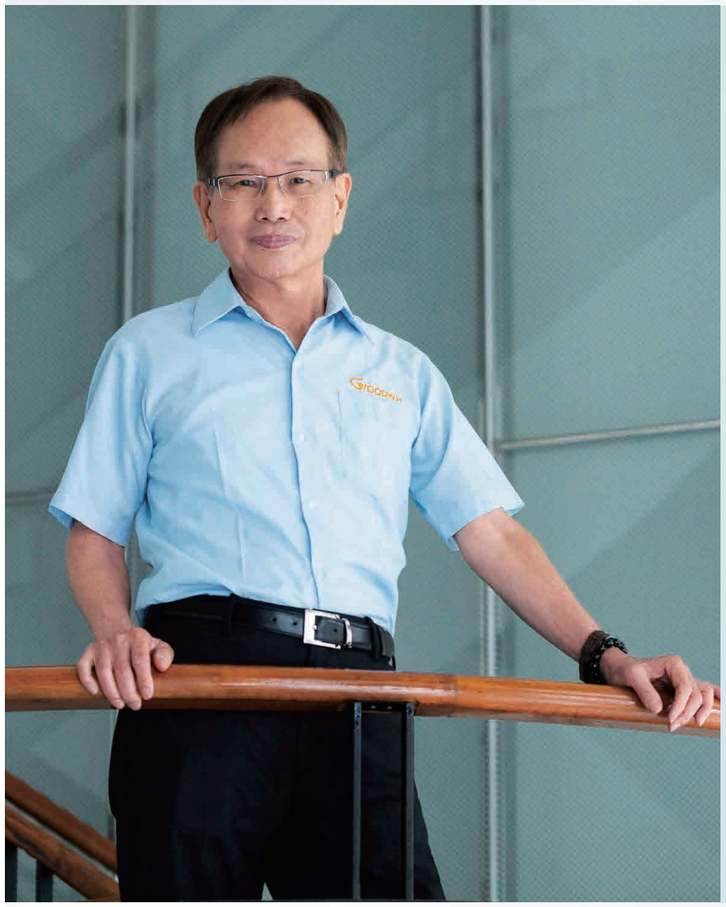


GOODWAY MACHINE CORP.
EDWARD YANG, PRESIDENT

Edward Yang

Can’t change a situation - Change ourselves

Businesses must always face the impact of external environmental factors such as prosperity, exchange rates, and fluctuations in international situation. Some people will panic ; some people will complain. Years ago, I put forward a set of mindsets for the management team : " **When we are no longer able to change a situation, we are challenged to change ourselves.**"

From that moment on, the influence of external variables on business decision-making has gradually faded. We have added new plants every year to prepare for shortening delivery time and expanding operating capacity. By expanding the existing horizontal lathe product line into a Multi- Axis CNC Lathe, Vertical Turning Machines, Swiss-Type Turning Machines, Mill-Turn Machines, and Cylindrical Grinding Machines gain the ability to provide customers with the most complete processing solutions. Continuing to invest in the development of intelligent machinery, GOODWAY has become a new wave in the manufacturing revolution. Backed by the establishment of a new generation of enterprise resource management system (ERP), customer relationship management system (CRM) have improved in internal standard operating procedures and service efficiency.

Of the above decisions, some remain to be seen, while others have already been reflected. By any way, our overall goal of improving customer satisfaction remains the same - we will always advance on the path of continuous improvement.

VALUES TO UPHOLD

Mr. Yang's Management Philosophy

The book " Persistence : From 100 million to 10 billion ", depicts in detail how Mr. Yang, even in a difficult environment, relied on his will to succeed, and accumulating momentum bit by bit to achieve his goals. In the end, we will tell a touching story of the internationally renowned machine tool group. The story will be worth reading for the aspiring person, hoping to find inspiration to follow and achieve their dreams.

At present, the official website has been opened for ordering. The proceeds from the book sales will be donated to social welfare organizations and disadvantaged groups. GOODWAY machine corp. will work with you to better the world!

Online order
(Traditional Chinese Version)

Operation Centers

Constant investment in product development and expand production base are our long-term policy.

After years of planning, preparation, and construction, Goodway's first phase of the Chiayi branch has officially launched at the end of 2018. The initial production would be the vertical CNC turning centers that will add massive new forces to operation.

Later on, Goodway branch in Wujiang, Suzhou and Chiayi branch second phase construction would participate in the operating team by the end of 2020. Goodway's next golden decade is to be anticipated through the complete global sales network and capacity planning, striving to provide customers with the best quality, more reliable, and immediate full solution services.

Online Video

Grand Opening of the New Chiayi branch

Chiayi branch
VTC production line

WuJiang branch
second phase construction diagram

Milestones

1975 GOODWAY MACHINE CORP. established in Taichung, Taiwan with a capital of USD 40,000.

1977 Exported first machine.

1979 Relocated headquarters to Taichung Industrial Park. (space of 5,000 m²)

1988 Successfully expanded to the European market.

1993 Fully implemented the ISO quality control system

2000 Established US operation base YAMA SEIKI, USA

2008
- Company public listed in Taiwan stock market.
- Completed Taichung Science Park Plant and began full operation.

2014 Completed GOODWAY Wujiang, China Plant.

2015
- Successfully developed Cylindrical grinder
- 40th Anniversary of GOODWAY MACHINE CORP.

2016 Began the construction of new branch in Chiayi, Taiwan.

2018
- New Chiayi branch inauguration.
- Annual revenue soars to a new height.

Business philosophy

Outstanding Innovation & The Pursuit of Excellence

Chairman Mr. Edward Yang decided personally determined the spirit of his career early on, and based on this, determined the core values of the GOODWAY Group. He has successfully lead the group's decision making and development for many years.

Cornerstone at the WuJiang branch

HEADQUARTERS >

TAICHUNG · TAIWAN
Processing and assembly of key components
Area : 18,600 m²

CTSP BRANCH >

TAICHUNG · TAIWAN
Manufacturing of turning centers and grinder
Area : 26,600 m²

CHIAYI BRANCH >

CHIAYI · TAIWAN
Manufacturing of vertical turning centers
Area : 60,000 m²

YAMA SEIKI USA., INC. >

LOS ANGELES · CALIFORNIA
Sales and service
Area : 24,000 m²

WUJIANG BRANCH >

WUJIANG . SUZHOU
Manufacturing of turning centers and machining centers
Area : 66,800 m²

Smart Machine

G.LINC

GOODWAY Intellingent HMI System

Turning Organization Production Planning

Traditional processing

G/M code, machine performance, cutting performance, chip removal rate, material, feed rate, spindle speed, path simulation.....

> By experience

TOP

G/M code, machine performance, cutting performance, chip removal rate, material, feed rate, spindle speed, path simulation.....

> TOP, Cutting Assistant, 3D Simulation

Powerful 7 Function Groups

The application features that are constantly being developed are all working for the intelligent experience of G.LINC.

1 **TOOL**
Useful tool management

2 **PROGRAM**
Improve the efficiency of editing programs

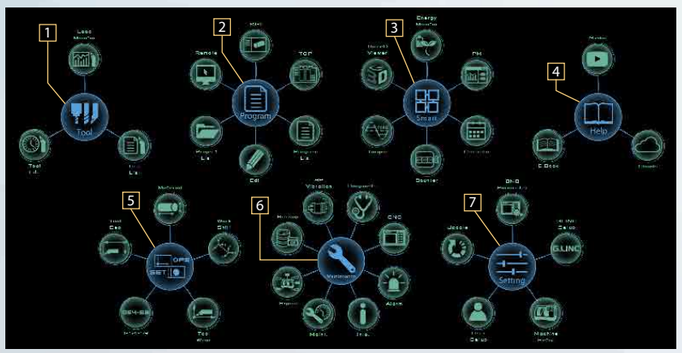
3 **SMART**
Improve processing and production management

4 **HELP**
Assist in understanding system functions

5 **OFFSET**
More user-friendly for tool adjustment

6 **MAINTENANCE**
Quickly understand the status of the machine

7 **SETTING**
Security rights management



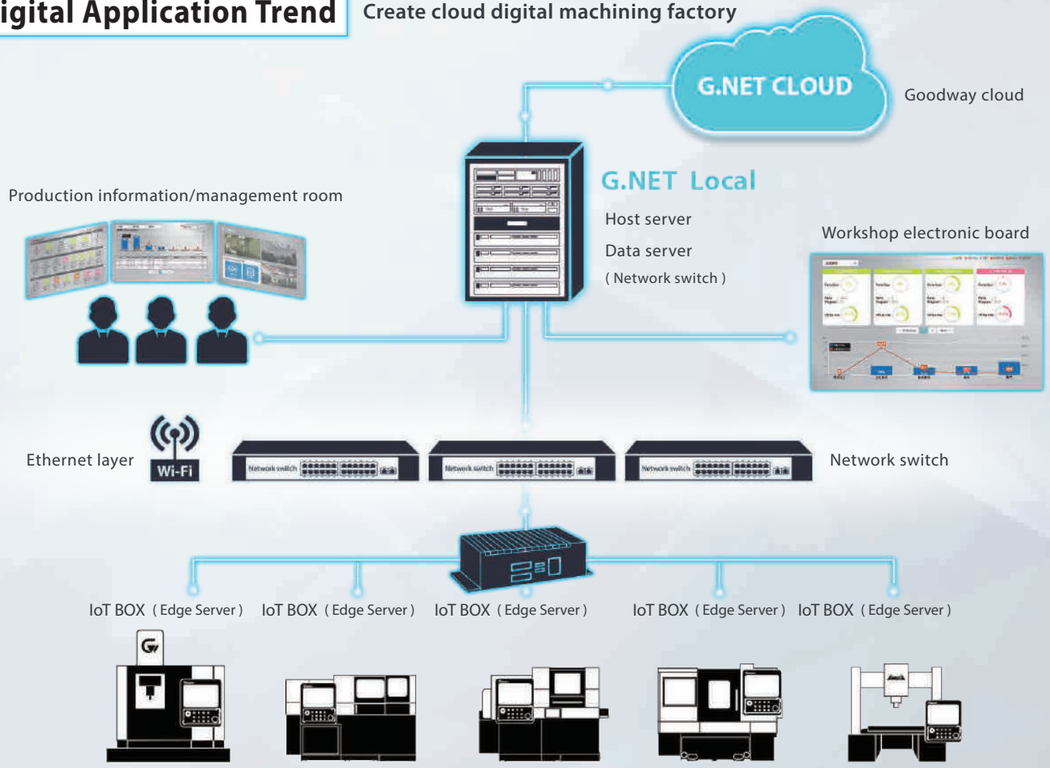
Smart Machine

G.NET II

Intelligent production information integration system

Digital Application Trend

Create cloud digital machining factory



Smart Machine

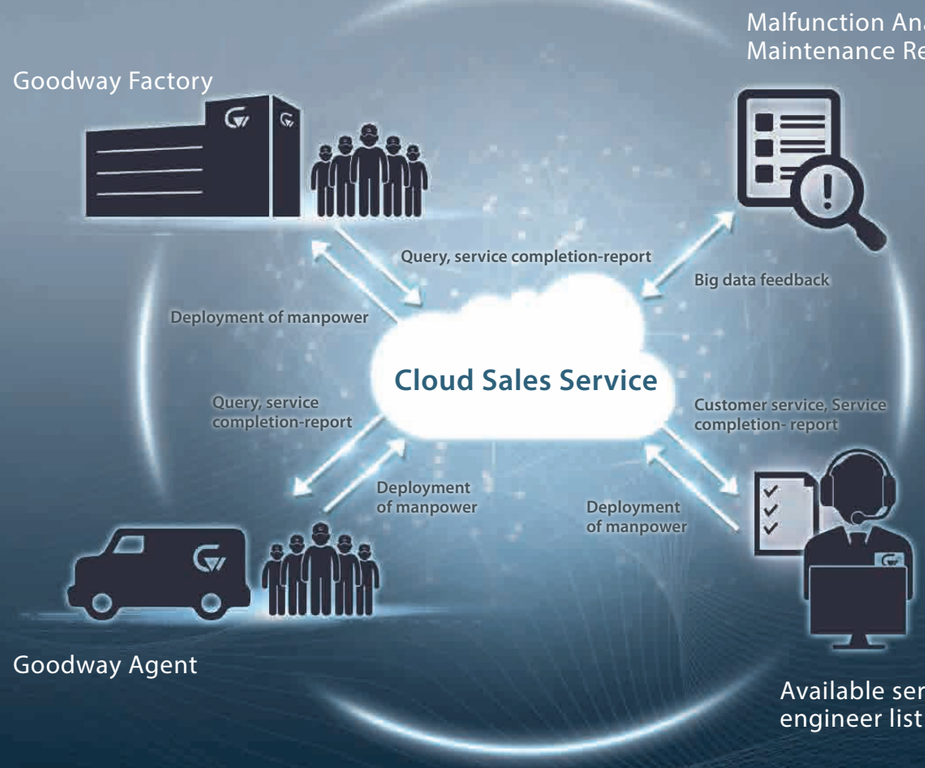
Remote After Service Communication Box

+ Easy operation excluding the complications of internet setup (plug-and-play)
+ Automatic phone hotspot link
+ Security code permission login
+ Remote NC software maintenance
+ Remote monitor/control NC live image
+ Remote monitor/control machine operation interface
+ Remote up and down load machining program
+ Remote abnormal machine condition diagnosis

Smart Machine

Goodway cloud After Service Platform

+ Complete maintenance record for each machine individually for easy repair and diagnosis
+ Cloud digitization for safe information storage
+ Cloud digitization management and global after service information real-time synchronization
+ Increase maintenance quality and efficiency
+ Digitalized maintenance management provides better serviceability for customer's machine
+ Convenient diagnosis from big data analysis
+ Fast and accurate QR-code scan code management



Turning · Milling · Grinding

Total Solution Machining

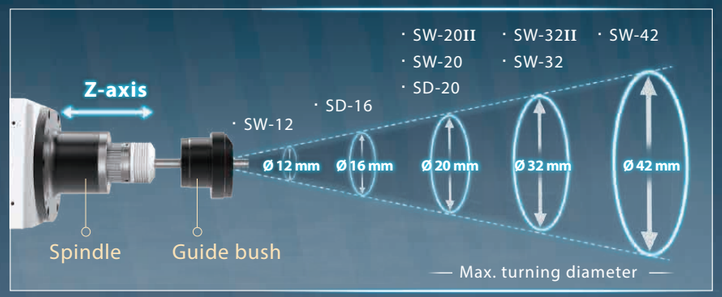
Micro Parts Machining

Goodway's Swiss type turning center is specifically designed for micro part production. It has an abundant tool quantity, flexible tool layout, and innovative features that only advanced machines on the market is capable of, fulfilling your every machining needs.

- Hybrid spindle design, guide bush can be attached and removed easily, allowing the machine to be used both ways.
- 1 ~ 2 deep-hole tool post attached on Sub-spindle body.
- Live tool holder enables B-axis control, allowing fixed angle hole drilling and continuous contour machining.
- Tool holder for back working enables Y2-axis control, allowing offset drilling and tapping.

* Those above may be optional items, please consult Goodway for more information.

Goodway Swiss type turning center line



Medical probe

Minimum turning diameter Ø 0.4 mm

- Machining Equipment SW-12
- Bar diameter Ø 1 mm

Precision Grinding

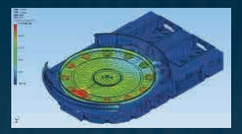
Plunge · Angular · Center- hole grinder

Traveling head CNC cylindrical grinder

Heavy Parts Machining

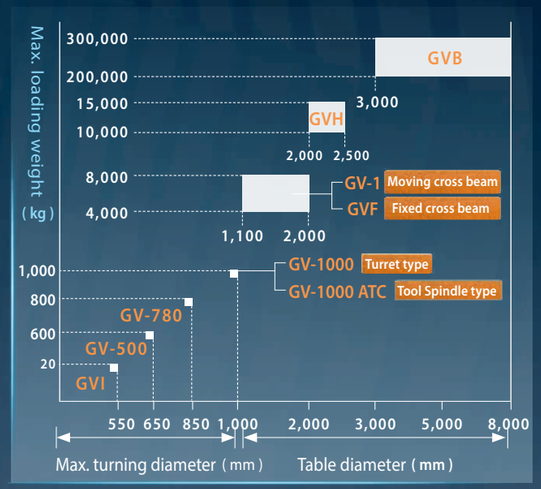
Goodway's vertical CNC turning centers is known in the market for it's high rigidity and powerful spindle. We provide manual or hydraulic work holding for customers to choose. Maximum load ranges from 20 kg to 300,000 kg, fulfilling the machining needs of the automobile, energy, and aerospace industry.

Uses FEA finite element analysis to ensure large casting enhance rib to achieve optimization design.



Spindle bearing has high rigid cross roller bearings or hydrostatic bearings according to different machine size, allowing it to load heavy workpiece with efficiency, enhancing the turning accuracy.

Goodway's vertical CNC turning centers



Complex Parts Machining

GTW series

Turret / Gang tooling

GTZ series

Twin spindles / Upper-Lower turret

GTH series

Parallel 2-spindle / Twin turret

GTS series

Twin spindles / opposed 2- turret

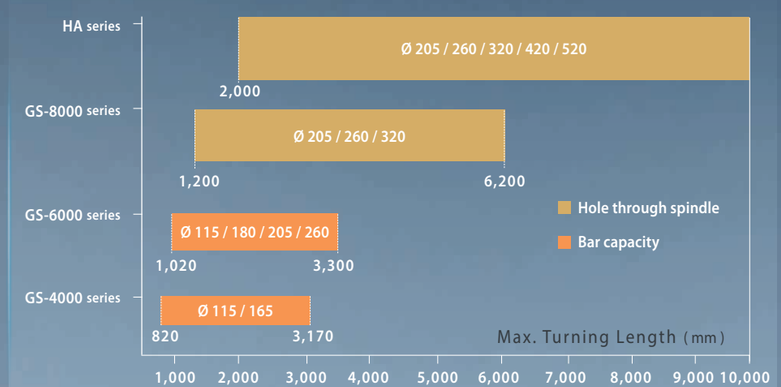
For multi-machining processes and mass production, Goodway's complete multi-axis turning centers would best suit your needs.

Every machine is equipped with twin spindle and is able to automatically complete front and back machining with single set up. Optional Y-axis function overcomes complicate workpiece and improves precision of multiple machining.

The full range of multi-axis machines are equipped with automation integration capabilities, allowing workpieces to be automatically loaded / unloaded and flipped from OP10 to OP20 achieving high-speed mass production

Ultra-long parts machining

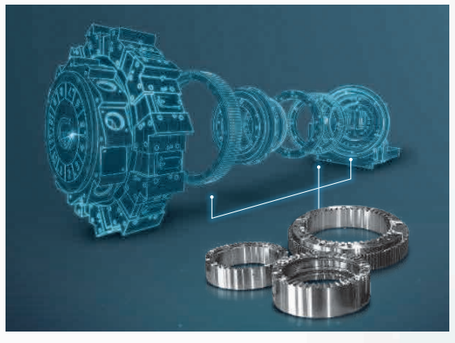
In order to achieve the support for ultra-long parts, Goodway's large CNC turning centers uses high rigidity box ways design including high rigidity programmable tail stock, heavy duty steady rest, and double chucks clamping to reduce vibration and make ultra-long part machining highly accurate and more efficient.



Leading Multi-tasking Machining

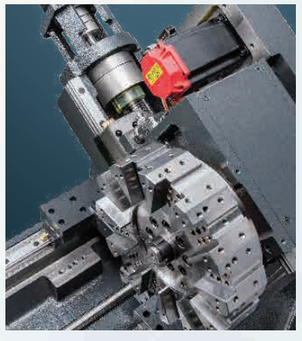
GOODWAY live Tool Turret

Goodway is a leading company in the machine tool industrial field to produce live tool turret in house. With 20 years of experience in constant research and ongoing product refinement, our live tool turrets are optimized to fit best according to each machine's needs. All of our live tool turret are assembled and tested in a temperature controlled room and outshines other market sell turrets in performance, reliability, and maintainability.



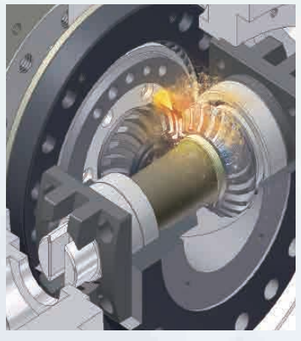
Curvic Coupling

Curvic coupling and gears are purchased by Japan famous company.



Servo driven indexing

Tool indexing is done in little time with one step, easy maintenance is also an advantage.



Automatic oil mist lub. system

Efficiently lowers the temperature rise of bevel gear transmission to increasing milling and cutting speed, ensuring long machining time.

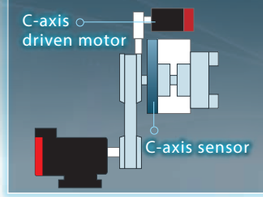
* May be an optional feature

Live Tool Holder

Goodway's live tool holder, which is made by German renowned manufacturers, helps live tool turret functions reach its best performance.

C-Axis Control

Live tool turret with C axis enables turning, milling, drilling, and tapping in a single machine.



New generation Cf axis technology

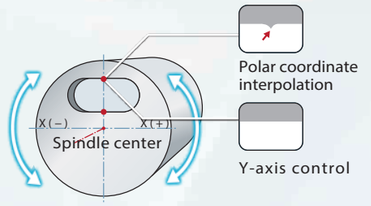
The new Cf axis combines the pros of Cs and Cf axis, which obtains both rigidity and precision, live accuracy reaches 0.00167°

(May be an optional feature)

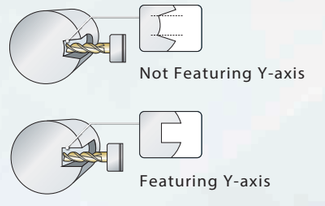
Y-Axis Control

Y-axis not only achieves offset cutting, drilling, and tapping machining, but also improves machining precision of 2 axes simultaneous machining.

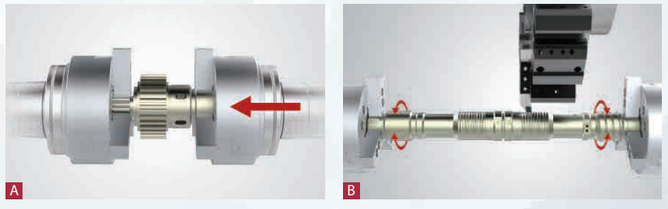
Polar coordinate interpolation V.S Y-axis control



O.D. Troughing



Sub-Spindle

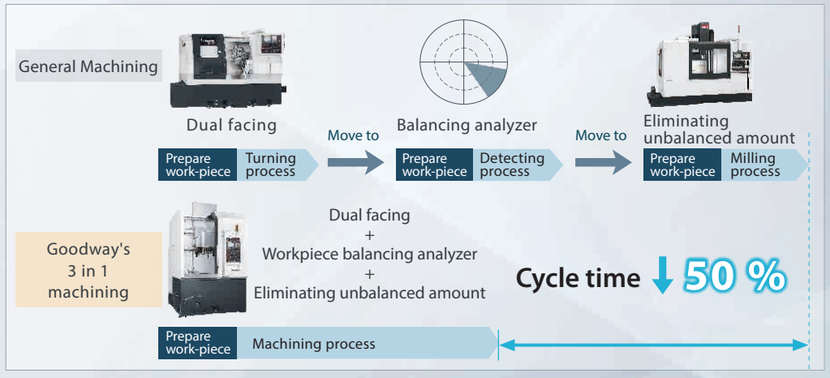


A Sub spindle allows spindle to automatically clamp workpiece for back machining, efficiently saving the manpower of turning the workpiece and also lowers the accuracy error of secondary set up.

B Bar material is clamped at both ends by main and sub spindle thus providing better support , achieving higher machining accuracy.

Work-Piece Balancing Analysis

Goodway's online workpiece balance analysis system integrates dynamic balancing machine functions within turn-mill machine, improving production and inspection efficiency.



Automation Systems

Goodway's experienced application engineering team can design automation equipment tailored to your production needs based on the drawing of the parts thus improving efficiency and lowing labor cost.

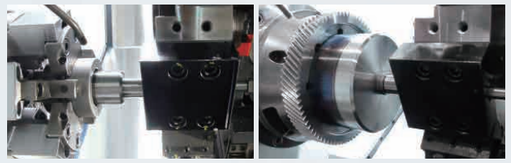
Custom Equipment Developed Capability

Focusing on high-speed and high-volume production needs, Goodway development team used a large database analysis to produce fixtures and measurement equipment tailored to your needs. Any complex parts can be manufactured from feeding the raw material to completed parts in one cycle without human interference.

Specialized Chuck

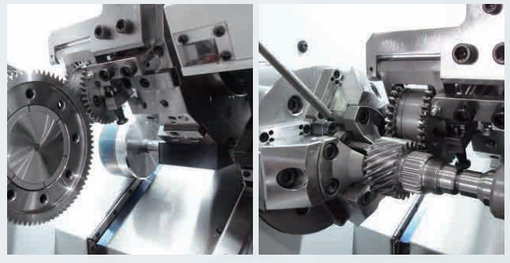
Work-Piece Lean Platform

Automatic Butted Device

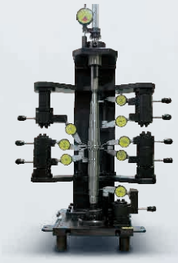


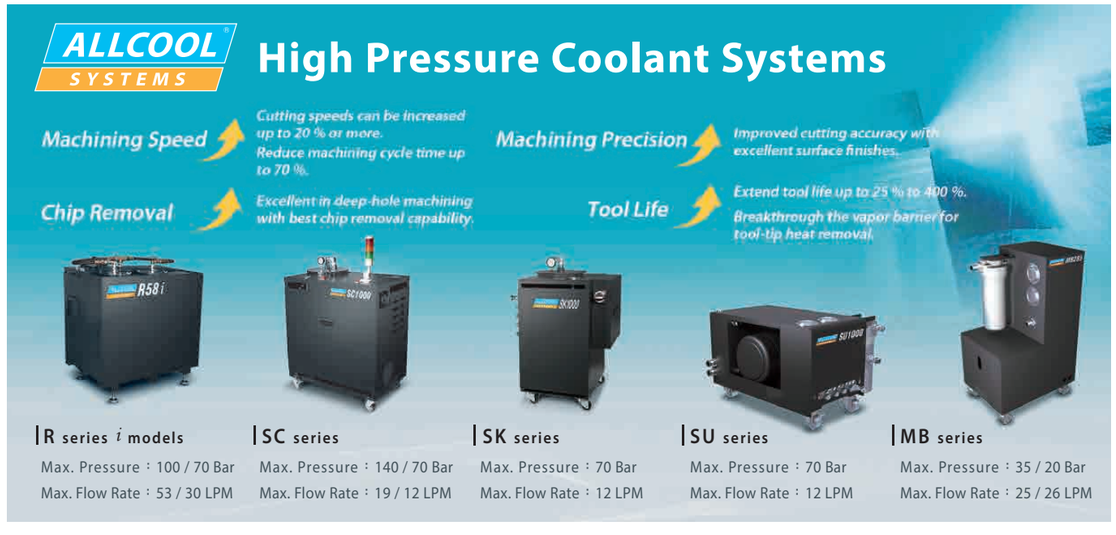
Work-Piece Determining Device

Trimmings Device

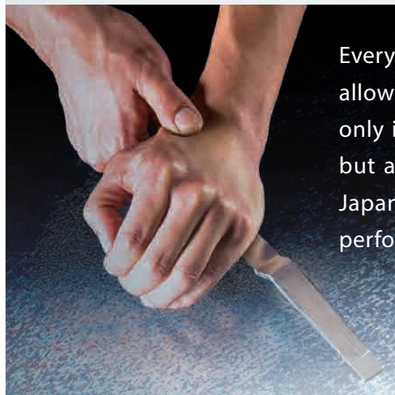


Integrated Capability





Production Advantage



Every Goodway branded product is self-developed and produced by us. This allows us to strictly control our original design concept and quality. We not only import the latest machine tools and technology for our machine shop but also uses key components from renowned brands from Germany and Japan. With 45 years of production experience, Goodway ensures the high performance, accuracy, and durable quality of our products.

Precision hand scraping
Every contact surface undergoes precise hand scrapping to ensure maximum assembly accuracy, structure rigidity, and balanced load.

R & D Center

Intelligent System Control Integrated Lab

Every factory assembly line meets the ISO-9001 quality standards and is processed under strict production management.

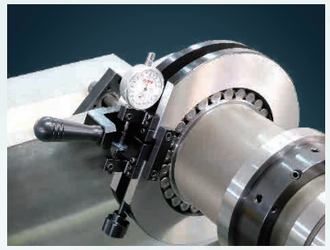
Casting Aging

After high-temperature casting, the cast later goes through a complete cooling process that takes up to 3~ 6 months to ensure maximum rigidity and precise repeatability.

Precise Components Production Factory

Spindle, turret, tailstock, and other core unit are all assembled in Goodway's factory.
Providing better assembly and matching quality compared to other products at the market.

Key components are imported from world famous companies



GN level precisely measuring clearance of spindle bearing

Spindle dynamic balancing analysis

Precise Machine Shop

The casting base and parts are machined in Goodway machine shop, the factory has constant temperature control and uses world's top equipment to reach our strict and high quality standards.

A Japan YASDA high precision horziontal machining center
B Japan TOSHIBA bridge type 5-face machining center
C Japan TOSHIBA Boring Mills
D German ZEISS 3D coordinate measuring machine

Quality Control

Key components will have to be checked by the 3D measuring system, 3D profilier, Projection comparator and other advanced equipment quality inspection before entering assembly line.

The machine will have to pass laser calibration, ballbar testing, cutting test, and more than 100 hours of running-in test.

3D contour detection

Roundness measurement

Ball bar test

Corporate Social Responsibility

Happy Workplace

Establish a people-oriented company

- Actively cultivate talents, offer learning opportunities.
- Assist in building a healthy and enjoyable outlook on life.

Social Welfare

Gain from society, give back to society

- Carry forward the traditional virtues of filial piety.
- Actively assisting disadvantaged groups.
- Industry-university cooperation, research program sponsorship.

Customer Commitment

Become a close partner to the customers

- Provide quality-assured solutions to meet customer demand.
- Devoted to be a reliable partner for customers.

Sustainable Environment

Committed to contributing to environmental protection

- Develop the product portfolio that helps reduce environmental burdens.
- Reducing the potential negative impact of GOODWAY's global presence on the environment.

Charity fundraising concert

Beach clean-up event

Tree planting

Machine tool improvement competition

Annual family day

Donates to help students education

GOODWAY Dale Carnegie Training camp

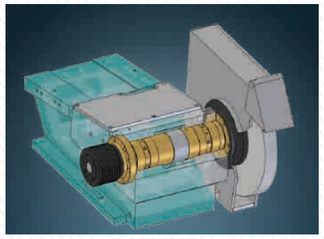
Sponsors Chiayi Taiwan Lantern Festival

Sponsors filial piety broadcast program

CNC Cylindrical Grinder

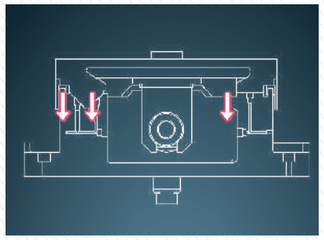
GRU SERIES · GRA SERIES

Roundness	0.8 μm	Positioning Accuracy	1 μm



Grinding Wheel Spindle Supported by Hydro-static Bearing

The grinding wheel spindle is precision machined from Nickel Chromolybedenum alloy steel (SNCM-220). It is supported by hydro-static bearing, which greatly upgrades the spindle running stability while reducing temperature growth to a minimum.

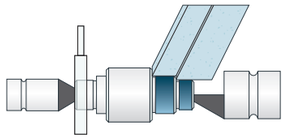


Hydro-static Lubrication on X、Z axes Slideways

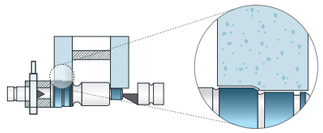
The cross and longitudinal slideways for the grinding wheel head are lubricated by a hydro-static automatic lubrication system. This outstanding lubrication system allows for extremely smooth movement of the grinding wheel head, accurate feed and ensures high grinding accuracy.

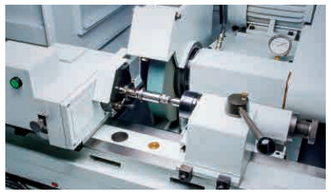
- Available with FANUC / MITSUBISHI / SIEMENS controller.
- Conversational programming to allow operator can easy to learn and operate when equipped MITSUBISHI controller.

GRA series / Angular Grinding



GRU series / Plunge Grinding





(GRU series / Plunge grinding)

(GRA series / Angular grinding)

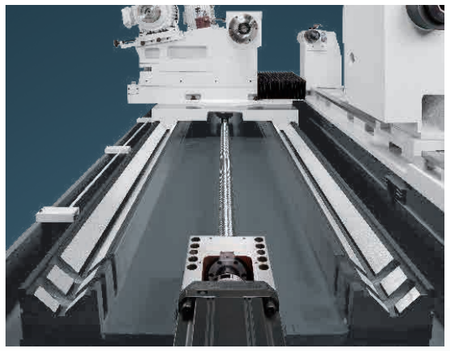
		GRU-2040	GRU-2060	GRA-2060
Distance between centers	mm	420	620	620
Max. swing over table	mm	Ø 200		Ø 200
Max. load between centers	kg	80		80
Max. external grinding dia.	mm	Ø 190		Ø 190
Roundness	μm	0.8		0.8
Wheel spindle swivel angle		±30°		±30°
Wheel O.D. x width x I.D.	mm	Ø 405 x MAX.80 x Ø 127		Ø 405 x MAX.80 x Ø 127
Work table swivel angle		-3° ~ +12°		-3° ~ +12°

Specifications are subject to change without notice.

CNC Cylindrical Grinder

GRW SERIES

Roundness | 1.5 μm | **Positioning Accuracy ≤ 2 μm**



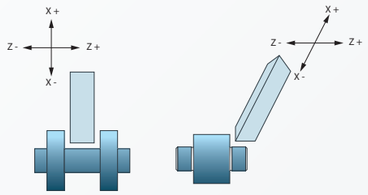
Advanced Construction Design

- X-axis with hand scraping extra large V type guide way to ensure the best dynamic accuracy and balance loading.
- Hardened precision ground ball screws ensure the highest accuracy and durability possible.

GRW series / Traveling Head Grinding

Combine Plunge and Angular Grinding in One

The specially designed GRW series form Goodway is suitable for both plunge grinding and angular grinding. It helps the customer to save investment cost, dramatically upgrade machining efficiency and create more profits.



- Available with FANUC / MITSUBISHI / SIEMENS controller.
- Conversational programming to allow operator can easy to learn and operate when equipped MITSUBISHI controller.


Sequential grinding mode


Single cycle plunge feed cross traverse grinding mode


Single cycle plunge feed grinding mode


Single cycle angular feed cross traverse grinding mode


Single cycle cross traverse grinding mode

		GRW-4006	GRW-4010	GRW-4015	GRW-4020
Distance between centers	mm	630	1,030	1,530	2,030
Max. swing over table	mm	Ø 420			
Max. load between centers	kg	750			
Max. external grinding dia.	mm	Ø 400			
Roundness	μm	1.5			
Wheel spindle swivel angle		0° ~ 35°			
Wheel O.D. x width x I.D.	mm	Ø 600 x MAX.100 x Ø 203			
Work table swivel angle		-3° ~ +12°	-3° ~ +8°		

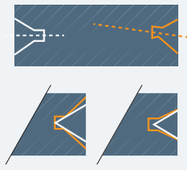
Specifications are subject to change without notice.

GRW-4006 super rigid structure

GRC SERIES

Center Hole CNC Grinder

- \+ High accuracy work-piece setup permits roundness error less than 1 μm.
- \+ Center hole surface roughness N4 ~ N6 = 0.2 ~ 0.8 μm.
- \+ Automatic centering for work-piece clamping simplifies work-piece setup.



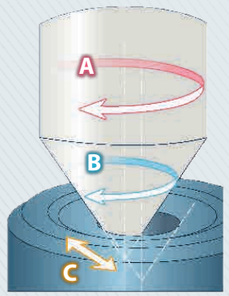
Extra high positioning accuracy center hole achieves less than 10 μm of alignment error between center hole and axial center.

Internal taper angle error is less than 10 seconds.

Exclusive Grinding Motions

3D synchronizde grinding guarantees high accuracy of center holes.

- A Grinding wheel rotation.
- B Grinding wheel spindle performs planetary motion.
- C Grinding wheel moves reciprocally along the conic surface



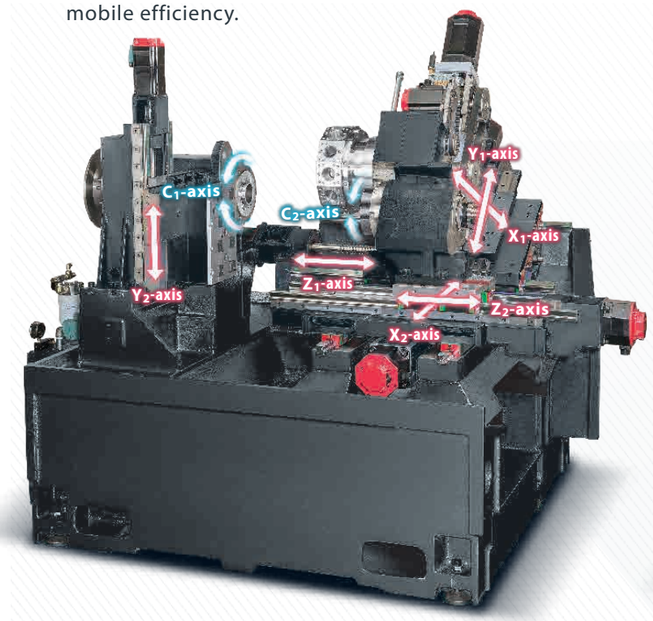
		GRC-1000	GRC-1500
Center hole diameter	mm	Ø 1 ~ Ø 60	
Work-piece clamping range	mm	Ø 4 ~ Ø 220	
Work-piece length	mm	50 ~ 1,000	50 ~ 1,500
Work-piece weight	kg	120	
Center hole angle		60°	
Grinder wheel spindle speed	rpm	45,000	

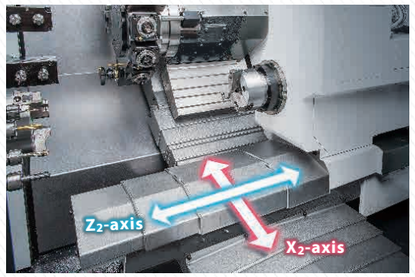
Specifications are subject to change without notice.

Turret / Gang Tooling Turning Center

GTW SERIES

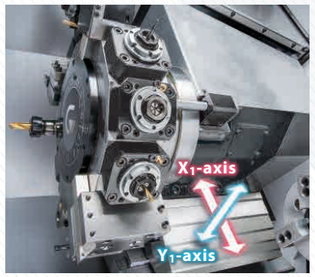
+ A new model suitable for small and medium-sized precision parts processing, especially for medical and automotive industry.
+ Standard double Y-axis function, any complex front/rear machining can be easily completed in one setup.
+ 8-station gang tool systems provide high efficiency of rear side machining. Less interference than traditional turret design.
+ 30° low gravity slant bed design on Z1-axis bed provides stable foundation and make sure the cutting rigidity.
+ 3 axes design with high precision linear guideway to provide the best control and mobile efficiency.





Innovation on X2-axis design

- Greatly enlarge the processing area on rear side
- Improve machining accuracy on multiple process.



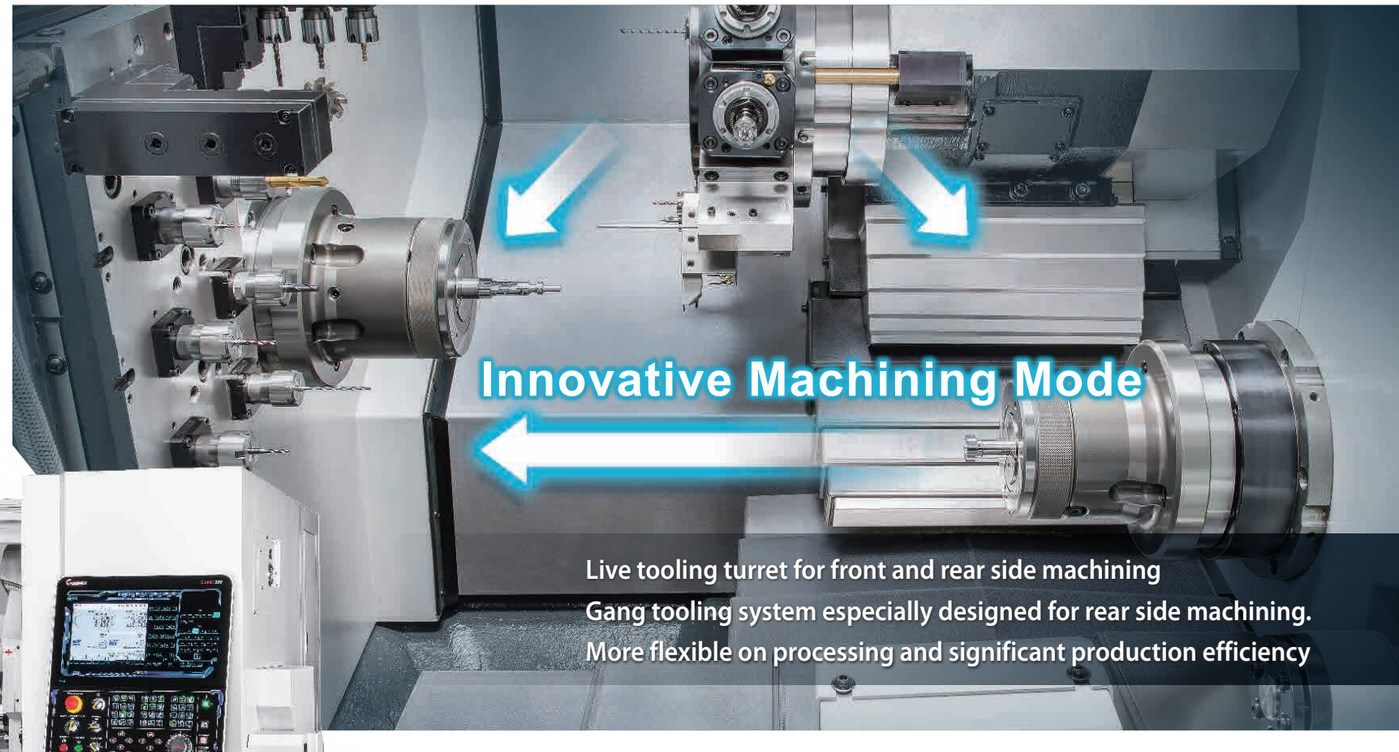
12-Station Live Tooling Turret

- Tool shank size : □ 20 mm / Ø 25 mm
- Live tooling shank size : ER25
- Y_1-axis travel : 70 mm = ±35 mm

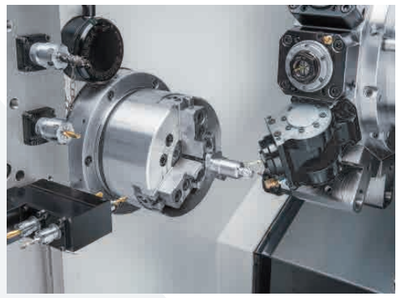
8-Station Gang Tooling System

- Live tooling shank size : ER20
- Y_2-axis travel : 250 mm

Online Video
GTW cutting display

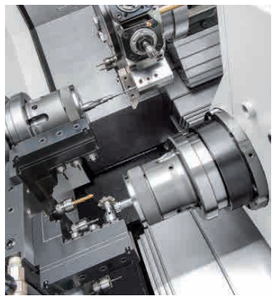


Live tooling turret for front and rear side machining
Gang tooling system especially designed for rear side machining.
More flexible on processing and significant production efficiency



Front-end working

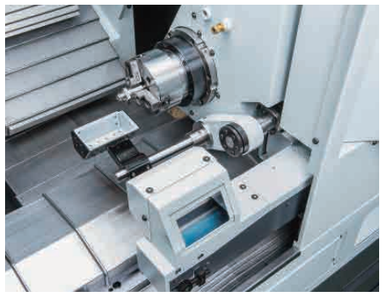
Rear-end working



Front-end and rear-end working synchronization

		GTW-1500Y
Max. turning diameter	mm	Ø 250
Max. turning length	mm	210
Chuck size		DIN173E / DIN177E / 6"
Bar capacity	mm	Ø 51
Spindle nose		A2-5
Spindle motor output	kW	11 / 15 (cont. / 30 min.)
Turret / Gang tooling stations	T	12 / 8
X_1 / X_2 axes travel	mm	180 / 310
Z_1 / Z_2 axes travel	mm	268 / 550
Y_1 / Y_2 axes travel	mm	70 = ±35 / 250

Specifications are subject to change without notice.



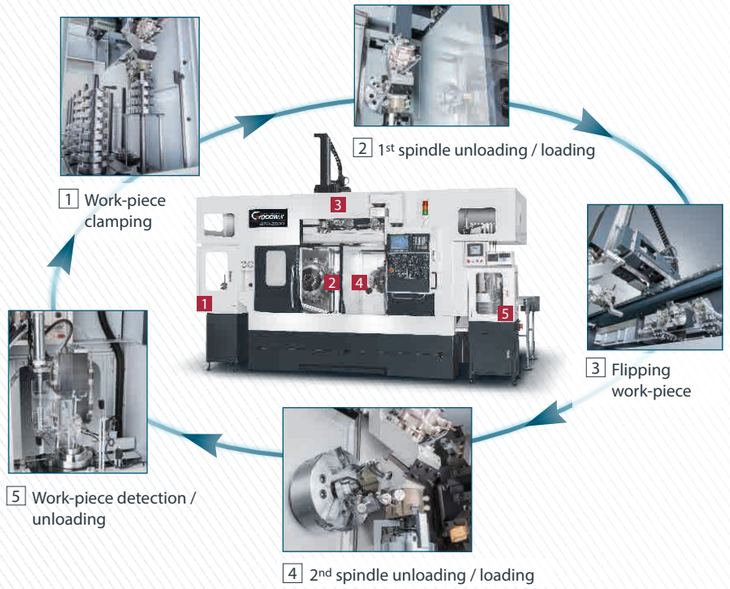
Auto unloading

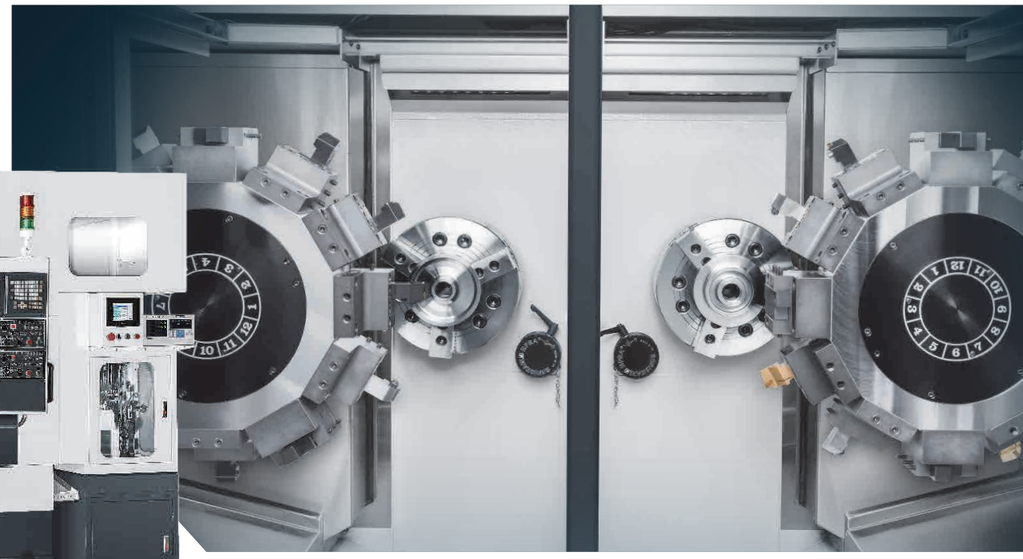
Parallel Twin Spindles Turning Centers

GTH SERIES

Online Video
GTH cutting display

+ Low mechanical interference, easy to integrated twin spindles machine, single spindle machine and all types of automatic system into a highly efficient production line.
+ Assist by robot arm and flipping device, the twin spindles design can provide front/rear cutting simultaneously but also front cutting simultaneously to meet the best process arrangement of mass production.
+ Loading by robot arm on 2nd spindle increase the working efficiency more than 5 times base on twin spindles simultaneous receiving design, shorten non-cutting time.





		GTH-2000
Max. turning diameter	mm	Ø 300
Max. turning length	mm	205
Chuck size		10"
Hole through spindle		A2-6
Spindle motor output (cont. / 30 min.)	kW	11 / 15
Turret station	T	12
X / Z axes travel	mm	195 / 220
X / Z axes rapid feed rate	m/min.	24

Specifications are subject to change without notice.

Tailor-made Production Line Available

For different application needs, GOODWAY R&D team with rich experience of Turn-Key cases and precise process analysis program, can integrated GTH series, automation system and work-piece detector optimized configuration to achieve ultra-high mass production capacity while ensuring stable product accuracy.

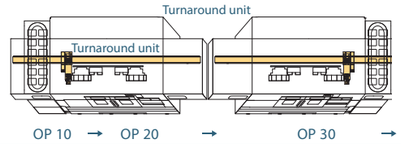
Double Machines + Double Robot Arm

Single Machine + Single Robot Arm
(w /work-piece cleaning and detecting device)

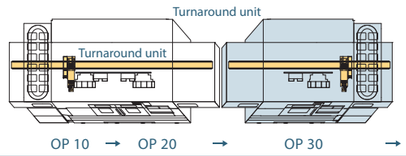
Single Machine + Single Robot Arm

Varies Applications

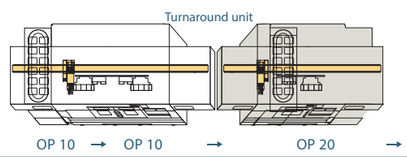
A
Line tact time
40 sec. / work-piece



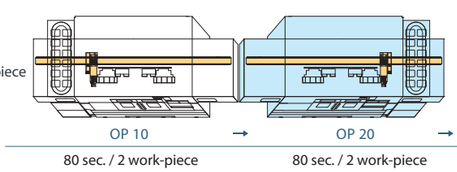
B
Line tact time
40 sec. / work-piece



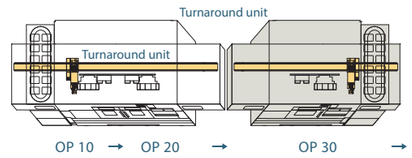
C
Line tact time
40 sec. / work-piece



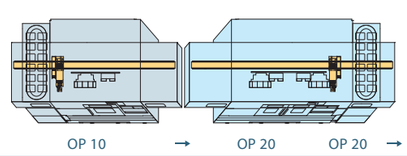
D
Line tact time
40 sec. / work-piece



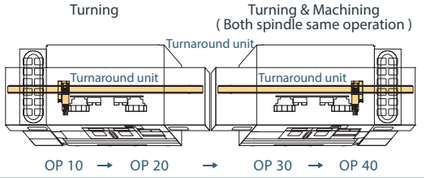
E
Line tact time
40 sec. / work-piece



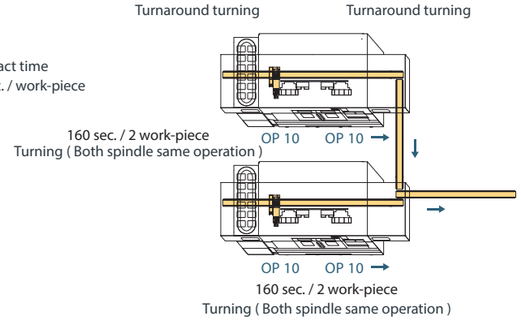
F
Line tact time
40 sec. / work-piece



G
Line tact time
40 sec. / work-piece



H
Line tact time
40 sec. / work-piece



Twin Spindles & Turrets Turning Centers

GTZ SERIES

+ Multi task on front side and rear side machining can be automatically done in one machine.
+ The upper and lower turret can be used simultaneously or separately to support the first and second spindles enabling more flexible machining.
+ The upper and lower turret can be balancing cutting in the twin spindle, greatly reducing the vibration of slim work-piece, and effectively shorten the cycle time also increased the roundness accuracy.
+ Low gravity 45° slant bed design with super rigid roller type linear guide way which is suitable for heavy cutting.
+ Optional 12 / 16 stations live tool turret and Y-axis function.

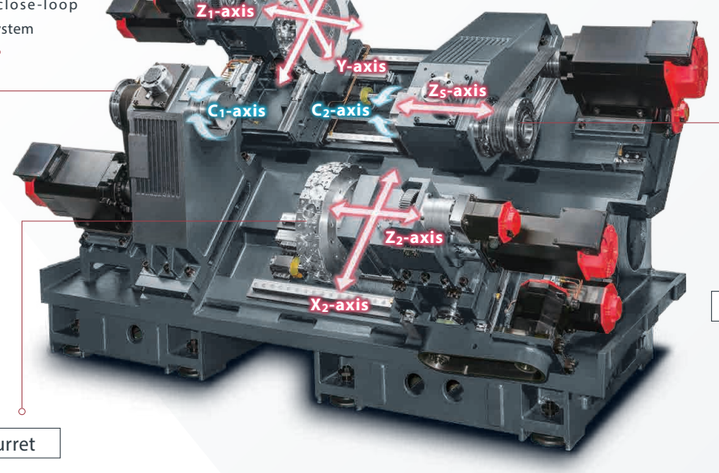
Online Video
GTZ cutting display

1st spindle

- Bar capacity : Ø 51 / Ø 65 mm
- Spindle motor : 11 / 15 kW (cont. / 30 min.)
- High resolution Cs-axis close-loop control system

Upper Turret

- Turret capacity : 12 (16 Opt.) stations
- Tool shank : □ 25 / Ø 40 (□ 20 / Ø 32 Opt.) mm
- Live tooling shank size : ER32 (ER25 Opt.)
- Live tooling output : 3.7 / 5.5 kW (cont. / 30 min.)



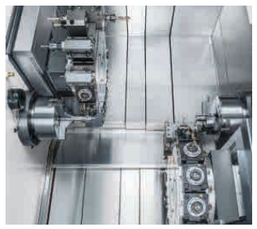
2nd spindle

- Bar capacity : Ø 51 / Ø 65 mm
- Spindle motor : 11 / 15 kW (cont. / 30 min.)
- High resolution Cs-axis close-loop control system

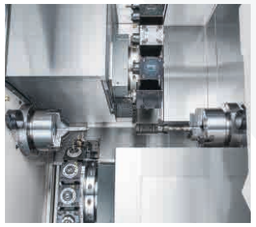
Lower turret

- Turret capacity : 12 (16 Opt.) stations
- Tool shank size : □ 25 / Ø 40 (□ 20 / Ø 32 Opt.) mm
- Live tooling shank size : ER32 (ER25 Opt.)
- Live tooling output : 3.7 / 5.5 kW (cont. / 30 min.)

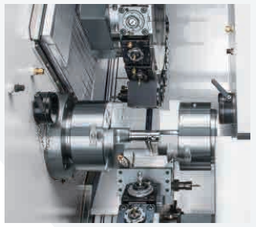
Flexible Machining Combinations



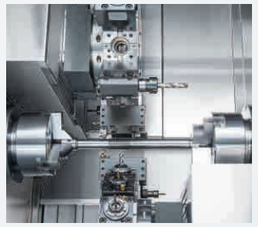
- Upper turret working on left spindle
- Lower turret working on right spindle



- Upper turret working on right spindle
- Lower turret working on left spindle



Work-piece can be moved between both spindles



Upper and lower turret balanced cutting synchronization

		GTZ-2000	GTZ-2600
Max. swing dia.	mm	Ø 270	
Max. turning dia.	mm	Ø 250	
Max. turning length	mm	604 (615)*1	592 (603)*1
Chuck size		6" (Big-bore)	8" (Big-bore)
Bar capacity	mm	Ø 51	Ø 65
Spindle nose		A2-5	A2-6
Spindle motor output	kW	11 / 15 (cont. / 30 min.)	
Turret / Live tooling turret stations	T	12 + 12 (Opt. 16 + 16)	
X_1 / X_2 axes travel	mm	195 / 210	
Z_1 / Z_2 axes travel	mm	620 / 620	
Y-axis travel	mm	100 = ±50	

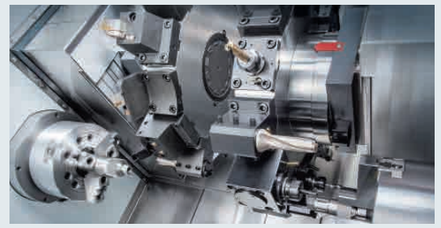
*1 16 turret station

Specifications are subject to change without notice.

GTS SERIES

Twin Spindles & Turrets Turning Centers

+ Multi task on front side and rear side machining can be automatically done in one machine.
+ Compact structure design, floor space is only around 5.3 m^2 (GTS-150)
+ Super rigid low gravity 45° slant bed design.
+ Rapid move and low wear linear guide way. (GTS-150)
+ With heat treatment and precision grounding high rigid box way (GTS-200)
+ Optional twin turrets, twin C-axis and twin Y-axis function.



		GTS-150	GTS-200	GTS-260
Max. swing diameter	mm	Ø 180	Ø 280	
Max. turning diameter	mm	Ø 180	Ø 280	
Max. turning length	mm	180	200	
Chuck size		6"	8"	10"
Bar capacity	mm	Ø 42	Ø 51	Ø 65
Spindle nose		A2-5	A2-6	A2-8
Spindle motor output (cont. / 30 min.)	kW	5.5 / 7.5	11 / 15	
Turret / Live tooling turret stations	T	12	12	
X_1 / X_2 axes travel	mm	155 (160)*1	190 (220)*1	
Z_1 / Z_2 axes travel	mm	180 / 500 (210 / 600)*1	270 / 740	
Y_1 / Y_2 axes travel	mm	±30	±60	

*1 Y-axis model

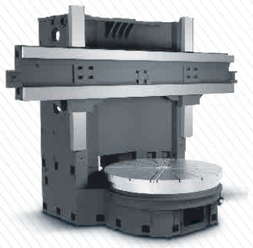
Specifications are subject to change without notice.

Vertical Turning Centers

SUPER GV SERIES

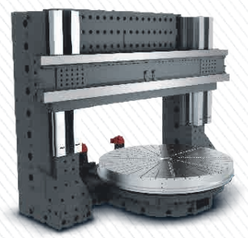
+ Large machining range: Turning diameter can reach up to Ø 9,000 mm, and turning height up to 5,000 mm*1
+ Super-size box way structure design on X / Z / W axes with long span to achieve maximum strength to meet the requirement of heavy cutting.
+ Power closed-type ram design, optional dual ram design is also available to support different and more flexible machining modes.
+ Work-piece spindle are paired with cross roller bearings or hydrostatic bearing according to model size. Maximum table load capacity can reach up to 300,000 kg*1
+ 16T or 24T carousel type magazine changes tool by servo motor which provides bi-directional tool indexing, low-noise, and precise positioning.
+ Optional live tooling spindle, providing compound functions such as turning, milling, and grinding.

*1 : Varies according different models, shown as specification table.



One-piece column structure
GVH-2000 / GVH-2500

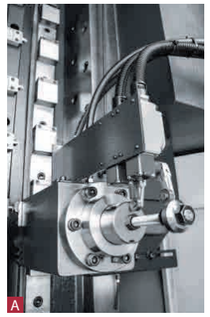
The one-piece column & bridge is firmly mounted on top of the bed, which ensures machine overall rigidity and minimizes spindle overhang to provide optimal machining accuracy.



Gantry type structure
GVB-3000 ~ GVH-8000

Columns are fixed both sides with base and intergrade cross beam which form a closed torque structure and can provides super rigid construction.


(GVB-5000)


A


B


C

A W-axis is controlled by Goodway's twin servo simultaneous control technology and is clamped by hydraulic cylinder after being positioned by two live locking pins, ensuring high rigidity of both cross beam and column.

B Work-piece spindle uses hydrostatic bearing which drives rotary table easily without needing high torque output. Maintaining great dynamic accuracy even when reaching max. load. (GVB-5000 above model)

C Cs-axis is driven by twin spindle motors that eliminates gear backlash and provides double torque output. Repeatability can reach up to ±5" (GVB-3000 above model)

			GVH-2000	GVH-2500	GVB-3000	GVB-3500	GVB-4000	GVB-4500	GVB-5000	GVB-6000	GVB-7000	GVB-8000
Table diameter		mm	Ø 2,000	Ø 2,500	Ø 3,000	Ø 3,500	Ø 4,000	Ø 4,500	Ø 5,000	Ø 6,000	Ø 7,000	Ø 8,000
Max. turning diameter		mm	Ø 2,300	Ø 2,800	Ø 3,500	Ø 4,000	Ø 4,500	Ø 5,000	Ø 6,000	Ø 7,000	Ø 8,000	Ø 9,000
Max. work-piece weight		kg	10,000	15,000	20,000 / 45,000		30,000 / 60,000		100,000	150,000	250,000	300,000
Motor output (cont. / 30 min.)	Work-piece spindle	kW	60 / 75		(39 / 45) x 2 , Opt. (58 / 70) x 2		(39 / 45) x 2 , Opt. (58 / 70) x 2 、(95 / 140) x 2		(58 / 70) x 2 , Opt. (95 / 140) x 2			
	Live tooling spindle*1	kW	11 / 15		15 / 18		22 / 26					
X-axis travel		mm	2,830	3,080	3,950	4,450	4,950	5,450	6,435	7,435	8,635	9,735
Z-axis travel		mm	1,200 / 1,500		1,500 / 1,800		1,500 / 1,800		1,600 / 2,000		1,600 / 2,000 / 2,500	
W-axis travel		mm	1,200 / 1,600		1,200 / 2,000 / 2,800		1,200 / 2,000 / 2,800		1,600 / 2,400 / 3,200		1,600 / 2,400 / 3,200 / 4,000	

*1 : Opt.

Specifications are subject to change without notice.

Vertical Turning Centers

GV-1 SERIES

+ W-axis moving structure helps shorten ram structure overhang and the length between machining point to head, ensuring excellent cutting rigidity, fulfilling the need for flat and slim work-piece machining.
  - · W-axis has 800*1 mm travel with high rigidity square box way, suitable for heavy cutting.
  - · Cross beam is positioned by live locking bolts and clamped with four hydraulic cylinders to ensure stable support.

*1 : GV-1100: 600 mm

			GV-1100	GV-1200	GV-1600	GV-2000
Table diameter		mm	Ø 1,100	Ø 1,250	Ø 1,600	Ø 2,000
Max. swing diameter		mm	Ø 1,400	Ø 1,600	Ø 2,000	Ø 2,050
Max. turning diameter		mm	Ø 1,200	Ø 1,350	Ø 1,800	Ø 2,000
Max. turning height		mm	1,000	1,300		1,280
Table load capacity		kg	4,000	5,000	8,000	5,000 / 8,000 *2
Motor output (cont. / 30 min.)	Work-piece spindle	kW	37 / 45			
	Live tooling spindle*2	kW	7.5 / 11	11 / 15		
X / Z axes travel		mm	1,300 / 900	1,375 / 900	1,600 / 900	1,700 / 900
W-axis travel		mm	600	800		

*2 : Opt.

Specifications are subject to change without notice.

Vertical Turning Centers

GVF SERIES

+ Fixed beam design : Cross beam and column are made with MEEHANITE casting and designed as one-piece, ensuring excellent vibration suppressing and heavy duty cutting ability.
  - · The column and beam made by MEEHANITE one-piece casting to get high rigidity performance.
  - · The square ram has a closed-type design that gives greater structural rigidity and machining accuracy.

			GVF-1112	GVF-1214	GVF-1215	GVF-1618	GVF-2023
Table diameter		mm	Ø 1,100	Ø 1,250	Ø 1,250	Ø 1,600	Ø 2,000
Max. swing diameter		mm	Ø 1,400	Ø 1,450	Ø 1,600	Ø 2,000	Ø 2,350
Max. turning diameter		mm	Ø 1,200	Ø 1,400	Ø 1,500	Ø 1,800	Ø 2,300
Max. turning height		mm	900				
Table load capacity		kg	4,000	3,700	5,000	8,000	5,000 / 8,000 *1
Motor output (cont. / 30 min.)	Work-piece spindle	kW	37 / 45				
	Live tooling spindle*1	kW	7.5 / 11		11 / 15		
X-axis travel		mm	1,450	1,550	1,600	1,750	2,000
Z-axis travel		mm	900				

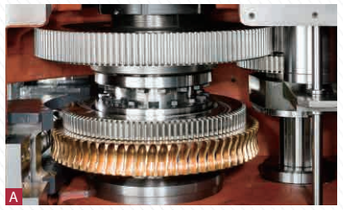
*1 : Opt.

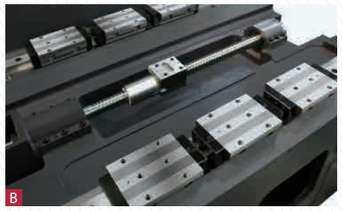
Specifications are subject to change without notice.

Vertical Turning Centers

GV-1000 SERIES

+ The base and column are made with MEEHANITE grade casting combined with good thermal equilibrium in order to fulfill the need of long hours machining.
+ Turret disk indexed precisely by Ø 320 mm diameter curvic, ensuring turret rigidity in all conditions.
+ X / Z axes direct drived by servo motors. Rapid feed rate can reach 24 / 20 m/min.
+ The height from spindle nose to floor is 1,080 mm, and the distance from spindle center line to operator door is 671 mm, creating an operation-friendly environment.
+ Rear-exit type chip conveyor contributes to flexible production line configuration and centralized chip processing.
+ Coolant tank allows easy maintenance and 300L large capacity provides the best cooling affect.


A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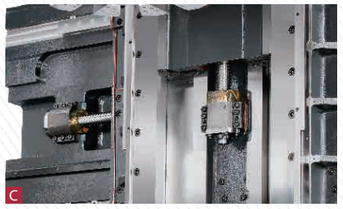
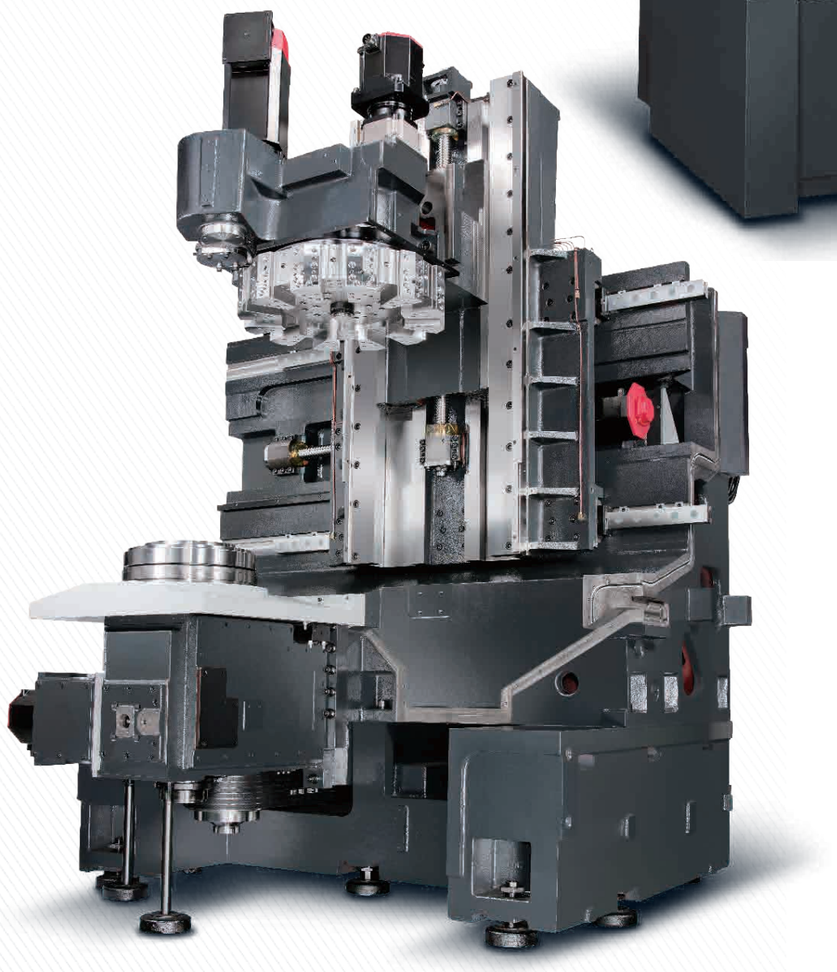

C

A 2-step gear box is driven by 30 kW spindle motor, torque output can reach 3,768 Nm.

B X-axis uses high-durability roller type linear way design, providing high speed and rigidity for heavy cutting.

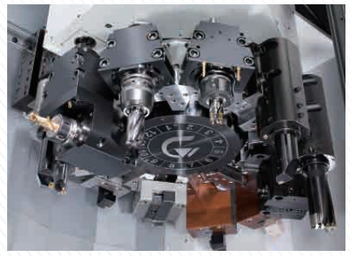
C Z- axis is designed with wide span and high rigidity box way, enhancing heavy cutting function and ensuring cutting stability.



Cf-axis

Adopt Cf-axis with disk brake system can provide the strongest rigidity of C-axis function.

Live tooling turret



Optional ER50 12-station live tooling turret only spins when working, which can save energy and prevent damaged of mechanical device.

GV-1000M/ATC

Milling spindle and 12 tool magazine for replacing live turret is optional for this series, fulfilling different kinds machining.

	GV-1000	GV-1000M/ATC
Max. swing diameter	Ø 1,020 mm	
Max. turning diameter	Ø 1,000 mm	
Max. turning height	760 mm	700 mm
Chuck size	18" ~ 32"	
Spindle nose	A2-15	
Spindle motor output	22 / 30 kW (cont. / 30 min.)	
X / Z axes travel	525 / 765 mm	750 / 850 mm

Specifications are subject to change without notice.

Vertical Turning Centers

GV-780 SERIES

+ The spindle adopt 22 kW high horse power and option to adopt 2,817 Nm high torque output ZF gear type spindle.
+ 8 or 12 station servo turret, optional 12 tool live turret and C-axis as turning centers are also available.
+ Column and base designed as one-piece with hand scraping at contact surface, ensuring structure rigidity and load distribution.
+ X / Z axes uses roller type linear guide ways, providing high speed and rigidity.
+ The selection of dual-face turning holders enables finishing on both sides of the work-piece simultaneously, increasing machining efficiency 50% more than standard tools.

Work-piece Balancing Analyzer (WBA) opt.

Applied on "unbalancing detecting of unsymmetrical work-piece" and "dynamic balancing analysis after machining" Removing uneven parts by live tooling turret helps complete dynamic balancing of work-piece.

		GV-780
Max. swing diameter	mm	Ø 850
Max. turning diameter	mm	Ø 820
Max. turning height	mm	660
Chuck size		15"/ 18" (Opt.)
Spindle nose		A2-11
Spindle motor output	kW	18.5 / 22 (cont. / 30 min.)
X / Z axes travel	mm	500 / 670
X / Z axes rapid feed rate	m/min.	24

Specifications are subject to change without notice.

Vertical Turning Centers

GV-500 SERIES

+ Compact structure combined with rear-exit chip conveyor. Cover area 3.3 m^2, allowing more space for factory arrangement.
+ 3,000 rpm high performance belt type spindle, and optional gear box is also available, providing maximum torque of 1,821 Nm.
+ 8 or 12 station servo turret, optional 12 live tool turret and C-axis as turning centers are also available.
+ Column and base designed as one-piece with hand scraping at contact surface, ensuring structure rigidity and load distribution.
+ X / Z axes use high-precision linear guide ways, providing high speed and precision.

Twin Spindles & Twin Turrets GV-500X Series (Opt.)

Twin spindles and twin turrets are designed with the same specification, combined with automatic loading and unloading system and workpiece flipping function. Work-piece can be completed in one set-up.

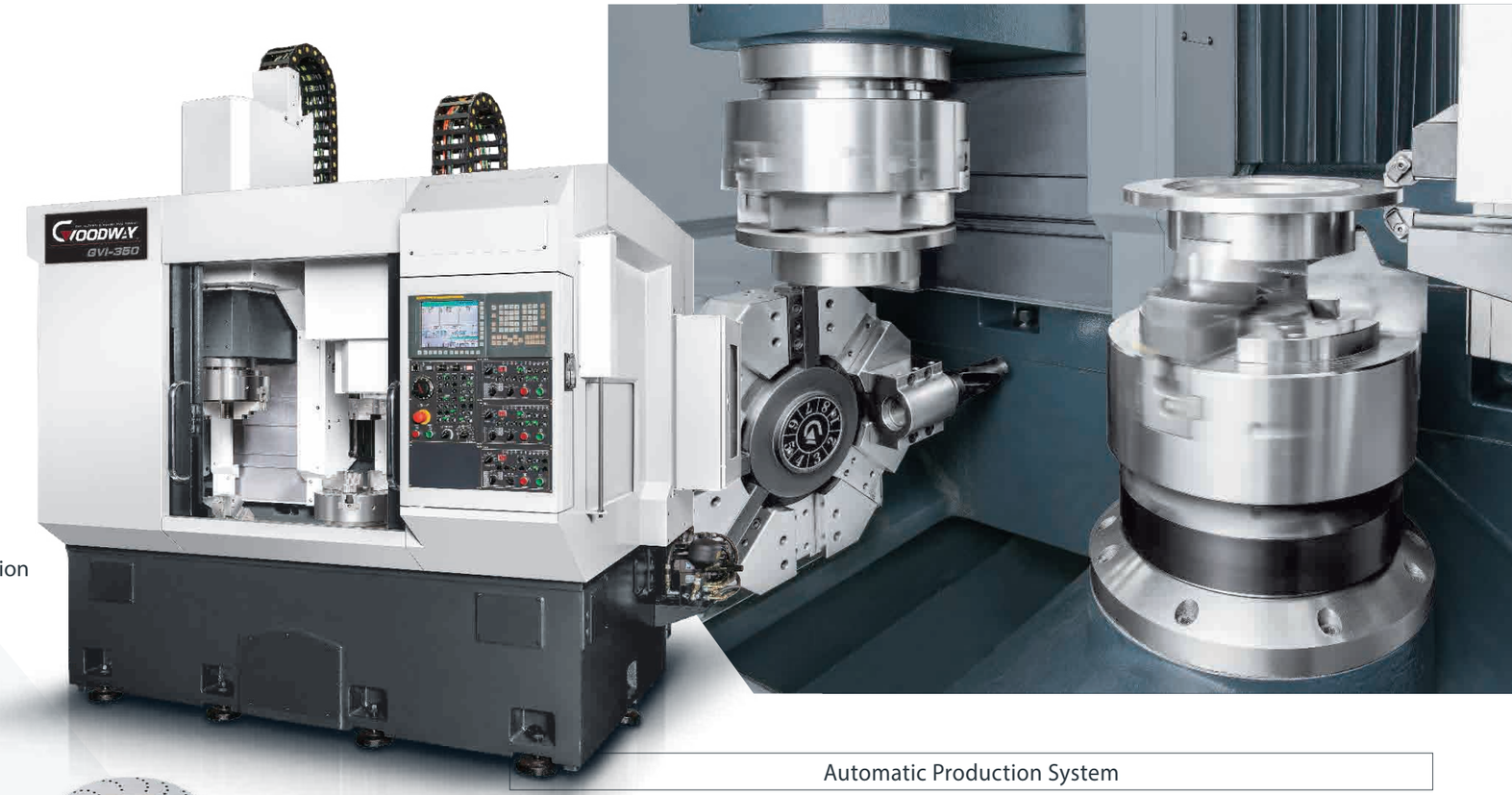
		GV-500
Max. swing diameter	mm	Ø 650
Max. turning diameter	mm	Ø 620
Max. turning height	mm	520
Chuck size		12"/ 15" (Opt.)
Spindle nose		A2-8
Spindle motor output	kW	15 / 18.5 (cont. / 30 min.)
X / Z axes travel	mm	350 / 550
X / Z axes rapid feed rate	m/min.	24

Specifications are subject to change without notice.

Vertical Turning Centers

GVI SERIES

Online Video
GVI cutting display



+ Inverted vertical design on spindle and turret. Parts loading/unloading, flipping can be completed automatically and make the production more effectiveness.
+ Inverted spindle helps chips falling into chip conveyor due to its own weight, removing chip remains and ensuring machining precision.
+ Compact design helps reduce machine foot-print up to 15% comparing to traditional vertical twin spindles & turrets machine.
+ The machine is equipped with a 8 station servo indexing turret, live tool turret and C-axis are available for option.

Intelligent Production System

In response to the revolution of "Industrial 4.0", GVI automatic production system also combines innovative skills such as Goodway's G.NET remote monitoring, online work-piece dynamic balancing, 3D detector, robotic arm and more. Achieving the intelligent production goal of unmanned manufacturing factory and small-volume large-variety productivity.

FANUC 3D area sensor | Robot arm | Auto. accuracy inspection

Automatic Production System

Combining automatic loading and unloading system, work-piece flipping station, and high speed tapping centers, Goodway provides the most efficient brake disk automatic production system in the market (offering solutions for different machining purposes).

1 Automatic feeding

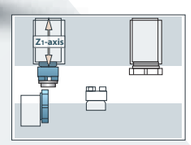
2 Synchronization on twin spindles

3 Automatic discharge

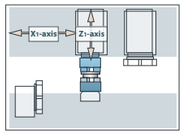
4 Work-piece flipping

5 High speed drilling and tapping

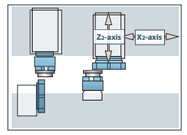
Machining Mode



Lower turret can cutting on 1st spindle



Both spindles can be programmed for synchronized parts catching.



Dual system can be programmed for synchronized turning.

		GVI-350
Max. swing diameter	mm	Ø 550
Max. turning diameter	mm	Ø 350
Max. turning height	mm	400
Chuck size		12"
Spindle nose		A2-8
Spindle motor output (cont. / 30 min.)	kW	11 / 15
X_1 / Z_1 axes travel	mm	750 / 550
X_2 / Z_2 axes travel	mm	550 / 550

Specifications are subject to change without notice.

SWISS Turning Centers

SW-II SERIES

+ New generation structure design, the cutting rigidity raise up 20% from previous model.
+ Maximum up to seven axes control. It can easy reach complex geometry shape cutting requested.
+ Hybrid guide bush design, bush or bushless mode can be selected according to different machining needs.
+ Max. machining diameter Ø 20 / Ø 32 mm, both sub and main spindle have same machining capacity.*1

*1 : Sub-spindle as optional

Model	5 axes	6 axes		7 axes
B-axis	–	S	–	S
Y_2-axis	–	–	S	S

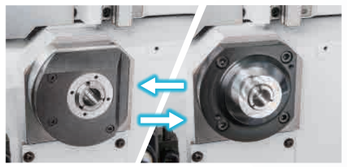
S : Standard – : Not Available

Online Video
SW-II cutting display

SW-20II is available with G.LINC 350 intelligence control system (opt.)

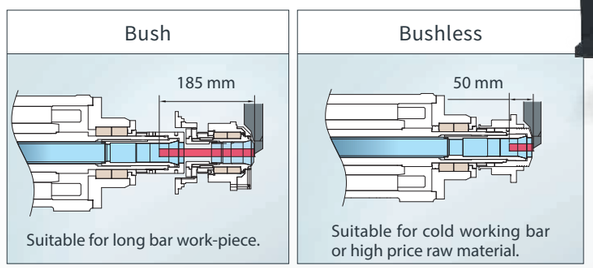
Hybrid Guide Bush

Special interface mechanical design of guide bush can be mounting or dismount base on actual situation. It is more flexible in use and save cost on facility and space in the factory.

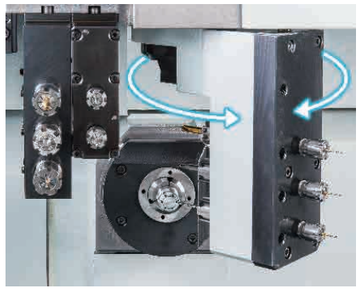


Bush Bushless

Remaining bar length



B-axis Machining Capability

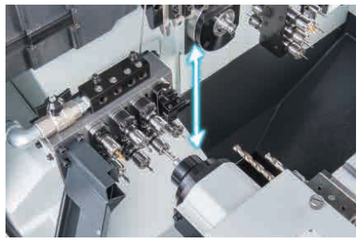


- The B-axis is driven by servo motor, the positioning accuracy can reach 0.001°
- SWII with B-axis function can machining not only specific angle hole, but high precise continuous contouring.

B-axis swivel angle :
- 135° (T32 without power driven tool)
- 120° (T32 with milling unit)
- 90° (T32 with 3-spindle drilling unit)

Number of tools : 3 (front) + 3 (rear)

Y_2-axis Machining Capability



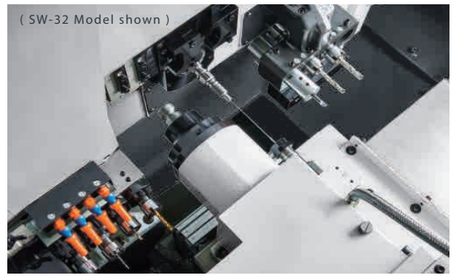
- With optional Y_2-axis function can proceed eccentric drilling, tapping, milling and different kind of complicated machining requirement.
- Rear-end tool holder is available with 8 tools of ER16 live tools which driven by AC servo motor with high torque output.

Deep Hole Drilling

- Sub spindle can equip with 2-tool of deep hole drills and it also can stratify the machining requirement of deep drill when choosing coolant through tool center.
- With high pressure coolant system, it can ensure the best deep hole drill performance.

Workpiece application

Tool diameter : Ø 1.32 mm
Tool length : 150 mm
High-pressure coolant system : 140 Bar
Material : SUS303



				SW-20II	SW-32II
Working range	Max. machining diameter		mm	Ø 20	Ø 32
	Max. turning length per chuck	Bush	mm	220	315
		Bushless	mm	50	80
	Rear-end max. length for front ejection		mm	80	130
Max. speed	Main spindle		rpm	10,000	7,000
	Sub-spindle		rpm	8,000	7,000
Number of tools	O.D. tool		T	6	6
	I.D. tool		T	4	4
	Cross live tools		T	5 ~ 10	5 ~ 10
	Rear-end tools		T	8	8
Shank size	O.D. tool		mm	□ 12	□ 16
	I.D. tool		mm	Ø 10	Ø 13

Specifications are subject to change without notice.

SWISS Turning Centers

SW SERIES

+ Max. machining diameter Ø 20 ~ Ø 42 mm, both spindle and sub-spindle have the same machining abilities*1
+ Hybrid guide bush design, bush or bushless mode can be selected according to different machining needs.
+ Work-piece is clamped by hydraulic cylinder which provides sufficient clamping strength and quick.
+ Complete tooling system enables front, cross, and rear cutting in one process*1
+ To equip with independent U-Drill device on sub spindle, it can achieve deep hole drilling with highly precise accuracy easily.

*1 Sub-spindle as optional

Online Video
SW cutting display

Complete Tool System

A O.D. tool B I.D. tool
C Live tool D Rear-end I.D. tool / Live tool

Tooling System		SW-20	SW-32	SW-42	
A O.D. tool		6	6	5	6
B I.D. tool	Front-end	4	4	5	5
	Rear-end	4 (max.)	4 (max.)	5	5
C Live tool*1	Cross	5 (max.)	5 (max.)	4	5
	Front-end / Rear-end	5 (max.)	5 (max.)	5	5

Backworking Tooling System		SW-20	SW-32	SW-42
D I.D. tool Live tool	Rear-end	4 (total)		

*1 The upper 3 positions are a fixed unit for cross milling and drilling, the bottom 2 positions can be increased up to front-end x5 and rear-end x2 live tools.

			SW-20	SW-32	SW-42
Working range	Max. machining diameter	mm	Ø 20	Ø 32	Ø 42
	Max. turning length per chuck (Bush)	mm	220	315	180
	Max. turning length per chuck (Bushless)	mm	50	80	110
	Rear-end max. length for front ejection	mm	80	130	110
Max. speed	Main spindle	rpm	10,000	7,000	6,000
	Sub-spindle	rpm	8,000	7,000	6,000
Number of tools	O.D. tool	T	6	6	5 / 6 (Opt.)
	I.D. tool	T	4	4	5
	Cross live tools	T	5 ~ 10	5 ~ 10	4 ~ 10
	Rear-end tools	T	4	4	4
Shank size	O.D. tool	mm	□ 12	□ 16	□ 20 / □ 16 (Opt.)
	I.D. tool	mm	Ø 10	Ø 13	Ø 13

Specifications are subject to change without notice.

Flexible Tooling System (For SW-20 / SW-32 only)

Standard

Cross live tool 5

Expansion

Front-end Live tool 4
Cross live tool 3

Expansion

Cross live tool 4
Front-end Live tool 3
Rear-end Live tool 3

SW-12 SERIES

SWISS Turning Centers

Solution for miniature part

+ Ø13mm, max. machining diameter, is special customized for precise miniature parts.
+ Compact structure design only cover 2.8 m² floor space.
+ 32 m/min. rapid feed rate of each axis will fasten the tool changing.
+ Equipped with 15,000 rpm high speed built in spindle motor*1
+ High flexible hybrid bush design.
+ Available with independent deep hole drill unit (opt.)

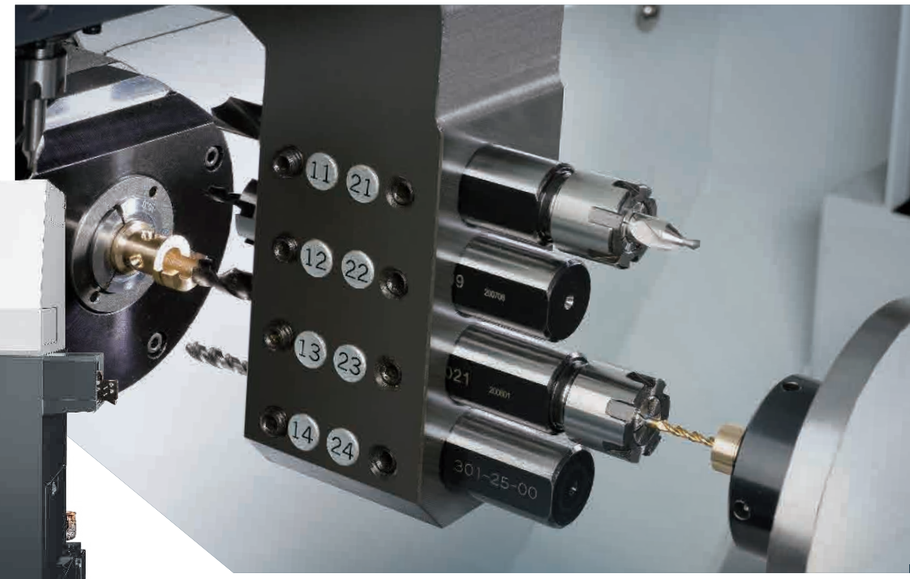
*1 : Sub-spindle adopt the same design as main spindle

			SW-12
Working range	Max. machining diameter	mm	Ø 13
	Max. turning length per chuck (Bush)	mm	140
	Max. turning length per chuck (Bushless)	mm	30
	Rear-end max. length for front ejection	mm	80
Max. speed	Main spindle	rpm	15,000
	Sub-spindle	rpm	15,000
Number of tools	O.D. tool	T	6
	I.D. tool	T	4
	Cross live tools	T	4
	Rear-end tools	T	4
Shank size	O.D. tool	mm	□ 10
	I.D. tool	mm	Ø 8

Specifications are subject to change without notice.

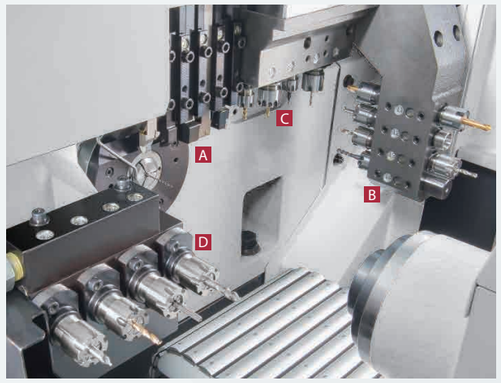
SWISS Turning Centers

SD SERIES



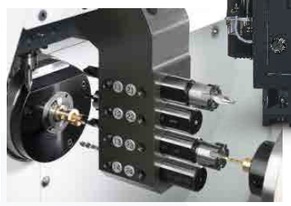
+ Compact structure design only cover 2.7 m^2 floor space.
+ Max. machining diameter Ø 16 ~ Ø 20 mm, max. chuck machining length 175 mm.
+ Designed with pneumatic system which is environmentally friendly, safe, and easy to maintain.
+ Hybrid guide bush design, bush or bushless mode can be selected according to different machining. (SD-20)
+ Sub-spindle automatic loading and unloading system, work-piece can be finished in one set-up which saves manpower cost.

Flexible Tooling System

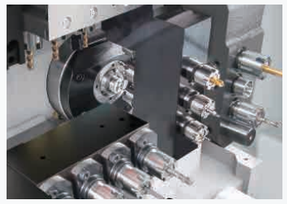


A O.D. tool B I.D. tool C Live tool
D Rear-end I.D. tool

Cross machining



Front / rear simultaneous drilling & tapping



Front off-center drilling & tapping

Front-end and rear-end working synchronization

Tooling System		SD-16		SD-20
A O.D. tool		6	5	6
B I.D. tool	Front-end	4		4
	Rear-end	4 (max.)		4 (max.)
C Live tool	Cross	2	3	4

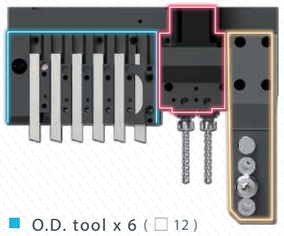
Backworking Tooling System		SD-16	SD-20
D I.D. tool	Rear-end	4 (total)	

			SD-16	SD-20
Working range	Max. machining diameter	mm	Ø 16	Ø 20
	Max. turning length per chuck (Bush)	mm	175	175
	Rear-end max. length for front ejection	mm	80	80
Max. speed	Main spindle	rpm	10,000	10,000
	Sub-spindle	rpm	8,000	10,000
Number of tools	O.D. tool	T	6 / 5 (Opt.)	6
	I.D. tool	T	4	4
	Cross live tools	T	2 / 3 (Opt.)	4
	Rear-end tools	T	4	4
Shank size	O.D. tool	mm	□ 12	□ 12
	I.D. tool	mm	Ø 10	Ø 10

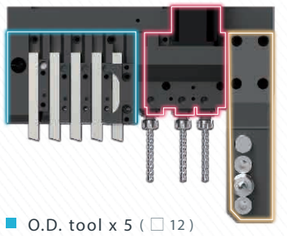
Specifications are subject to change without notice.

unit : mm

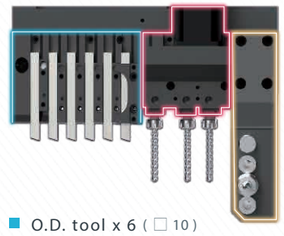
SD-16 Tooling System Variations



- O.D. tool x 6 (□ 12)
- Cross live tool x 2 (ER16)
- I.D. tool x 4

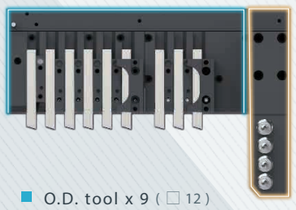


- O.D. tool x 5 (□ 12)
- Cross live tool x 3 (ER11)
- I.D. tool x 4

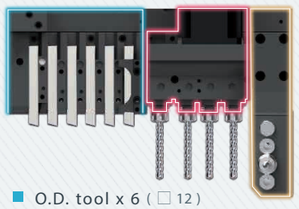


- O.D. tool x 6 (□ 10)
- Cross live tool x 3 (ER11)
- I.D. tool x 4

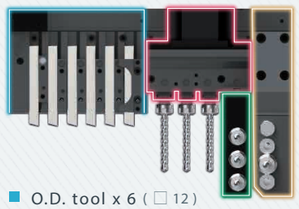
SD-20 Tooling System Variations



- O.D. tool x 9 (□ 12)
- I.D. tool x 4



- O.D. tool x 6 (□ 12)
- Cross live tool x 4 (ER16)
- I.D. tool x 4



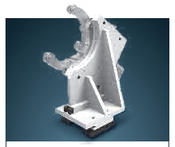
- O.D. tool x 6 (□ 12)
- Cross live tool x 3 (ER16)
- I.D. tool x 4
- Removable live tool holder x 1
  (front-end + rear-end offer 6 tool post,max.)

Flat-bed Turning Centers

HA SERIES

+ Developing for super large workpiece, Maxmum turning length is 10,000mm, max loading is 15,000kg.
+ One-piece wide span four box ways casting body, providing the ultra-rigidity and ability of anti-vibration.
+ X / Z axis are adopted with high rigid box way design. After Heat Treatment and precise grinding, the ability of heavy duty cutting is more significant.
+ Machine with standard high performance twin chip conveying system can ensure reliable and high efficient of ability on chip disposal.
+ The different type of steady rests are developing according to different machining character, they can ensure the support rigidity of big workpiece.

Complete Specification for Steady Rest



(Hydraulic)
Ø 125 ~ 460 mm*1

(Manual)
Ø 300 ~ 600 mm*1

(Manual)
Ø 500 ~ 800 mm

(Manual)
Ø 800~1,000 mm

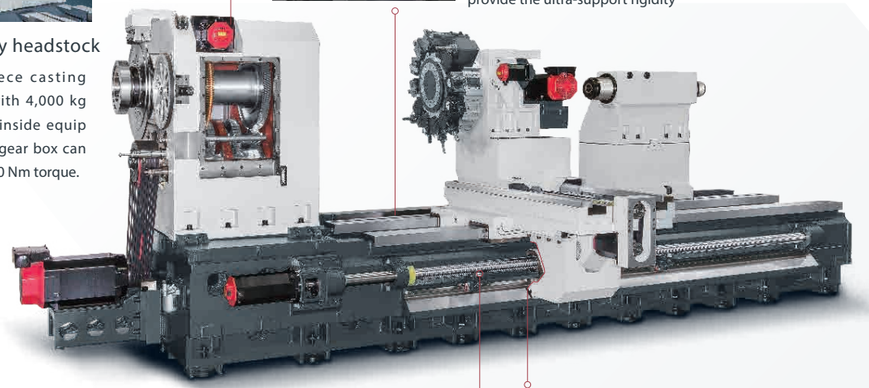
*1 The steady rest does not need to be removed during the working progress.

Heavy duty headstock

The one-piece casting headstock with 4,000 kg in total and inside equip with 3-steps gear box can provide 13,270 Nm torque.

Solid base with four box way

Separate box way design between X axis carriage and tailstock. And the tailstock can support the workpiece without crossing carriage, it can provide the ultra-support rigidity



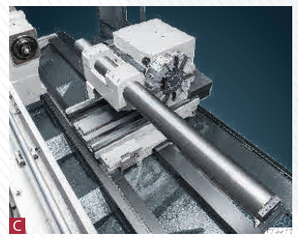
Ballscrew supportive structure

The Z-axis ball screw for the HA model with over 4,000 mm travel are equipped with supportive mechanism to ensure the stable axial accuracy.

Torque motor drive

HA model with over 6,000 mm travel, the Z-axis is upgraded to torque motor direct drive nut, it can provide the better dynamic response and motion stability.

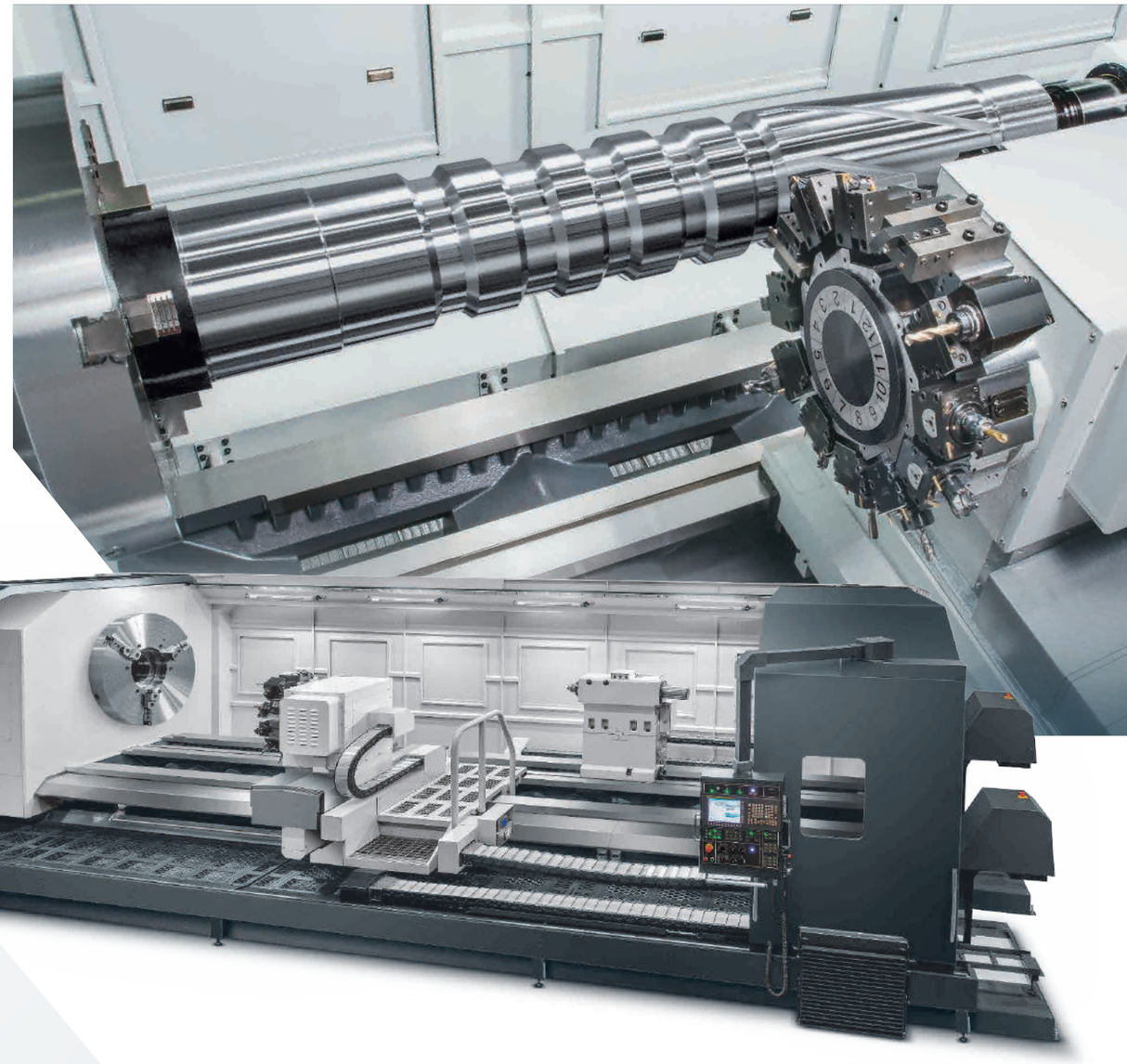
High Performance Optional Accessories



A Live tooling turret
Optional C-axis can provides the turning and milling complex machining fucntion.

B 4-way toolpost
Provide ultra-heavy duty cutting ability.

C Anti Vibration boring bar tool
To satisfy the deep boring machining requirement with high accuracy.



		HA-1400	HA-1600	HA-2000
Max. swing diameter	mm	Ø 1,400	Ø 1,600	Ø 2,000
Max. turning diameter	mm	Ø 1,100	Ø 1,300	Ø 1,700
Max. turning length	mm	2,000 / 3,000 / 4,000 / 5,000 / 6,000 / 7,000 / 8,000 / 9,000 / 10,000 *1		
Max. work-piece weight	kg	10,000 ~ 15,000 (Need to be supported by steady rest)		
Flat bed width	mm	1,350		
Spindle motor output	kW	37 / 45 (cont. / 30 min.)		
Turret / Live tooling turret station	T	8 or 12 / 12		
X-axis travel	mm	595	695	895
Z-axis travel	mm	2,150 / 3,150 / 4,150 / 5,150 / 6,150 / 7,150 / 8,150 / 9,150 / 10,150		
Tailstock base travel	mm	2,150 / 3,150 / 4,150 / 5,150 / 6,150 / 7,150 / 8,150 / 9,150 / 10,150		

*1 Please contact GOODWAY for larger size requirements.

Specifications are subject to change without notice.

Horizontal Turning Centers

GS-8000 SERIES

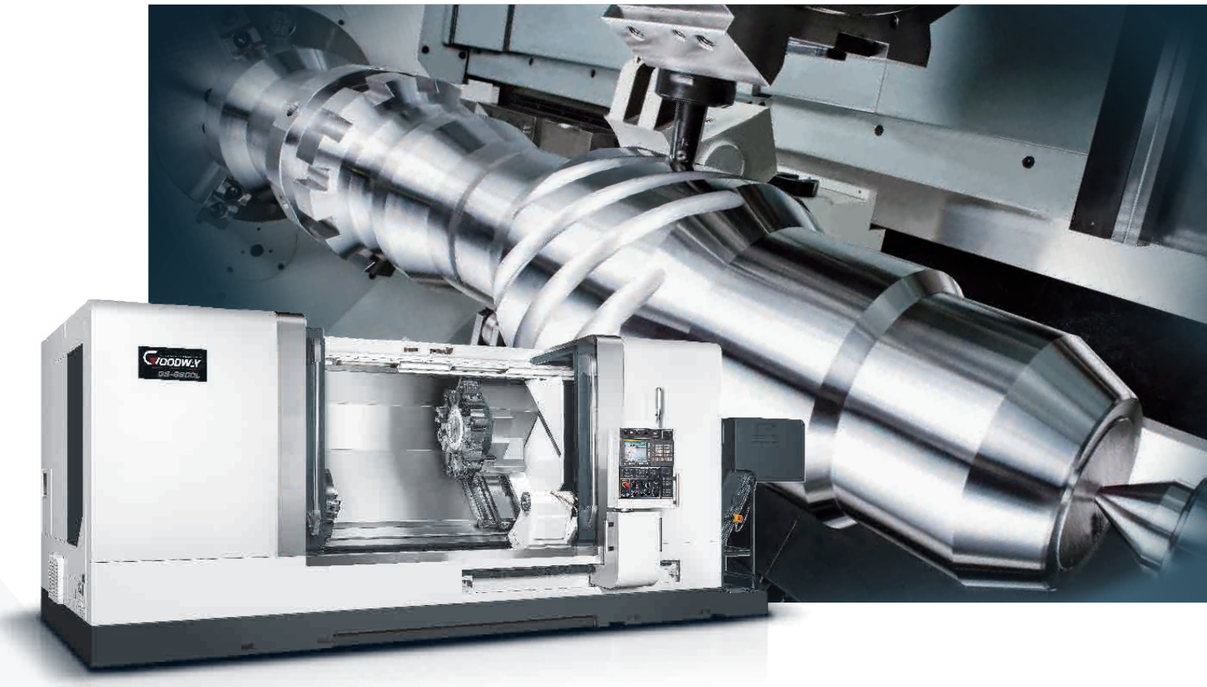
+ MEEHANITE casting body combines 30° saddle provides solid foundation for spindle head, turret, and tailstock.
+ X / Y / Z axes adopt high rigidity box ways, ensuring the best rigidity and precision with its wide span structure.
+ 45 kW high power spindle motor driven by 3-step gear box, torque can reach up to 7,330 Nm.
+ Ø 750 mm large size turret disk is indexed by Ø 450 mm curvic couplings, providing strong cutting ability.
+ Ø 160 mm rotary quill's tailstock combines sufficient hydraulic thrust provides stable support for work-piece.
+ Y-axis 320 mm travel range holds leading position in industry and is able to overcome any difficult machining mission easily. (opt.)

		GS-8000	GS-8300	GS-8600
Max. swing diameter	mm	Ø 1,030		
Max. turning diameter	mm	Ø 970		
Max. turning length	mm	1,200 / 2,200 / 3,200 / 4,200 / 5,200 / 6,200		
Chuck size		18" (Opt. 24")		
Bar capacity	mm	Ø 205	Ø 260	Ø 320
Spindle nose		A2-15	A2-15	A2-20
Spindle motor output	kW	30 / 45 (cont. / 15 min.)		
X / Y axes travel	mm	525 (Y-axis model : 515) / 320 = ±160		
Z-axis travel	mm	1,200 / 2,200 / 3,200 / 4,200 / 5,200 / 6,200		

Specifications are subject to change without notice.

Horizontal Turning Centers

GS-6000 SERIES



+ 45° low center gravity slant bed ensures high rigidity of this series.
+ X / Z axes adopt high rigidity box way and wide span structure to ensure best rigidity and precision.
+ 2-step gear box is driven by 37 kW motor spindle, torque can reach up to 4,912 Nm. (opt.)
+ Ø 750 mm large size turret disk is indexed by Ø 450 mm curvic couplings, providing strong cutting ability.
+ Ø 110 mm rotary quill's tailstock combines with sufficient hydraulic thrust provides stable support for work-piece.
+ Chucks are installed on both ends of spindle enables high precision threading for long bar. (opt.)

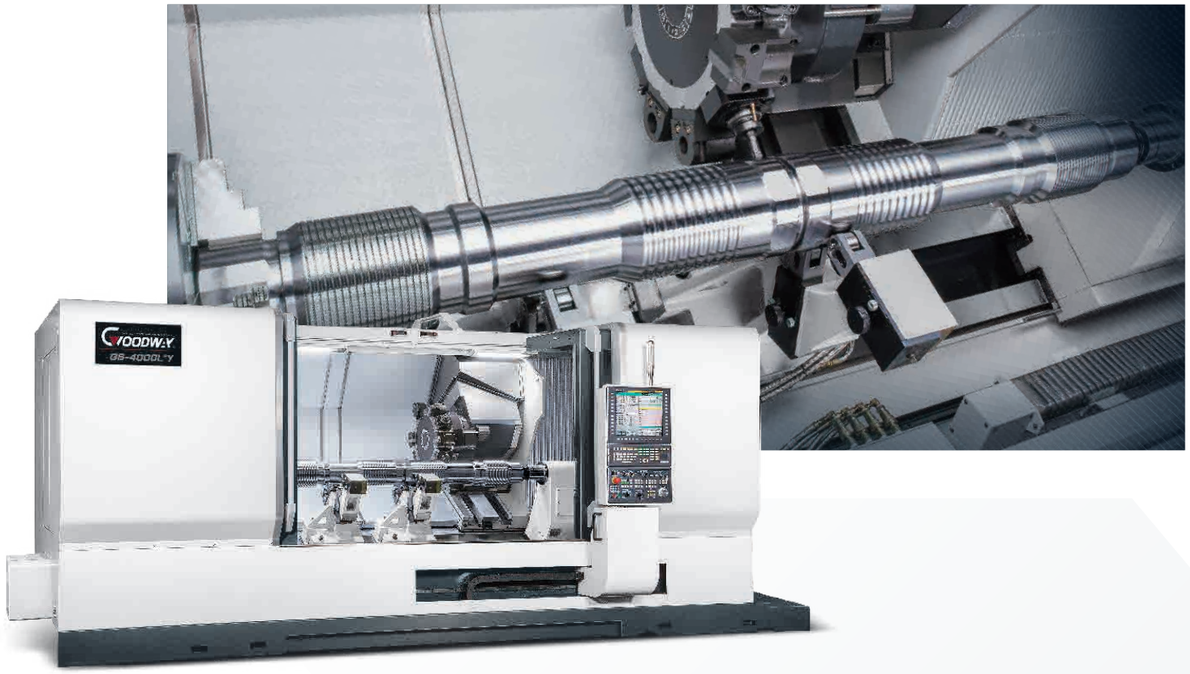
		GS-6000	GS-6600		GS-6800
Max. swing diameter	mm	Ø 980			
Max. turning diameter	mm	Ø 880			
Max. turning length	mm	950 / 1,965 / 3,300			
Chuck size		15" (Opt. 18")	20" *1	22"*2	24"*2
Bar capacity	mm	Ø 115	Ø 180	Ø 205	Ø 260
Spindle nose		A2-11	A2-15		A2-15
Spindle motor output	kW	30 / 37 (cont. / 30 min.)			
X-axis travel	mm	500			
Z-axis travel	mm	980 / 1,965 / 3,300			

*1 : Hydraulic chuck opt. *2 : Pneumatic chuck opt.

Specifications are subject to change without notice.

Horizontal Turning Centers

GS-4000 SERIES



+ Complete standard size, four different body length and two types of spindle bore provides a total of 8 combinations.
+ 30° low center gravity slant bed ensures high rigidity of this series.
+ X / Z adopt high rigidity box ways structure and wide span design to ensure best rigidity and precision.
+ 2-step gear box is driven by 37 kW motor spindle, torque output can reach 2,923 Nm. (GS-4300)
+ Big size turret disc is index by Ø 320 mm curvic coupling to provide strong rigidity.
+ Operation-friendly environment, operation panel can be rotated 90° manually and is carried to required position by linear guide way.

		GS-4000	GS-4300
Max. swing diameter	mm	Ø 770 (Y-axis model : Ø 700)	
Max. turning diameter	mm	Ø 650 (Y-axis model : Ø 460)	
Max. turning length	mm	819 / 1,569 / 2,369 / 3,169	
Chuck size		15" (Opt. 18")	20" (Opt. 24")
Bar capacity	mm	Ø 115	Ø 165
Spindle nose		A2-11	A2-15
Spindle motor output (cont. / 30 min.)	kW	30 / 37	
X / Y axes travel	mm	365 (Y-axis model : 300) / 120 = ±60	
Z-axis travel	mm	850 / 1,600 / 2,400 / 3,200	

Specifications are subject to change without notice.

Horizontal Turning Centers

GS-2000 / GS-3000 SERIES

+ 30° low center gravity slant bed ensures high rigidity structuration of this series.
+ X / Z axes adopts box ways structure and wide span design to ensure best rigidity and precision.
+ Optional high precision built-in spindle or high power belt-driven spindle which providing different processing request.
+ X / Z axes is directly driven by high-performance AC servo motor, rapid feed rate can reach 30 m/min.
+ 12 station servo turret ,adjacent / opposite tool changing only takes up to 0.3 and 0.8 sec.
+ High rigidity tailstock or high performance servo tailstock ensure best support for work-piece.

		GS-2000	GS-2600	GS-2800	GS-3300	GS-3600
Max. swing diameter	mm	Ø 630				
Max. turning diameter	mm	Ø 570				
Max. turning length	mm	780 / 1,530				746 / 1,496
Chuck size		8"	10"	10"	12"	15"
Bar capacity	mm	Ø 51	Ø 65	Ø 75	Ø 90	Ø 105
Spindle nose		A2-6	A2-8			A2-11
Spindle motor output (cont. / 30 min.)	kW	15 / 18.5		15 / 18.5	18.5 / 22	
X / Y axes travel	mm	300 (Y-axis model : 280) / 100 = ±50				
Z-axis travel	mm	780 / 1,530				

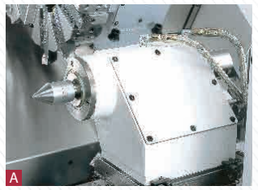
Specifications are subject to change without notice.

Horizontal Turning Centers

GA SERIES

+ MEEHANITE casting body combines 30° saddle provides solid foundation for spindle head, turret, and tailstock.
+ X / Z axes adopts high rigidity box ways structure and wide span design to ensure best rigidity and precision.
+ The spindle torque output is 2~4 times higher than other competitor machines.
+ 12 tool servo turret, adjacent/opposite tool changing only takes up to 0.2 and 0.5 sec.
+ Option live tooling turret and C-axis become turning center.

Turret disc is indexed by large diameter curvic coupling to give abundant cutting rigidity.

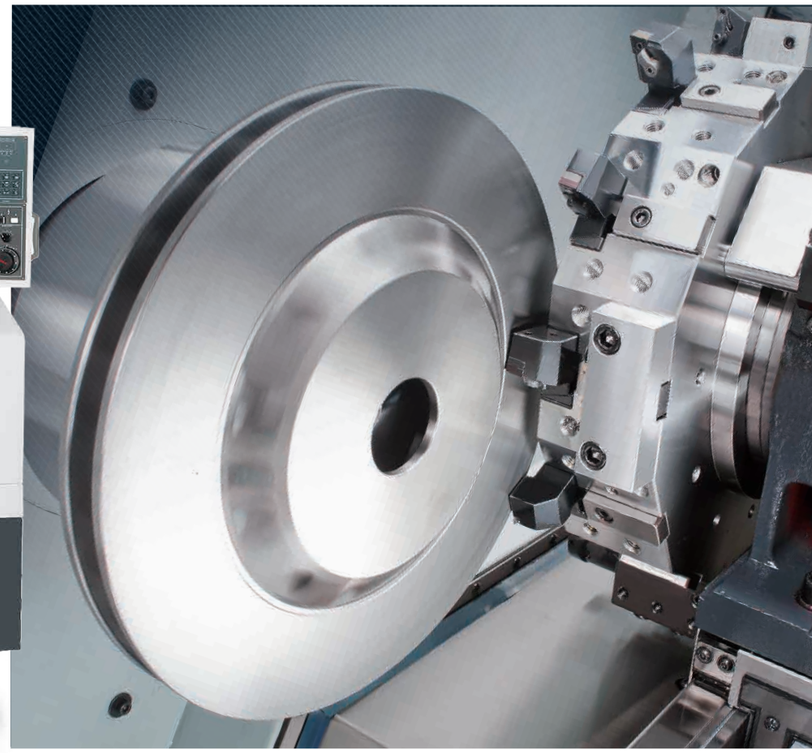


A

B

A Programmable tailstock design, both tailstock positioning and quill are programmable (optional live center)

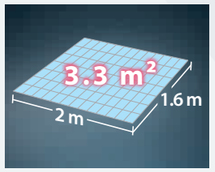
B Dual-face turning holder allows both side s of a workpiece, parallel precision is higher than traditional processing way , also decrease 50% turning time (GA-3000 optional)



GA-2000C SERIES

Compact Turning Centers

Thanks to compact structure, strong cutting ability and diversity automation production to make this series is appointed to adopt by international automobile factory.



Compact machine structuration, only 3.3 m^2 floor space.

Rear-exit chip conveyor can be integrated with central conveyor belt, to decrease the clean burden of operator.

Diversity automation production project, incl. robot, gantry loader, etc.

Cutting Test

GA-2000

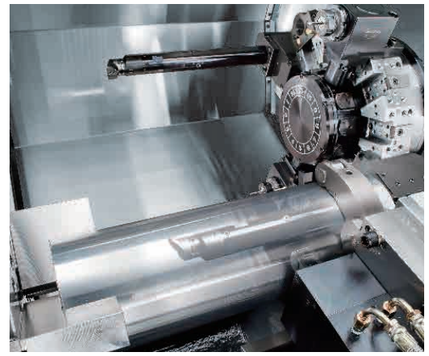
Material : S45C

O.D. Before Cut	O.D. After Cut	Spindle Speed	F / Rev.	Depth of Cut (side)	Spindle load
Ø 108 mm	Ø 96 mm	500 rpm	0.30 mm	6 mm	97 %

GA-3000

Material : S45C

O.D. Before Cut	O.D. After Cut	Spindle Speed	F / Rev.	Depth of Cut (side)	Spindle load
Ø 144 mm	Ø 120 mm	729 rpm	0.40 mm	12 mm	65 %



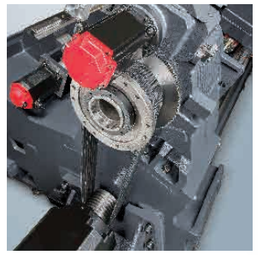
		GA-2000	GA-2600	GA-2800	GA-3000	GA-3300	GA-3600
Max. swing diameter	mm	Ø 580			Ø 600		
Max. turning diameter	mm	Ø 350			Ø 500		
Max. turning length	mm	309 / 624 / 1,204	291 / 606 / 1,186	260 / 575 / 1,155	629 / 929 / 1,229	624 / 924 / 1,224	596 / 896 / 1,196
Chuck size		8"	10"	10"	10" (12")	12" (15")	15"
Bar capacity	mm	Ø 51	Ø 65	Ø 75	Ø 75	Ø 90	Ø 105
Spindle nose		A2-6	A2-8				A2-11
Spindle motor output (cont. / 30 min.)	kW	11 / 15			18.5 / 22		
Turret / Live turret stations	T	12 (Opt. 10) / 12					
X-axis travel	mm	205			260		
Z-axis travel	mm	350 / 650 / 1,230			630 / 930 / 1,230		

Specifications are subject to change without notice.

Horizontal Turning Centers

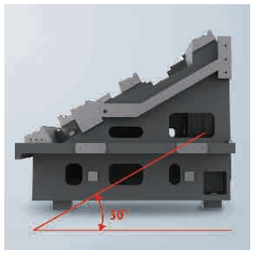
GLS-2800 SERIES

+ With complete compound processing ability, including live tooling turret, C-axis, sub-spindle and Y-axis function.
+ 30° low center gravity slant bed ensures high rigidity of this series.
+ X / Y / Z axes use high precision linear guide ways, with high accuracy, low wear, and quick movement characteristic.
+ X / Z axes are driven by high performance AC servo motor, rapid feed rate can reach up to 30 m/min.
+ 12 tool servo indexing turret, optional live turret, C-axis as turning centers are also available.



High Power Spindle

18.5 kW high power motor (GLS-3300) with spindle torque output up to 757 Nm, which can easily overcome all kinds of different materials.

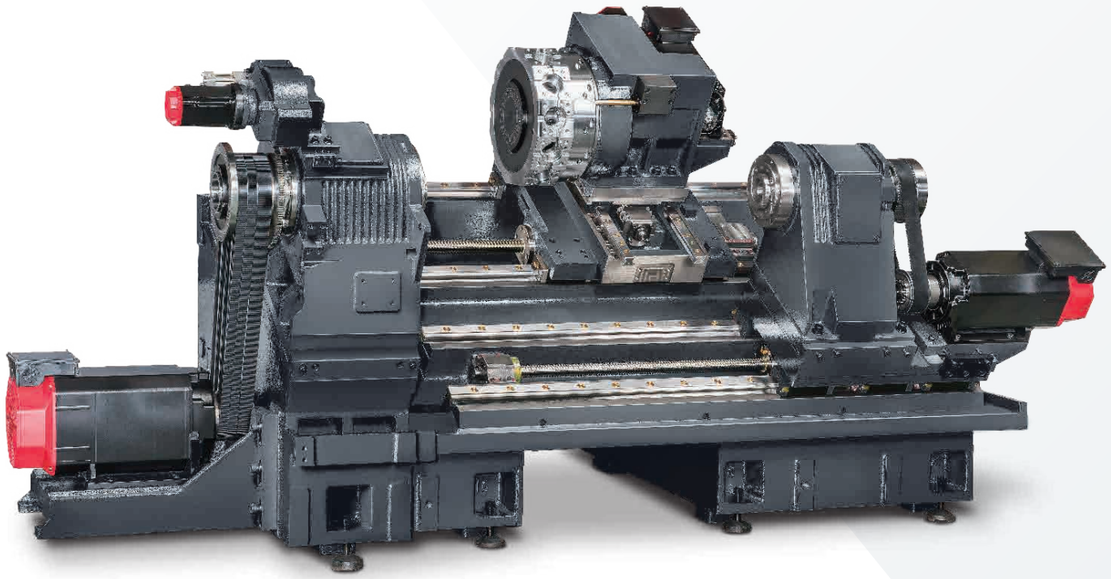


True Slant Bed Structure

The 30° true slant bed design provides superior support and heavy cutting ability, also excellent chips removal and convenient loading process.

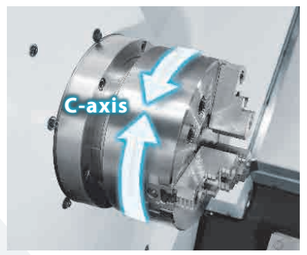
High Speed Linear Guide Ways

X / Z axes and Y-axis (opt.) utilize the high speed high precise linear guide way design to provide the optimal motion and efficiency.

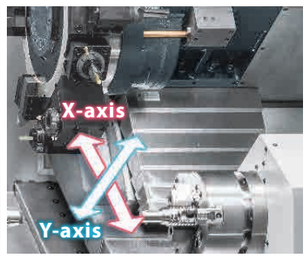


Complete Compound Processing Ability

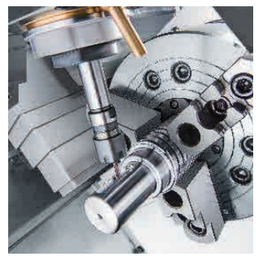
12-station live tooling turret



Cf-axis (driven by large torque servo motor)



Y-axis travel 100 mm



Sub-spindle (chuck size 8")

		GLS-2800	GLS-3300
Max. swing diameter	mm	Ø 760	
Max. turning diameter	mm	Ø 440	
Max. turning length	mm	722	713
Chuck size		10"	12"
Bar capacity	mm	Ø 75	Ø 90
Spindle nose		A2-8	A2-8
Spindle motor output (cont. / 30 min.)	kW	11 / 15	15 / 18.5
Turret / Live tooling turret stations	T	12 or 10 / 12 or 16	
X / Y axes travel	mm	250 (Live tooling turret model : 270) / 100 = ±50	
Z-axis travel	mm	750	

Specifications are subject to change without notice.

Horizontal Turning Centers

GLS-1500 SERIES

+ Compact machine structure, compound live turret, C-axis, sub-spindle, and Y-axis function.
+ 30° low center gravity slant bed ensures high rigidity of this series.
+ X / Y / Z axes use linear guide ways, providing high precision, low friction, and high speed movement.
+ X / Z axes are driven by high performance AC servo motor, rapid feed rate can reach up to 30 m/min.
+ 12 station servo turret, optional 24 tool turret, live turret, and gang tooling system are also available.

(Gang tooling system / GLS-1500G)

		GLS-1500	GLS-2000
Max. swing diameter	mm	Ø 560	
Max. turning diameter	mm	Ø 390	
Max. turning length	mm	330 / 630	
Chuck size		6" (Big-bore)	8" (Big-bore)
Bar capacity	mm	Ø 51	Ø 65
Spindle nose		A2-5	A2-6
Spindle motor output	kW	11 / 15 (cont. / 30 min.)	
Turret / Live tooling turret stations	T	10 or 12 or 24 / 12	
X / Y axes travel	mm	230 / 70 = ±35	
Z-axis travel	mm	330 / 630	

Specifications are subject to change without notice.

Horizontal Turning Centers

GLA SERIES

+ Compact machine structuration, only 2.8 m^2 floor space.
+ Integration casting combine with 30° saddle design to provide headstock , turret and tailstock strong machine base.
+ X / Z axes use linear guide ways, providing high precision, low friction, and high speed movement.
+ Rear-exit chip conveyor can save floor area, also convenient to integrated with central conveyor belt.
+ 12 station live tooling turret (6 for live tool holder) and high precision Cs-axis can be optional to become turning centers.

(GLA-1500 sereis w/ gantry type loading / unloading system)

		GLA-1500
Max. swing diameter	mm	Ø 520
Max. turning diameter	mm	Ø 200
Max. turning length	mm	250
Chuck size		6"
Bar capacity	mm	Ø 45
Spindle nose		A2-5
Spindle motor output (cont. / 30 min.)	kW	5.5 / 7.5
Turret / Live tooling turret stations	T	12 / 12 (6 for live tool holder)
X-axis travel	mm	120
Z-axis travel	mm	300

Specifications are subject to change without notice.

GA-3600/W24

High Performance Wheel Turning Machine

GA-3600/W24 can rapidly replace cam arms and ring locators to complete 1st and 2nd operations all at once. You can combine 2 sets GA-3600/W24 machines with a machining center and robot arm to form a high performance production line that is sure to meet your turning applications for aluminum wheels of today and tomorrow.


A


B

A Specialized aluminum wheel finger chuck

B GOODWAY ID. anti-vibration tool

	GA-3600/W24
Wheel size	13" ~ 24"
Max. swing diameter	Ø 930 mm
Max. turning length	Ø 680 mm
Spindle nose	A2-11
Spindle speed	2,500 rpm
Spindle motor output	45 kW
Turret station	10 T
Shank size	□ 32 mm / Ø 50 mm

Specifications are subject to change without notice.

GS-200 SERIES

High Performance Horizontal Turning Centers

+ High rigidity 30° box way slant bed.
+ 12 tool servo turret / programmable quill and tailstock.
+ Optional live tooling turret / sub-spindle / Y-axis.

	GS-200	GS-260	GS-280
Max. swing diameter	Ø 670 mm		
Max. turning diameter	Ø 420 mm		
Max. turning length	591 / 1,191 mm	560 / 1,160 mm	534 / 1,134 mm
Chuck size	8"	10"	10"
Hole through spindle	Ø 51 mm	Ø 65 mm	Ø 75 mm
Spindle nose	A2-6	A2-8	
Spindle motor output	11 / 15 kW (cont. / 30 min.)		
X / Y axes travel	240 mm (Y-axis model : 270 mm) / 110 = ±55 mm		
Z-axis travel	600 / 1,200 mm		
X / Z axes rapid feed rate	20 / 24 m/min.		

GLS-150 SERIES

High Speed Horizontal Turning Centers

+ High rigidity 30° slant bed.
+ 12 tool servo turret / programmable tailstock.
+ Optional live tooling turret / Y-axis.

	GLS-150	GLS-200
Max. swing diameter	Ø 500 mm	
Max. turning diameter	Ø 360 mm	
Max. turning length	500 mm	
Chuck size	6" (Big-bore)	8" (Big-bore)
Hole through spindle	Ø 51 mm	Ø 65 mm
Spindle nose	A2-5	A2-6
Spindle motor output	11 / 15 kW (cont. / 30 min.)	
X / Y axes travel	210 (Y-axis model : 195) / 70 = ±35 mm	
Z-axis travel	520 mm	
X / Z axes rapid feed rate	30 m/min.	

GCL-2 SERIES

High Performance Lathe

+ Over 10,000 models sold worldwide.
+ Over 30 years of user experience.
+ Low gravity box way structure.

	GCL-2
Max. swing diameter	Ø 400 mm
Max. turning diameter	Ø 230 mm
Max. turning length	300 / 600 mm
Chuck size	8"
Spindle nose	A2-6
Spindle motor output	11 / 15 kW (cont. / 30 min.)
X-axis travel	125 mm
Z-axis travel	320 / 620 mm
X / Z axes rapid feed rate	20 m/min.

TS-150 SERIES

High Speed Gang Type Turning Centers

+ Compact structure for small foot-print.
+ Standard with gang tooling, servo turret and live tooling turret are options.
+ High rigidity 30° slant bed.

	TS-150
Max. swing diameter	Ø 330 mm
Max. turning length	290 mm
Bar capacity	Ø 45 mm
Chuck size	6" or 42 collet
Spindle motor output	5.5 / 7.5 kW (cont. / 15 min.)
X / Z axes travel	305 / 320 mm
X / Z axes rapid feed rate	24 m/min.

Specifications are subject to change without notice.

GRINDERS

GRU Series
Plunge CNC Cylindrical Grinder P21

Max. external grinding dia.
Ø 190 mm

GRA Series
Angular Cylindrical Grinder P21

Max. external grinding dia.
Ø 190 mm

GRW Series
Traveling Head Cylindrical Grinder P23

Max. external grinding dia.
Ø 400 mm

GRC Series
Center Hole Grinder P24

Work-piece length
50 ~ 1,500 mm

SWISS TURNING CENTERS

SW-42 Series
Max. Performance SWISS Turning Centers P43

Max. machining dia.
Ø 42 mm

SW-32 Series
Max. Performance SWISS Turning Centers P43

Max. machining dia.
Ø 32 mm

SW-32II Series
Multi-tasking SWISS Turning Centers P41

Max. machining dia.
Ø 32 mm

SW-20 Series
Max. Performance SWISS Turning Centers P43

Max. machining dia.
Ø 20 mm

SW-20II Series
Multi-tasking SWISS Turning Centers P41

Max. machining dia.
Ø 20 mm

SWISS TURNING CENTERS

SW-12 Series
Multi-tasking SWISS Turning Centers P44

Max. machining dia.
Ø 13 mm

SD Series
Compact SWISS Turning Centers P45

Max. machining dia.
Ø 20 mm

VERTICAL TURNING CENTERS

SUPER GV Series
Super Size Vertical Turning Centers P31

Table diameter
Ø 2,000 ~ 8,000 mm

GV-1 Series
Heavy Duty Vertical Turning Centers P33

Table diameter
Ø 1,100 ~ 2,000 mm

GVF Series
Super Rigid Vertical Turning Centers P34

Table diameter
Ø 1,100 ~ 2,000 mm

VERTICAL TURNING CENTERS

GV-1000 Series
Super Rigid Vertical Turning Centers P35

Chuck size | 18" ~ 32"

GV-780 Series
High Speed Vertical Turning Centers P37

Chuck size | 15" / 18"

GV-500 Series
High Speed Vertical Turning Centers P38

Chuck size | 12" / 15"

GVI Series
Inverted Vertical Combination Turning Centers P39

Chuck size | 12"

WHEEL TURNING CENTERS

GA-W Series
High Performance Wheel Turning Machine P59

Chuck size | 15"

MULTI-AXIS TURNING CENTERS

GTH Series
Parallel Twin Spindles Turning Centers P27

Chuck size | 10"

GTW Series
Turret / Gang Tooling Turning Centers P25

Chuck size | 6"

GTZ Series
Twin Spindles & Turrets Turning Centers P29

Chuck size | 6" / 8"

GTS Series
Twin Spindles & Turrets Turning Centers P30

Chuck size | 6" / 8" / 10"

HORIZONTAL TURNING CENTERS

HA Series
Flat-bed Turning Centers P47

Chuck size | 24" ~ 63"

GS-8000 Series
Heavy Duty Super Size Turning Centers P49

Chuck size | 18" / 24"

GS-6000 Series
Heavy Duty Turning Centers P50

Chuck size | 15" ~ 24"

GS-4000 Series
Maximum Performance Turning Centers P51

Chuck size | 15" ~ 24"

GS-3000 Series
Maximum Performance Turning Centers P52

Chuck size | 12" / 15"

HORIZONTAL TURNING CENTERS

GS-2000 Series
Maximum Performance Turning Centers P52

Chuck size | 8" / 10"

GS-200 Series
Ultra Performance Turning Centers P59

Chuck size | 8" / 10"

GA Series
High Performance Turning Centers P53

Chuck size |
GA-2000 : 8" / 10"
GA-3000 : 10" / 12" / 15"

GCL-2 Series
High C/P Value Lathe P60

Chuck size | 8"

GLS-3300 Series
High Speed Turning Centers P57

Chuck size | 12"

HORIZONTAL TURNING CENTERS

GLS-2800 Series
High Speed Turning Centers P57

Chuck size | 10"

GLS-1500 Series
High Speed Turning Centers P58

Chuck size | 6" / 8"

GLS-150 Series
High Speed Turning Centers P59

Chuck size | 6" / 8" / 10"

GLA Series
High Speed Turning Centers P36

Chuck size | 6" / 8"

TS-150 Series
Gang Type Turning Centers P59

Chuck size | 6"

THE ULTIMATE MACHINING POWER

WOODWAY®

Nederland

BUN Engineering Nederland B.V.
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