

# TSUGAMI

■ CORPORATE PROFILE OF PRECISION TSUGAMI

**This Is Always.**

TSUGAMI will be always developing  
"the best Speed & the best Quality" machines.

Message

High-Precision

**PRECISION**

High-Speed

High-Rigidity

**TSUGAMI**

### Accuracy, Speed and Rigidity

TSUGAMI is recognized worldwide for superior precision machine tools.

TSUGAMI has supplied unique products with High speed, High accuracy, and Superior rigidity since the inauguration of the company in 1937. We trust that our valued customers have long been satisfied with the excellence of our products.

We devote much of our energy to research and development. This is based on our many years of experience, our exposure to ever changing technology, and the needs of our worldwide customer base. We also invest in efforts to make the use of our products "worry free" with continuously expanding after sales services and technical assistance.

We actively pursue technical innovation in consideration of first hand information collected from our customers and the advanced technology needs of new industries.

We believe that our products will contribute to your production goals and lead to remarkable benefits for you.

Chairman & CEO  
Takao Nishijima

TSUGAMI is the synthetic machine tool builder for small & high-precision machines.  
**We offer total production system.**

### CNC PRECISION AUTOMATIC LATHE



Automatic Lathe

● CNC PRECISION AUTOMATIC LATHE B0205- II



Automatic Lathe

● CNC PRECISION AUTOMATIC LATHE B0266- II / B0326- II



Automatic Lathe

● CNC PRECISION AUTOMATIC LATHE B0385L



Automatic Lathe

● CNC PRECISION AUTOMATIC LATHE B020M



Turning center

● CNC PRECISION TURNING CENTER TMA8-IV

### PRECISION MACHINING CENTER



High speed vertical machining center

● HIGH SPEED VERTICAL MACHINING CENTER VA1- II



Horizontal machining center

● HIGH SPEED VERTICAL MACHINING CENTER VA32A



**PRECISION GRINDING MACHINE**



**CNC grinding machine**  
● CNC PRECISION CYLINDRICAL GRINDING MACHINE G350



**CNC grinding machine**  
● CNC PRECISION CYLINDRICAL GRINDING MACHINE G18-II



**Small-size grinding machine**  
● Linear Drive Variant Thread Grinding Machine FTG18TL

**PRECISION THREAD AND FORM ROLLING MACHINE**



**Thread and form rolling machine**  
● CNC PRECISION THREAD AND FORM ROLLING MACHINE R17NC-II



**Thread and form rolling machine**  
● CNC PRECISION THREAD AND FORM ROLLING MACHINE R7NC



**ROLL DIES**



**Block gauge**

**OTHER PRODUCTS**

**Used for parts machining of following industries:  
Automotive, Small motor, Digital AV  
(Digital camera, HDD, Printer, DVD),  
Communication (Cellular phone, Optical connector),etc.**

# PRODUCTS GUIDE

High-Precision  
High-Speed  
High-Rigidity



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# Automatic lathe

## Bar Work

### Opposed gang-tool slides type

Max. machinable dia.	$\phi 1$ $\phi 3$	$\phi 1$ $\phi 3$	$\phi 7$ $\phi 12$ $\phi 20$	$\phi 12$ $\phi 20$	$\phi 12$ $\phi 20$	$\phi 26$ $\phi 32$	$\phi 38$	$\phi 38$	$\phi 16$	$\phi 16$
Page	P13	P13	P12	P12	P12	P10	P13	P13	P13	P13
Max. number of tools	14	14	13~17	21	25	39/43	20	20	21	17
Back spindle	×	○	○	○	○	○	○	○	○	○
Cross-rotary tools	○	○	○	○	○	○	○	○	○	○

## Bar Work

## Bar Work & chuck work

## Chuck Work

	Opposed gang-tool slides type		Opposed gang-tool slides type, B axis		Gang tool slide & turret (sliding head stock)		Tool spindle B-axis		Opposed Turret (fixed head stock)		Turret (fixed head stock)	
Max. machinable dia.	$\phi 20$	$\phi 26$ $\phi 32$	$\phi 20$	$\phi 26$ $\phi 32$	$\phi 20$	$\phi 38$	$\phi 20$	$\phi 25$	$\phi 42$ $\phi 51$	$\phi 42$	$\phi 51$	
Page	P15	P15	P11	P11	P15	P14	P14	P15	P15	P15	P15	
Tool post style	35~39	24	35	38	Gang tool+12pos.turret	Gang tool+8pos.turret		8pos.turret×2	12pos.turret	12pos.turret	12pos.turret	
Back spindle	○	○	○	○	○	○	○	×	×	○	○	
Cross-rotary tools	○	○	○	○	○	○	○	×	×	○	○	

## Chuck work

## Bar work & Chuck work

## Bar work

## Turning center

Chucking capacity	3,4 inch	3 inch	4 inch	6 inch	$\phi 15$	$\phi 38$	8 inch	$\phi 51$
Page	P16	P17	P17	P17	P16	P18	P19	P19
X-Z axis stroke	300×150	150×150	220×220	300×300	300/300×150/120	Turret+30ATC	30ATC	Turret+30ATC
Least input increment	0.01 $\mu$ m	0.01 $\mu$ m	0.01 $\mu$ m	0.1 $\mu$ m	0.01 $\mu$ m	○	○	○
Tool storage capacity						Turret+Tool spindle with B axis	Tool spindle with B axis continuous index	Turret+Tool spindle with B axis
Back spindle								
Tool post style								

# Machining center

## Vertical machining center

## Horizontal machining center

### 4-face machine









### 4-face machine

### 5-face machine







Spindle I.D. taper	7/24 taper S20T	7/24 taper No.30	1/10 taper	7/24 taper No.40	7/24 taper No.40
Page	P20	P21	P21	P21	P21
X-Y-Z axis stroke	360×260×250	400×300×250	400×300×250	360×330×400	560×350×500
Table size	500×330	840×380	840×380	300	8P:450 10P:300
Max. allowable weight on table	200kg	150kg	150kg	80kg	8P:250kg 10P:80kg
Spindle speed	30,000min <sup>-1</sup>	20,000min <sup>-1</sup>	50,000min <sup>-1</sup>	10,000min <sup>-1</sup>	10,000min <sup>-1</sup>



# Grinding Machine

	CNC Cylindrical Grinding Machine G18 series			CNC Cylindrical Grinding Machine G300 series			CNC Cylindrical Grinding Machine G350 series		
	Basic		Minimized operation	Basic		Minimized operation	Thread grinding	Basic	
	Straight	Angular	Swivel, twin wheel	Straight	Angular	Swivel, twin wheel	Simultaneous 3-axis control	Straight	Angular
									
	<b>G18-II</b>		<b>G18-IIFB</b>	<b>G300</b>		<b>G300F</b>	<b>G300T</b>		<b>G350</b>
Distance between centers	250		60	300   500		500   1000	300   500		300   500
Page	P22		P22	P23		P24	P24		P23
Swing	180		180	300		300	300		350
Wheel O.D.	355		305	Straight 405   Angular 510		455	405   355		610
Wheel spindle motor	2.2kW		2.2kW	7.5kW		7.5kW	3.7kW		11.0kW
	Thread grinding		Small Grinding Machine		Carbide tool Grinding Machine				
	Linear Drive		O.D. grinding	I.D. grinding					
									
	<b>FTG18TL</b>		<b>CGD150-II IGD150-II</b>		<b>CTG4</b>				
Distance between centers	100		150	I.D.22					
Page	P23		P24		P24				
Swing	180		105		Max. dia 30				
Wheel O.D.	200		125	I.D.:φ3~φ22	75				
Wheel spindle motor	1.5/3.7kW		0.2kW	0.2kW	0.2kW				

# Thread rolling machine

	Precision thread and form rolling machine										
	In-feed	Through-feed	In-feed	Through-feed	In-feed	In-feed	Through-feed	In-feed			
											
	<b>R7NC</b>		<b>R17NC-II</b>		<b>R6A</b>		<b>R16A/B-II</b>		<b>R30A</b>		
Max. rolling pressure	7 ton		17 ton		6 ton		16 ton		30 ton		Roll dies
Page	P25		P25		P26		P26		P26		P27
Max. rolling O.D.	φ45   φ10		φ75   φ40		φ45		φ75   φ40		φ100		
Max. rolling dies O.D.	φ160		φ200		φ150		φ200		φ210		
Spindle O.D.	φ54		φ54		φ54		φ54		φ85		
Spindle motor	2.5kW×2		3kW×2		1.5kW		7.5kW		11kW		

# Other Products

## Gauge block



P27

# CNC PRECISION AUTOMATIC LATHE Bar Work Machine

Best for mass production of high-precision small components; such as parts for office automation (OA) equipment, medical equipment, digital camera, cellular phone, optical communications, and automobile.



## AUTOMATIC LATHE

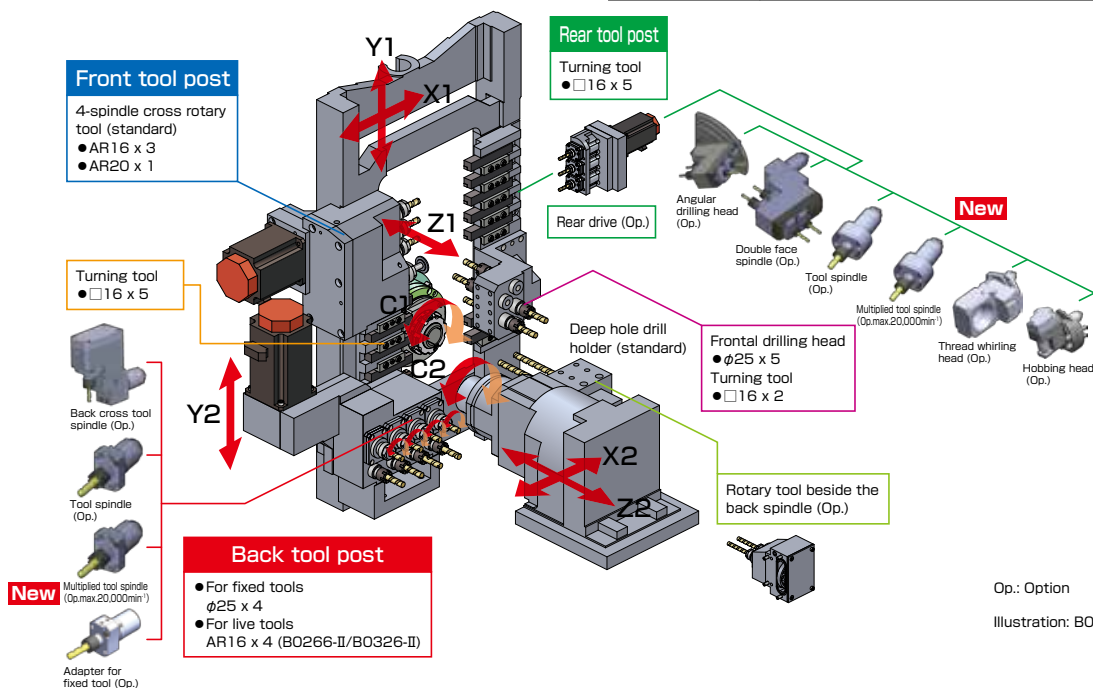


### CNC PRECISION AUTOMATIC LATHE B0265/266/325/326-II

Perfectly corresponds to the contemporary market requirement  
Multifunctional swissturn with reliable and accomplished opposed gang tool post

- Machine complex parts using the main and back spindle simultaneously with the Y-axis tool post (B0266-II/B0326-II).
- Modular tooling using cartridge type live tools (option) for optimum allocation of machining capability.
- Beside the back spindle, additional tool post is attached. Deep hole drilling (up to 100 mm) can be realized. In addition, by adopting optional rotary tool beside the back spindle, the ability of front off-center machining is increased.
- Optional direct-drive rotary guide bushing provides high speed and accurate machining.
- Guide-bush type or guide-bushless type is selectable according to workpieces.
- Pursuing operability thanks to enriched standard softwares
- Automatic programming system prepared as standard

	B0265-II	B0266-II	B0325-II	B0326-II
Max. machinable dia.	φ26mm		φ32mm	
Main spindle speed	200~10,000min <sup>-1</sup>		200~8,000min <sup>-1</sup>	
Back spindle speed	200~10,000min <sup>-1</sup>		200~8,000min <sup>-1</sup>	
Total number of tools	27/39	31/43	27/39	31/43
Rapid traverse rate	32m/min (X1, Y1:24m/min)			
Main spindle motor	3.7/5.5kW			
Width×Depth×Height	2,150×1,280×1,930mm			
Weight	3,500kg			



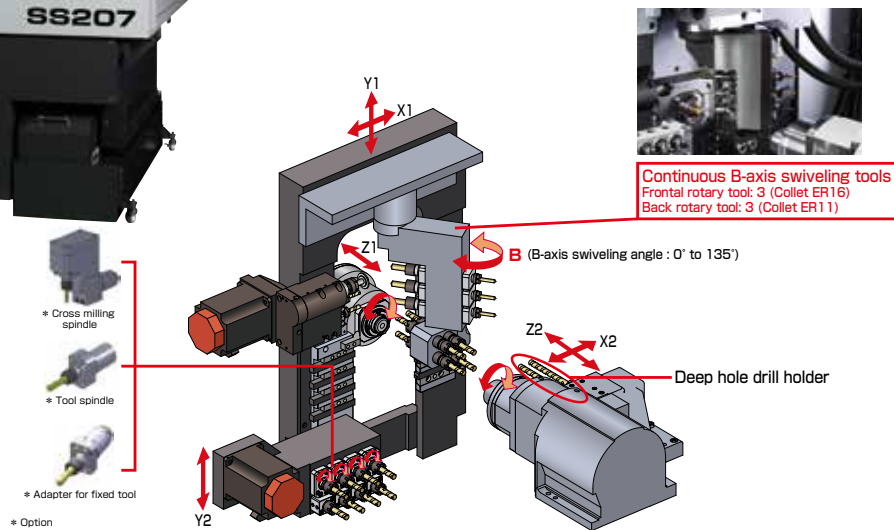
Op.: Option

Illustration: B0266-II/B0326-II

# CNC PRECISION AUTOMATIC LATHE SS207



**B-axis versatility for machining complex parts**



Thanks to the B-axis control, virtually any angle can be indexed and processed by NC programs

- Drilling
- Tapping
- End milling (with Y-axis control)

Simultaneous 4-axis machining with CAD/CAM

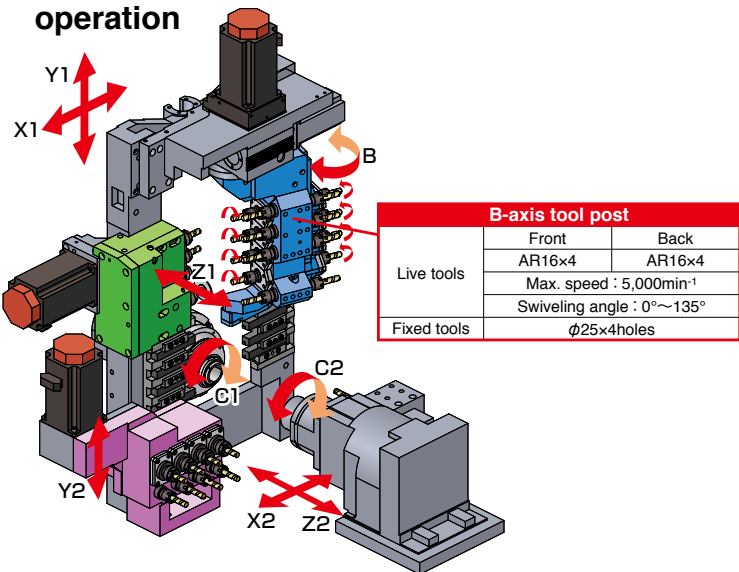
Thread whirling or hobbing is possible without a dedicated attachment thanks to the B-axis control.

	SS207
Max. machinable dia.	φ20mm
Main spindle speed	200~10,000min <sup>-1</sup>
Back spindle speed	200~12,000min <sup>-1</sup>
Total number of tools	35
Rapid traverse rate	Z1,Z2,X2: 32m/min, X1,Y1: 24m/min, Y2: 15m/min
Main spindle motor	2.2/3.7kW
Width×Depth×Height	2,110×1,200×1,885mm
Weight	3,300kg

# CNC PRECISION AUTOMATIC LATHE SS267/SS327



**Large diameter Swissturn with B-axis milling operation**



Diverse B-axis milling operations with 4 tools on the B-axis swiveling tool spindles

B axis can be indexed in arbitrary angle

- Drilling
- Tapping
- End milling (with Y-axis control)

Thanks to the multiplied tool spindle on the back tool post, efficient machining is realized on the small-hole drilling.

	SS267	SS327
Max. machinable dia.	φ26mm	φ32mm
Main spindle speed	200~10,000min <sup>-1</sup>	200~8,000min <sup>-1</sup>
Back spindle speed	200~8,000min <sup>-1</sup>	
Total number of tools	38	
Rapid traverse rate	32m/min (X1,Y1: 24m/min)	
Main spindle motor	3.7/5.5kW	
Width×Depth×Height	2,150×1,280×2,010mm	
Weight	3,600kg	



## CNC PRECISION AUTOMATIC LATHE B073/74/123/124/203/204-II

High-precision machining based  
on the theoretical design policy

- Optimum selection from 2 types, 3-axis or 4-axis type, according to a workpiece
- Realizing complex workpiece machining by the 2-spindle/3-spindle/4-spindle cross drill and the main spindle C-axis control (optional)
- The built-in motor is equipped on the back spindle of 4-axis type machine.

	B073-II	B074-II	B0123-II	B0124-II	B0203-II	B0204-II
Max. machinable dia.	φ7mm		φ12mm		φ20mm	
Main spindle speed	200~15,000min <sup>-1</sup>		200~12,000min <sup>-1</sup>		200~10,000min <sup>-1</sup>	
Back spindle speed	—	200~10,000min <sup>-1</sup>	—	200~12,000min <sup>-1</sup>	—	200~12,000min <sup>-1</sup>
Total number of tools	13	17	13	17	13	17
Rapid traverse rate	32m/min (X1: 24m/min)		32m/min (X1: 24m/min)		32m/min (X1: 24m/min)	
Main spindle motor	1.1/1.5kW		1.5/2.2kW		2.2/3.7kW	
Width×Depth×Height	1,400×1,035×1,700mm	1,640×1,080×1,700mm	1,640×1,080×1,700mm	1,640×1,035×1,700mm	1,640×1,080×1,700mm	1,640×1,035×1,700mm
Weight	1,400kg	1,700kg	1,400kg	1,700kg	1,400kg	1,700kg



## CNC PRECISION AUTOMATIC LATHE B0125/205-II

Front and back overlapped machining is possible  
Realizing shorter cycle time

- Front and back overlapped machining is possible with the back spindle and the back tool post.
- Prepared the 3-spindle/4-spindle cross drill, cross rigid tap, front rigid tap and back rigid tap (optional)
- Correspond to guide-bushing-less specification suited for short workpieces (optional)

	B0125-II	B0205-II
Max. machinable dia.	φ12mm	φ20mm
Main spindle speed	200~12,000min <sup>-1</sup>	200~10,000min <sup>-1</sup>
Back spindle speed	200~12,000min <sup>-1</sup>	
Total number of tools	21	
Rapid traverse rate	32m/min (X1: 24m/min)	
Main spindle motor	1.5/2.2kW	2.2/3.7kW
Width×Depth×Height	1,640×1,080×1,700mm	
Weight	1,700kg	



## CNC PRECISION AUTOMATIC LATHE B0126/206-II

Back tool post with Y axis on the compact body

- Thanks to the Y-axis of the back tool post, even the milling process on back side can be overlapped with front side.
- Prepared the 3-spindle/4-spindle cross drill, cross rigid tap, front rigid tap and back rigid tap (optional)
- Correspond to guide-bushing-less specification suited for short workpieces (optional)

	B0126-II	B0206-II
Max. machinable dia.	φ12mm	φ20mm
Main spindle speed	200~12,000min <sup>-1</sup>	200~10,000min <sup>-1</sup>
Back spindle speed	200~12,000min <sup>-1</sup>	
Total number of tools	25	
Rapid traverse rate	32m/min (X1: 24m/min, Y2: 15m/min)	
Main spindle motor	1.5/2.2kW	2.2/3.7kW
Width×Depth×Height	1,640×1,080×1,700mm	
Weight	1,750kg	

## CNC PRECISION AUTOMATIC LATHE

### BM164/165-II

Front and back overlapped machining is possible  
Realizing shorter cycle time  
Exclusive guide bushless machine



- Front and back overlapped machining is possible with the back spindle and the back tool post.
- A ceramic ball bearing is employed to the front bearing
- The ground bar is unnecessary. Cold-drawn bar can be used.

	BM164-II	BM165-II
Max. machinable dia.	φ16mm	
Main spindle speed	200~12,000min <sup>-1</sup>	
Back spindle speed	200~12,000min <sup>-1</sup>	
Total number of tools	17	21
Rapid traverse rate	32m/min (X1: 24m/min)	
Main spindle motor	1.5/3.7kW	
Width×Depth×Height	1,640×1,080×1,700mm	
Weight	1,700kg	

## CNC PRECISION AUTOMATIC LATHE

### P013H/33H/14H/34H

Optimum for mass production of fine precision parts



- High-speed and high-precision machining of parts with 0.05mm diameter or less
- High-speed main and back spindles: Maximum speed 25,000min<sup>-1</sup> (P013H/P014H)
- The chucking-force adjustable chucks of main and back spindles can clamp fine precision parts softly.
- Equipping user friendly softwares for machining small-dia. and fine precision parts: Tool height compensation function, Spindle zero offset system.
- Space saving design, floor space 0.8m<sup>2</sup>
- Provided high-speed dedicated bar feeder  
Applicable machine spindle speed: 25,000min<sup>-1</sup>

	P013H	P033H	P014H	P034H
Max. machinable dia.	φ1mm	φ3mm	φ1mm	φ3mm
Main spindle speed	25,000min <sup>-1</sup>	20,000min <sup>-1</sup>	25,000min <sup>-1</sup>	20,000min <sup>-1</sup>
Back spindle speed	—	—	25,000min <sup>-1</sup>	20,000min <sup>-1</sup>
Total number of tools	14			
Rapid traverse rate	20m/min			
Main spindle motor	0.75/1.1kW			
Width×Depth×Height	1,350×600×1,600mm			
Weight	1,000kg			

## CNC PRECISION AUTOMATIC LATHE

### B0385

Optimum for heavy duty machining from large diameter barstock



- TSUGAMI unique "Double Spindle" enables heavy duty machining and shortens the remnant length.
- Larger machining capability up to φ38.
- Rotary tools can be mounted on the rear tool post. (Option)  
Applicable for off-center machining with an attachment.
- Wide tooling zone. Easy set up and better chip disposal.
- The automatic programming system prepared as a standard accessory minimizes tool change time and generates the optimized tool path.

	B0385
Max. machinable dia.	φ38mm
Main spindle speed	200~6,000min <sup>-1</sup>
Back spindle speed	200~7,000min <sup>-1</sup>
Total number of tools	20
Main spindle motor	7.5/11kW
Back spindle motor	3.7/5.5kW
Width×Depth×Height	2,520×1,345×1,970mm
Weight	4,600kg

## CNC PRECISION AUTOMATIC LATHE

### B0385L

Exclusive guide-bushless machine



- Not required large diameter ground barstocks.
- Shortening remnant, and reducing material cost.
- Stable gripping force thanks to the drawback type collet chuck.
- Larger machining capability up to φ38.
- Rotary tools can be mounted on the rear tool post. (Option)  
Applicable for off-center machining with an attachment.
- Wide tooling zone. Easy set up and better chip disposal.
- The automatic programming system prepared as a standard accessory minimizes tool change time and generates the optimized tool path.

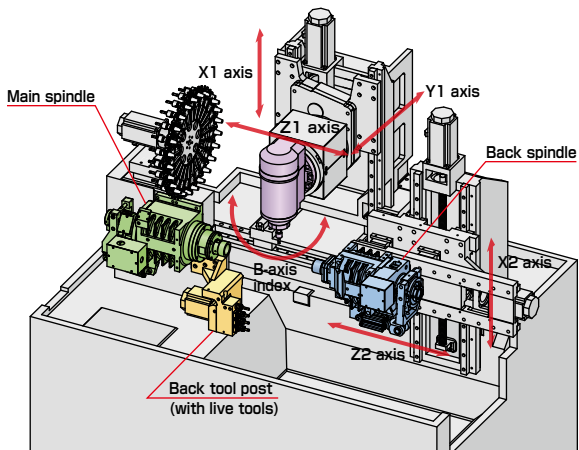
	B0385L
Max. machinable dia.	φ38mm
Main spindle speed	200~6,000min <sup>-1</sup>
Back spindle speed	200~7,000min <sup>-1</sup>
Total number of tools	20
Main spindle motor	7.5/11kW
Back spindle motor	3.7/5.5kW
Width×Depth×Height	2,520×1,345×1,970mm
Weight	4,600kg



## CNC PRECISION AUTOMATIC LATHE B020M/SS20M

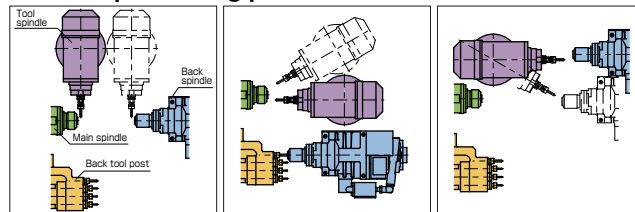
Perfect integration of vertical machining center and automatic lathe  
Optimum for mass production of complex-shaped parts from bar stock

- Performing higher complex machining with milling than vertical machining center thanks to multidirectional machining
- Front and back overlapped machining is possible.
- Various milling operations are realized thanks to 24-tool magazine and B-axis tool spindle.
- Diverse machining can shorten the cycle time.



	B020M	SS20M
Max. machinable dia.	φ20mm	
Main spindle speed	200~10,000min <sup>-1</sup>	
Tool spindle speed	300~30,000min <sup>-1</sup>	
Main spindle indexing	1 degree	C axis
B-axis index angle	0.001°	
Tool spindle taper	7/24taper 15T	
Tool storage capacity	24	
Width×Depth×Height	1,650×1,180×1,670mm	
Weight	2,000kg	

### Versatile processing patterns

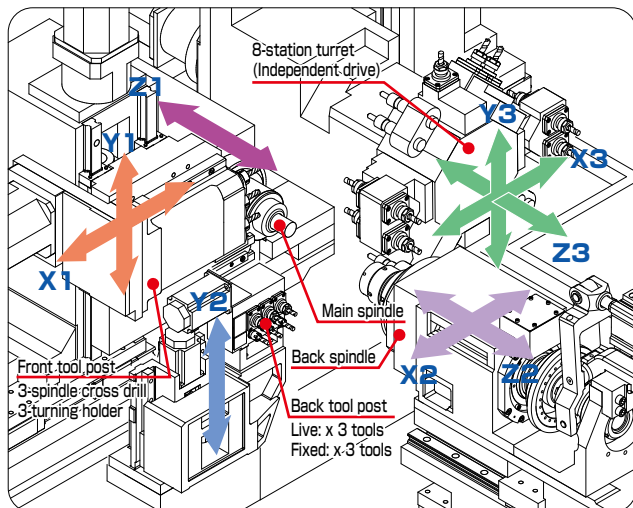


## CNC PRECISION AUTOMATIC LATHE B038T

Improved the milling capability on the complete processing aimed machine.  
Y-axis control on all tool posts of turret, front gang tool post and back tool post



- 8-station turret  
Mounting plural tools on one station, and achieving the quick tool change with Y-axis without turret indexing
- Back tool post equipping Y axis  
Milling with Y-axis can be performed by equipping live tools.  
Front milling with the tools on turret and back milling with the tools on back tool post can be simultaneously performed.
- 3-path control  
3-path control reduces the cycle time drastically.
- Tsugami's unique, highly rigid "Double Spindle" enables heavy-duty machining.
- Abundant tooling options facilitate the machining of complex-shaped workpieces.
- Using the automatic programming system (optional), 3-path control programs can be created with ease.



	B038T
Max. machinable dia.	φ38mm
Main spindle speed	200~5,000min <sup>-1</sup>
Back spindle speed	200~7,000min <sup>-1</sup>
Tool mounting type	Front tool post: gang tool post, Rear tool post: 8-station turret
Rapid traverse rate	X1,X2,X3,Y1,Y2,Y3,Z1,Z2,Z3:24m/min
Main spindle motor	7.5/11kW
Width×Depth×Height	3,427×1,875×1,840mm
Weight	6,200kg

## CNC PRECISION AUTOMATIC LATHE S205/206



Perfectly corresponds to the contemporary market requirement  
Multifunctional swissturn with reliable and accomplished opposed gang tool post

- Optimum tooling allocation is possible thanks to the cartridge type live tools on rear tool post and back tool post.
- Besides the back spindle, additional tool post is attached. Deep hole drilling can be realized.
- Corresponds to the machine without guide bushing that is appropriate for high accuracy processing of short workpieces (option).
- Spindle indexing time is reduced thanks to the direct C-axis function.
- Minimum tool change time is achieved with the optimized tool path created by the automatic programming system (standard).

	S205	S206
Max. machinable dia.	φ20mm	
Main spindle speed	200~10,000min <sup>-1</sup>	
Back spindle speed	200~12,000min <sup>-1</sup>	
Total number of tools	24	28
Rapid traverse rate	Z1,Z2,X2:32m/min, X1,Y1:24m/min, Y2:15m/min (Only for S206)	
Main spindle motor	2.2/3.7kW	
Width×Depth×Height	2,110×1,200×1,885mm	
Weight	3,200kg	3,300kg

## CNC PRECISION AUTOMATIC LATHE SUPER SWISSTURN SS26/32 SS32L



SWISS TURN with opposed tools for complicated workpieces  
Complete simultaneous machining in front and back with rotary tools

- Various tooling arrangement satisfying user needs  
Realized free arrangement of tool holders and rotary tools
- Wide tooling zone
- Long-stroke rotary guide bushing  
Stroke 270mm / Max. speed 10,000min<sup>-1</sup> (SS26)  
Stroke 320mm / Max. speed 8,000min<sup>-1</sup> (SS32)
- High efficiency and high precision machining with the guide bushing less spindle(SS32L)

	SS26	SS32	SS32L
Max. machinable dia.	φ26mm	φ32mm	φ32mm
Main spindle speed	200~10,000min <sup>-1</sup>	200~8,000min <sup>-1</sup>	200~8,000min <sup>-1</sup>
Back spindle speed	200~10,000min <sup>-1</sup>	200~8,000min <sup>-1</sup>	200~8,000min <sup>-1</sup>
Total number of tools	24		
Rapid traverse rate	Z1,Z2,X2:32m/min, X1,Y1,Y2:24m/min		
Main spindle motor	3.7/5.5kW		
Width×Depth×Height	2,020×1,675×2,020mm		
Weight	3,400kg		

## CNC PRECISION AUTOMATIC LATHE BH20Z



Drastically shortened cycle time with process overlapping  
Complex-shaped long workpieces can be machined efficiently.

- Drastically shortened cycle time with simultaneous machining of three tool posts; front tool post, rear turret and dedicated back tool post
- Increasing rotary tool abilities by 12-station turret with independent drive mechanism  
Minimized thermal displacement
- Complex-shaped workpieces can be completely machined using Max. 35 tools.
- Using the automatic programming system for BH (optional), 3-path control programs can be created with ease.
- Guide-bushing type or guide-bushing-less type (optional) selectable according to a workpiece

	BH20Z
Max. machinable dia.	φ20mm
Main spindle speed	200~10,000min <sup>-1</sup>
Back spindle speed	200~12,000min <sup>-1</sup>
Tool mounting type	Front tool post: gang tool post, Rear tool post: 12-station turret
Rapid traverse rate	X1,Y3:12m/min, Z3:18m/min, Y3:20m/min, Y1,Z1,X2,Z2:24m/min
Main spindle motor	2.2/3.7kW
Width×Depth×Height	2,480×1,585×1,733mm
Weight	4,500kg

## CNC PRECISION AUTOMATIC LATHE M42J/50J/M42SD



High rigidity 12-face turret and built-in motor spindle  
Easy operating barstock lathe

- High precision spindle Quick response built-in spindle  
Spindle cooling system is standard
- High rigidity turret  
Mounted big-diameter curvic coupling (Dia.200)
- High rigidity axis slide  
Rigid, wide and square slide guides are used
- Useful options are standard: Spindle synchronous control, Main/back-spindle rigid tap and Rotary tool rigid tap.(M42SD)

	M42J	M50J	M42SD
Max. machinable dia.	φ42mm	φ51mm	φ42mm
Main spindle speed	200~5,000min <sup>-1</sup>		
No. of turret face	12		
OD tool size	□20		
Rapid traverse rate	24m/min (Z axis)		
Main spindle motor	5.5/7.5kW		Main spindle: 5.5/7.5kW, Back spindle: 1.1/2.7kW
Width×Depth×Height	2,290×1,380×1,575mm		2,365×1,380×1,575mm
Weight	3,200kg		3,600kg

## CNC PRECISION AUTOMATIC LATHE MB25



Fixed headstock machine  
8-station×2 turrets performs powerful cutting of complicated workpieces

- Machining time is shortened 30 to 50% compared with our conventional machine.
- No idle time for tool selection by stand-by function of two turrets to prepare next indexing, simultaneous ID and OD or balanced OD machining possible.
- Idle time (chip to chip) is 1.5sec. (T1 turret) in case same turret index machining.

	MB25
Max. machinable dia.	φ25mm
Main spindle speed	50~6,000min <sup>-1</sup>
No. of turret stations	8-station turret×2
Rapid traverse rate	20m/min
Main spindle motor	3.7/5.5kW
Width×Depth×Height	1,550×1,580×1,520mm
Weight	2,800kg (Coolant tank excluded)

## CNC PRECISION AUTOMATIC LATHE M50SY-III



Applicable to complete machining for complicated parts with Y-axis control, C<sub>s</sub>-axis control and back spindle

- High motor output (11/7.5kW) shortens cycle time.
- High spindle speed acceleration: 2.5 sec. (0 to 5000min<sup>-1</sup>)
- "Non-lift indexing" turret reduces mechanical shock and cycle time.
- Turret indexing time: 0.3 sec.
- Rotary tools can be mounted on all 12 stations.

	M50SY-III
Max. machinable dia.	φ51mm
Main spindle speed	200~6,000min <sup>-1</sup>
Back spindle speed	200~6,000min <sup>-1</sup>
No. of turret stations	12-station turret
Rapid traverse rate	X:20m/min Z:24m/min Y:10m/min A:24m/min
Main spindle motor	7.5/11kW
Width×Depth×Height	2,700×1,560×1,720mm
Weight	5,900kg

# CNC PRECISION AUTOMATIC LATHE Chuck Work Machine

High precision processing machine for chuck work  
 Optimum machine for IT-related parts with which downsizing and precision progress further.



## AUTOMATIC LATHE



### CNC HIGH PRECISION AUTOMATIC LATHE C180

Minimum floor space and the higher productivity are achieved by the total design of the machine and the NC loader.

- High precision simultaneous processing of the front and back sides of a part are possible thanks to the symmetric arranged spindles and slides.
- Realizing high productivity thanks to high-speed machining by adopting the Tsugami's outstanding air-tube integrated spindle.

	C180
Swing over bed	220mm
X-Z axis stroke	300×150mm
Spindle speed	80~15,000min <sup>-1</sup>
Chuck size	3,4"
Least input increment	0.01μm
Spindle motor	1.5/2.2kW
Width×Depth×Height	1,560×1,545×1,700mm
Weight	2,200kg(Including loader x 2 pallets)



### CNC HIGH PRECISION AUTOMATIC LATHE CH154

Front/back machining can be performed on sole machine for production of high-precision parts.

- L & R spindle overlapped machining
- High-speed spindle rotation 15,000min<sup>-1</sup>
- No chuck air tube required: high-speed chuck work with less vibrations

	CH154
XL, XR strokes	300/300mm
ZL stroke	150mm
ZR stroke	135mm
Max. L spindle/R spindle speed	15,000min <sup>-1</sup>
L spindle chuck	Collet chuck (up to φ15)
R spindle chuck	3" diaphragm chuck
Least input increment	0.01μm
L spindle motor	1.5/2.2kW
R spindle motor	1.0/1.2kW
Width×Depth×Height	1,350×1,365×1,500mm
Weight	2,200kg





## CNC HIGH PRECISION AUTOMATIC LATHE C150

Space saving 1.0m<sup>2</sup> floor space  
New generation high precision gang  
tool slide lathe

- 1.0m<sup>2</sup> floor space includes NC loader and 2-pallet stocker Coolant tank with oil temperature controller
- Dimensional accuracy 0.2μm, 6σ=0.5μm
- Less thermal displacement 0.3μm

	C150(X), C150(X-Z)
Swing over bed	220mm
X-Z axis stroke	150×150mm
Spindle speed	80~15,000min <sup>-1</sup>
Chuck size	3"
Least input increment	0.01μm
Spindle motor	1.5/2.2kW
Width×Depth×Height	1,000×1,100×1,875mm *
Weight	1,400kg *

\* Loader included



## CNC HIGH PRECISION AUTOMATIC LATHE C220

Super precision mass production to  
sub-micron conditions  
Least input increment of 0.01μm

- **High precision machining**
  - Laboratory class machining for production facilities
  - High dimensional accuracy in roundness and cylindricity
  - Minimum displacement through pauses in production
- **One piece Chuck and spindle**
  - High speed spindle not influenced by traditional chuck actuation tube

	C220(X), C220(X-Z)
Swing over bed	260mm
X-Z axis stroke	220×220mm
Spindle speed	80~12,000min <sup>-1</sup>
Chuck size	4"
Least input increment	0.01μm
Spindle motor	2.2/3.7kW
Width×Depth×Height	1,500×1,370×1,590mm (Loader spec. 2,120mm)
Weight	2,300kg *

\* Loader included



## CNC HIGH PRECISION AUTOMATIC LATHE C300-III

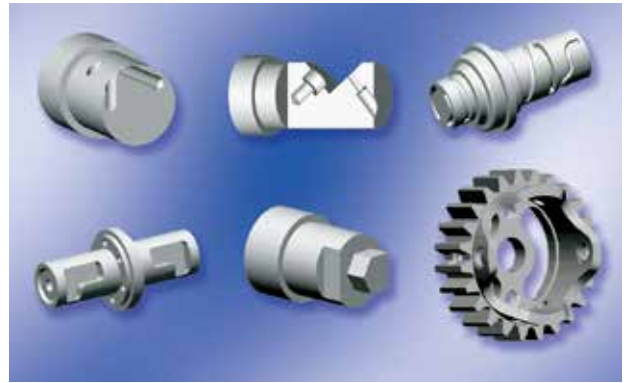
Responds flexibility to chuck work and bar work  
Enable to machine the next generation high  
accuracy parts

- Precision spindle, adopting built-in motor, performed high accuracy by reduction of noise and vibration
- Thermal influence reduced to equip spindle cooling unit as standard accessory
- Adopting the high-rigidity slide way on X and Z-axis achieved high precision machining
- Pretension is put upon the X-axis and Z-axis ball screws, and thermal displacement from the cold start can be reduced.

	C300-III, C300-III(X), C300-III(X,Z)
Swing over bed	260mm
X-Z axis stroke	300×300mm
Spindle speed	80~6,000min <sup>-1</sup> (OP. 7,000min <sup>-1</sup> )
Chuck size	6" (Max, bar stock dia. φ38.1)
Least input increment	0.1μm
Spindle motor	3.7/5.5kW
Width×Depth×Height	1,550×1,475×1,555mm
Weight	1,900kg

# PRECISION TURNING CENTER

The multiplex machine which performs turning and machining  
Best for processing complicated workpieces



# TURNING CENTER

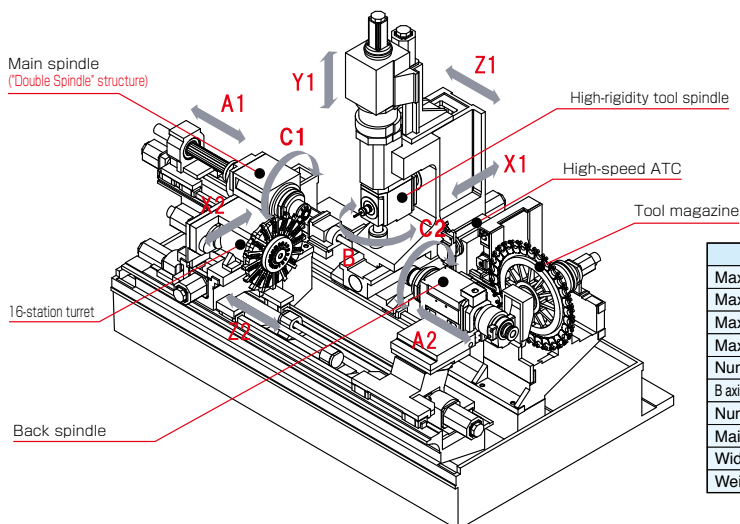


## CNC PRECISION TURNING CENTER TMU1

Complete machining performed by a flexible, multi-function machine



- Main spindle is tsugami's unique "Double spindle"  
The guide bushing and main spindle are integrated into a double spindle for high precision and powerful cutting
- High flexibility for various machining  
Tool spindle provided with standard Y-axis control and B-axis indexing mechanism  
Back work spindle as standard
- Simultaneous cutting turret with tool spindle
- Powerful milling capability



	TMU1
Max. machinable dia.	φ38mm
Max. main spindle speed	120~6,000min <sup>-1</sup>
Max. back spindle speed	200~6,000min <sup>-1</sup>
Max. tool spindle speed	80~10,000min <sup>-1</sup>
Number of turret stations	16 position
B axis indexing angle/Minimum indexing angle	-15°~195°/0.001°
Number of tool storage	30 (Option 60, 118)
Main spindle motor	11/7.5kW
Width×Depth×Height	3,650×2,200×2,500mm
Weight	8,500kg



## CNC PRECISION TURNING CENTER TMB2

**Turret + Tool spindle  
Fixed-headstock turning center  
for realizing high productivity**



- Powerful machining by built-in spindles for main and back spindles
- The tool spindle controlled by Y axis and B axis and the back spindle are provided as standard, it enables complete machining of Complex-shaped workpieces from a barstock in one machine.
- Correspond to small production of a large variety workpieces by ATC and Tool magazine.
- Shortened cycle time by simultaneous marching of the turret and the tool spindle
- The diametral axis (X axis) of the turret and the tool spindle is arranged in parallel to the ground, and the influence on machining accuracy by thermal displacement becomes minimal.

	TMB2
Max. machinable dia.	φ51mm
Max. main spindle speed	200~6,000min <sup>-1</sup>
Max. back spindle speed	200~6,000min <sup>-1</sup>
Max. tool spindle speed	80~10,000min <sup>-1</sup>
Number of turret stations	16 position
B axis indexing angle/Minimum indexing angle	-15°~195°/0.001°
Number of tool storage	30 (Option 60, 118)
Main spindle motor	11/7.5kW
Width×Depth×Height	3,650×2,200×2,500mm
Weight	8,500kg



## PRECISION TURNING AND MACHINING CENTER TMA8-IV

**Complete part machining  
Performed by an all-in-one flexible machine**



- Productive type complex machine integrated high speed, high precision turning center and powerful machining center.
- 5-axis simultaneously controlled specifications is standard for NC.
- Tool spindle with standard Y-axis control and B-axis continuous index.
- Crossed at right angle slide construction assures high accuracy complex machining and free-chip-flow tool spindle.
- Back work spindle (standard) achieves 6-face machining.

	TMA8-IV
Chuck size of main work spindle	8"
Chuck size of back work spindle	6"
Main work spindle speed	35~5,000min <sup>-1</sup>
Back work spindle speed	35~7,000min <sup>-1</sup> (NOTE)
B axis index angle/Least index angle	-15°~195°/0.001°
Tool storage capacity	30 (60:Option)
Width×Depth×Height	3,700×2,126×2,250mm
Weight	8,500kg

(NOTES) Standard 6" chuck Max speed is 6,500min<sup>-1</sup>  
If you use the collet chuck (option), the Max speed is 7,000min<sup>-1</sup>

# PRECISION MACHINING CENTER

Versatile machine to cover various components processing at customer's request; from steel parts of automobile and industrial equipment, to aluminum parts of home electric appliance, office automation (OA) equipment and IT-related equipment. Realized space saving, high-speed and high-precision processing.



MACHINING CENTER

## HIGH SPEED VERTICAL MACHINING CENTER

### VA1-II

High speed and high accuracy machining center  
Space saving and long stroke



- Optimum for high-speed and high-efficient machining of small workpiece
- Super compact machine of 1,040mm wide.  
Productivity improvement per space.
- High speed tool change by double arm type ATC.
- 40 m/min X, Y and Z axes rapid traverse rate realizes the speeding up.

	VA1-II
X/Y/Z-axis stroke	360×260×250mm
Table size	500×330mm
Max. load on table	200kg
Spindle speed	300~30,000min <sup>-1</sup> (Nomal highest spindle speed 28,000min <sup>-1</sup> )
Spindle motor	5.5/9.0kW
Tool shank	7/24 taper S20T
Width×Depth×Height	1,040×2,016×2,000mm
Weight	Approx. 1,800kg

Tooling zone



ATC/Tool magazine





## HIGH SPEED VERTICAL MACHINING CENTER VA32A

High productivity reduces total cost  
High speed machining center with BT30

- 1.8 sec. chip to chip time, 48 m/min X, Y and Z axes rapid traverse rate
- Low center of gravity bed and wide column  
Triangle structure for spindle head  
Reducing vibration and thermal displacement in high speed and heavy-duty machining
- All maintenance operations are possible at rear side of the machine.  
No space required for both sides.  
Increasing productivity per space by building up a space saving production line layout
- 24-tool ATC is provided.  
Tool magazine is stored inside the column and separated from cutting area.  
Large tool area is kept and free from chips or coolant adherence on the tools.

VA32A	
X/Y/Z-axis stroke	400×300×250mm
Table size	840×380mm
Max. load on table	150kg
Spindle speed	200~20,000min <sup>-1</sup>
Spindle motor	2.2/3.7kW
Tool shank	JIS B 6339-1998 BT30
Retention knob	MAS403-1982 P30T-1
Width×Depth×Height	1,300×2,270×2,310mm
Weight	3,300kg



## HIGH SPEED VERTICAL MACHINING CENTER VA35

Suitable for high speed total machining from a block  
Highly-efficient machining center

- Low center of gravity bed and wide column  
Triangle structure for spindle head  
Reducing vibration and thermal displacement in high speed machining
- All maintenance operations are possible at rear side of the machine.  
No space required for both sides.  
Increasing productivity per space by building up a space saving production line layout
- Tool magazine is stored inside the column and separated from cutting area.  
Large tool area is kept and free from chips or coolant adherence on the tools.
- Two-face constraint system "HSK-E25" holder, high restrain rigidity and excellent repeatability in ATC operation, is adopted.

- Max. built-in motor spindle speed: 50,000 min<sup>-1</sup>  
48m/min X, Y and Z axes rapid traverse rate  
20 m/min cutting feedrate  
Efficient machining by high speed spindle and high cutting feedrate reduce the machining time.

VA35	
X/Y/Z-axis stroke	400×300×250mm
Table size	840×380mm
Max. load on table	150kg
Spindle speed	500~50,000min <sup>-1</sup>
Spindle motor	3.7/5.5kW
Tool shank	HSK-E25
Width×Depth×Height	1,300×2,270×2,420mm
Weight	3,500kg

## HIGH SPEED PRECISION HORIZONTAL MACHINING CENTER

### FMA3-III

Space saving and long time unattended operation is possible by original vertical pallet



- Vertical-type pallet system of this machine permits free-chip-flow structure.  
High accuracy is achieved even in unattended operation.
- ATC tool-to-tool time : 1.0sec.  
X/Y/Z-axis rapid traverse rate : 24m/min  
B-axis indexing : 2.2sec./180° Idle time is reduced.
- Wide variety of versions are available to meet user's requirements.

	FMA3-III (10P)	FMA3-III (2P)
X/Y/Z-axis stroke	360×330×400mm	
Pallet size	300×300mm	
Max. allowable weight on pallet	80kg	
Spindle speed	40~10,000min <sup>-1</sup>	
Spindle motor	5.5/7.5kW	
Tool shank	JIS B 6339-1998 BT40	
Retention knob	MAS403-1982 P40T-2	
Width×Depth×Height	4,040×2,485×2,740mm	3,640×2,485×2,375mm
Weight	10,500kg	10,000kg

## HIGH SPEED PRECISION HORIZONTAL MACHINING CENTER

### FMA5-III

Space saving and long time unattended operation is possible by original vertical pallet



- Vertical-type pallet system of this machine permits free-chip-flow structure.  
High accuracy is achieved even in unattended operation.
- ATC tool-to-tool time : 1.0sec.  
X/Y-axis rapid traverse rate : 20m/min  
Z-axis rapid traverse rate : 24m/min  
A/B-axis indexing : 3.6sec./180° Idle time is reduced.
- Wide variety of versions are available to meet user's requirements.

	FMA5-III (8P)	FMA5-III (5F10P)
X/Y/Z-axis stroke	560×350×500mm	
Pallet size	450×450mm	300×300mm
Max. allowable weight on pallet	250kg	80kg
Spindle speed	40~10,000min <sup>-1</sup>	
Spindle motor	5.5/7.5kW	
Tool shank	JIS B 6339-1998 BT40	
Retention knob	MAS403-1982 P40T-2	
Width×Depth×Height	4,320×3,002×3,027mm	4,150×3,002×2,720mm
Weight	11,000kg	10,500kg

# CNC PRECISION CYLINDRICAL GRINDING MACHINE

Corresponds to wide grinding processing from stand-alone machine to full automatic grinding system



## GRINDING MACHINE



CNC PRECISION GRINDING MACHINE



### CNC PRECISION CYLINDRICAL GRINDING MACHINE G18-II

#### Wide variation to meet various workpieces

- Wheel O.D. 355mm max. width 50mm. High efficient grinding by high rigid dynamic bearing.
- Automation is easy by optional accessories Myrobo, stocker, etc.

#### ■ Standard type

SB type: O.D. grinding, mas production straight type (NC simultaneous 2-axis)  
AB type: Shaft and end face simultaneous grinding mas production angular type (NC simultaneous 2-axis)

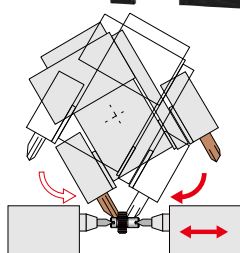
	G18-II SB	G18-II AB
Swing(diameter)		180mm
Distance between centers		250mm
Grinding wheel OD×Max Width		355×50mm
Surface speed		2,700m/min
Rapid traverse rate(X/Z)		8/16m/min
Wheel spindle motor		2.2kW
Width×Depth		1,460×2,085
Weight		2,000kg



### CNC PRECISION GRINDING MACHINE G18-II FB

#### External and end-face grinding in one process Both center driving system is equipped as standard

- Angular wheels are located at right and left side.  
End face grinding at both sides are possible by twin head wheel swiveling  $\pm 30^\circ$
- Rotating headstock and tailstock are employed. Both center driving system to rotate work piece at center holes is equipped as standard. External and end-face of whole work-piece are possible to grind.
- As grinding of work piece is possible by one chucking, accuracy of centricity, angularity, parallel is improved.



	G18-II FB
Swing(diameter)	180mm
Distance between centers	60mm
Grinding wheel OD×Max Width	305×25mm
Surface speed	2,700m/min
Rapid traverse rate(X/Z)	10/20m/min
Wheel spindle motor	2.2kW
Width×Depth	1,440×2,500
Weight	2,150kg



## Linear Drive Variant Thread Grinding Machine FTG18TL



### Pursuing higher efficiency and higher productivity

- Thread grinding machine specialized for small thread rolling tap employing linear on X-axis
- Helix swivel wheel head equipped as standard can adjust manually according to the thread lead angle.
- Automated system can create easily with optional 3-axis NC loader and 2-pallet table.

	FTG18TL
Distance between centers	100mm
Swing (Diameter)	180mm
Max. machinable dia.	M6
Maximum thread length	60mm
Maximum lead	2mm
Maximum lead angle	±10°
Grinding wheel O.D X I.D	φ200×φ60mm
Surface speed	45m/s
Dimension of center (headstock)	MT No.1
Swiveling angle	±10°
Width×Depth	1,610×2,065
Weight	2,200kg

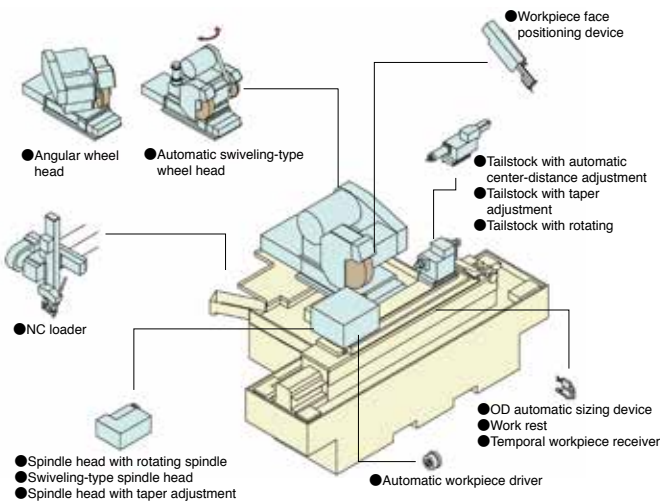


## CNC PRECISION CYLINDRICAL GRINDING MACHINE G300/G350



### Pursuing higher efficiency and higher productivity

- Steady grinding accuracy  
Tsugami's outstanding high precision & high rigidity hydrodynamic bearing for the wheel spindle  
V-Flat guide ways of the slide assure accurate, consistent and smooth movement.
- High efficiency  
Optimum not only for precision grinding but also heavy duty grinding  
G300: Max. wheel dia φ510, wheel spindle motor: standard 7.5 kW  
G350: Max. wheel dia φ610, wheel spindle motor: standard 11 kW
- High performance  
Following accessories are provided as standard;
  - Dead/live changeover headstock
  - Manual center adjusting type tailstock
  - Grinding pattern inputting software
- High productivity  
Fully covered guard is provided as standard.  
Combination of substantial standard specifications and rich options from conventional machines achieves various workpiece grinding.  
Automation system is supported with the optional high-speed loader.



	G300S-300	G300A-300	G300S-500	G300A-500	G350S-300	G350A-300	G350S-500	G350A-500
Distance between centers	300mm		500mm		300mm		500mm	
Swing (Diameter)	300mm				350mm			
Grinding wheel O.D×Max.width	S: 405×75, A: 510×100				S,A: 610×150			
Surface speed	2,700m/min							
Rapid traverse rate	X axis 16m/min, Z axis 20m/min							
Headstock standard type	Dead/live changeover type				Dead type			
Dimension of center (headstock)	MT.No4							
Max. travel (tailstock)	200mm (Amount of manual center distance adjusting), 40mm (Hydraulic)				50mm (Hydraulic)			
Dimension of center (tailstock)	MT.No4							
Wheel spindle motor	7.5kW				11kW			
Work spindle motor	1.6kW				3kW			
Width×Depth	2,400×3,740		2,825×3,740		2,400×3,740		2,825×3,740	
Weight	4,700kg		5,000kg		4,900kg		5,200kg	



## CNC PRECISION CYLINDRICAL GRINDING MACHINE G300F

Completion of external and end face grinding in a single operation by swivel wheel head.

- Four processing patterns can be selected by arranging the grinding wheels.
- Straight, angular and taper grindings can be selected freely in single operation. Internal grinding type is prepared.

	G300F-500SS	G300F-1000SS	G300F-500AA	G300F-1000AA	G300F-500AI	G300F-1000AI	G300F-500A2	G300F-1000A2
Head specification	Straight + Straight grinding		Angular + Angular grinding		Angular + Internal grinding		1-head and 2-wheel specification	
Distance between centers	500mm	1,000mm	500mm	1,000mm	500mm	1,000mm	500mm	1,000mm
Swing (Diameter)	300mm							
Grinding wheel O.D.×Max.width	φ455×75 (2 pieces)				φ455×75 (1 piece) Internal grinding spindle (60,000min <sup>-1</sup> )		φ455×75 (2 pieces)	
Surface speed	2,700m/min							
Rapid traverse rate	X axis 16m/min, Z axis 20m/min							
Wheel spindle motor	5.5kW (servo)				5.5kW (servo) (9kW: Internal grinding)		7.5kW	
Weight	5,200kg	6,500kg	5,200kg	6,500kg	5,200kg	6,500kg	5,200kg	6,500kg



## CNC PRECISION CYLINDRICAL GRINDING MACHINE G300T

The exclusive thread grinding machine

- The machine has the helix wheel head that is adjustable to the lead angle of a workpiece by tilting the grinding wheel within ±25° (in vertical plane).
- Grinding of right hand thread, left-hand thread, multiple thread, taper thread, variable-lead thread, etc. can be made by simultaneous 3-axis control.

	G300T-300	G300T-500
Distance between centers	300mm	500mm
Swing(diameter)	300mm	
Max. machinable dia.	80mm	
Maximum thread length	200mm	400mm
Maximum lead	6	
Maximum lead angle	±25°	
Grinding wheel O.D.×Max.width	φ405×35, φ355×35	
Surface speed	2,700mm/min	
Dimension of center (headstock)	MT.No4	
Swiveling angle	±25°	
Width×Depth	2,550×3,740	2,798×3,740
Weight	5,200kg	6,500kg

### PRECISION SMALL CYLINDRICAL GRINDING MACHINE/ PRECISION SMALL INTERNAL GRINDING MACHINE

## CGD150-II/IGD150-II

Suitable small cylindrical grinding of small components, gauge, positioning pin, small jig etc.

- Best selling small-size precision grinding machine.
- CGD-type is suitable for cylindrical grinding. IGD-type is for internal grinding.
- These grinders are optimal for small parts (gauges etc.).
- In general machining, grinding finishing accuracies within 0.2μm for roundness and 0.1μm Rmax for surface roughness can be achieved.
- Easy setting and improved operation for spindle speed and table traverse speed by inverter motor



	CGD150-II	IGD150-II
Swing(diameter)	105mm	
Distance between centers	150mm	—
Grinding wheel O.D.×Max.width	φ125×13mm	φ18×14mm or φ10×10mm
Wheel spindle speed	5,000min <sup>-1</sup>	32,000min <sup>-1</sup> or 60,000min <sup>-1</sup>
Wheel spindle motor	0.2kW	
Width×Depth	970×745	970×745
Weight	480kg	

## CARBIDE TOOL GRINDING MACHINE CTG4

Ideal for use in grinding of tools for automatic lathes

- This machine can perform the grinding operation of tools such as square tools, milling cutters, reamers etc.
- Suitable for the grinding of tools for NC lathe.
- A swarf collecting unit provided as standard equipment creates operator-friendly working environment.



	CTG4
Max. grinding dia.	30mm
Grinding length	30mm
Wheel O.D.	φ75mm
Wheel spindle motor	0.2kW
Width×Depth	980×1,900
Weight	550kg



# PRECISION THREAD AND FORM ROLLING MACHINE

Integrating our own roll dies manufacturing, corresponds not only to normal screw or knurl, but also to high-precision lead screws, worms or form rolling.



## ROLLING MACHINE



### CNC PRECISION THREAD AND FORM ROLLING MACHINE R7NC

**In-feed thread rolling machine**  
Through-feed thread rolling is also enabled by adding equipments.

- Though-feed or in-feed thread rolling machine for small components  
A fine adjustment of spindle inclination with a digital indicator (OP.)
- Space saving (floor space: 1.2m<sup>2</sup>)
- Both right and left spindles are driven by the independent servo motors respectively.  
High precision thread rolling by eliminating pitch error with rotation synchronization control
- Programmable pitch coinciding of rolling dies by inputting numerical values on the screen.
- Data of machining conditions and offset values are stored in the NC as numerical data, and reproducing of conditions is easy.

	R7NC(In-feed)	R7NC(Through-feed)
Max. rolling O.D.	φ45mm	φ10mm
Max. rolling length	60mm	1,500mm
Max. speed	195min <sup>-1</sup>	
Max. rolling pressure	7ton	
Spindle motor	2.5kW×2	
Width×Depth×Height	1,245×940×1,770mm	
Weight	1,500kg	



### CNC PRECISION THREAD AND FORM ROLLING MACHINE R17NC-II

**NC control avails to reset of pitch adjustment easily**

- In addition to standard 3-axis option of 2-axis NC control unit construction realizes high accuracy and complex thread rolling by simple command
- The right headstock realizes stable movement with the high-rigidity linear guides and the large ball screw.
- Pitch adjustment is easy by NC command.
- Oil-less construction gentle for environment stable accuracy without temperature change

	R17NC-II(In-feed)	R17NC-II(Through-feed)
Max. rolling O.D.	φ75mm	φ40mm
Max. rolling length	150mm	4,000mm
Max. speed	95min <sup>-1</sup>	
Max. rolling pressure	17ton	
Spindle motor	3.0kW×2	
Width×Depth×Height	1,986×1,370×1,838mm	
Weight	3,200kg	



## PRECISION THREAD AND FORM ROLLING MACHINE R6A

Specialized for infeed thread rolling with accuracy and speed

- Best selling hydraulic 2-roll thread rolling machine. Compact size, high rigidity, simple operation. Minimum cycle time.
- Specialized in infeed thread rolling operation.

	R6A
Max. rolling O.D.	φ45mm
Max. rolling length	60mm
Max. thread pitch	2.5mm
Max. speed	70min <sup>-1</sup>
Max. rolling pressure	6ton
Spindle motor	1.5kW
Width×Depth×Height	1,245×790×1,150mm
Weight	1,000kg



## PRECISION THREAD AND FORM ROLLING MACHINE R16-II

High accuracy thread rolling  
3 types available depend on the workpiece

- New model succeeded the best selling machine Model R15  
Common components are used for major part, realization of easy operation
- Features of R16A  
Rolling force is 16tons with high rigidity construction.  
Dies for R15A, work rest and center, etc can be adapted.
- Features of R16B  
Through feed rolling suitable for high accuracy work piece,  
CV joint is installed as standard.

	R16A-II	R16B-II	R16B-II(High-Speed)
Max. rolling O.D.	75mm	75(through40)mm	through 40mm
Max. rolling length	150mm	150(through 4,000)mm	through 4,000mm
Max. thread pitch	5mm		
Max. speed	71 min <sup>-1</sup>		140min <sup>-1</sup>
Max. rolling pressure	16ton		
Spindle motor	7.5kW		
Width×Depth×Height	1,760×1,100×1,300mm	1,882×1,074×1,437mm	
Weight	2,700kg	2,800kg	



## PRECISION THREAD AND FORM ROLLING MACHINE R30A

Cost performance machine  
with high rigidity  
and excellent operation

- High rigidity box-type bed allows powerful thread rolling of 30t.
- The 300mm-width dies perform efficient infeed thread rolling operation even on long workpieces.
- This machine has been designed to specialize in production of rough-pitched threads, worms, serrations.
- Pushing device (OP.) permits rolling operation on splines.

	R30A
Max. rolling O.D.	φ100mm
Max. rolling length	300mm
Max. rolling thread pitch	12mm
Max. speed	92min <sup>-1</sup>
Max. rolling pressure	30ton
Spindle motor	11kW
Width×Depth×Height	2,125×1,405×1,690mm
Weight	4,500kg

# ROLL DIES



Since our company put the thread rolling machine and roll dies to practical use for the first time in Japan, we have supplied various kinds of roll dies to be used with the machines broadly in the domestic and overseas markets. These machines and dies with superior performance and quality have earned favorable reputation.

### Roll Dies-type

Triangular thread, trapezoidal thread, ball thread, worm, serration, knurl, burnishing, forming, straightening.  
150% longer life roll dies comparing to SKD11 dies.



# GAUGE BLOCKS



Product No.	Name	Qty. of each type of block	Dimensional increment (mm)	Normal dimensions (mm)
B - 2	103-piece set (S103)	1	—	1.005
		49	0.01	1.01 to 1.49
		49	0.5	0.5 to 24.5
		4	25	25, 50, 75 & 100
B - 3	76-piece set (S76)	1	—	1.005
		49	0.01	1.01 to 1.49
		19	0.5	0.5 to 9.5
		4	10	10, 20, 30 & 40
		3	25	50, 75 & 100
B - 7	9-piece set (S9(-))	9	0.001	0.991 to 0.999
B - 8	9-piece set (S9(+))	9	0.001	1.001 to 1.009

NOTE: The numbers in parentheses in the "Name" column are set designations that have been indicated by JIS B7506.



### Corporate Information

**Corporate name**  
Tsugami Corporation

Chairman and C.E.O.  
Takao Nishijima

**Established**  
15th, March, 1937

**Capital**  
12,345 Millions of yen

**Stocks to be issued**  
320,000 Thousands of shares

**Stocks issued**  
74,919 Thousands of shares

**Business operations**  
Manufacture and sales of precision machine tools, precision measuring equipment and precision tools

**Location of head office**  
12-20, TOMIZAWA-CHO,  
NIHONBASHI, CHUO-KU, TOKYO  
103-0006, JAPAN  
TEL.03-3808-1711  
FAX.03-3808-1511  
E-mail.webmaster@tsugami.co.jp

**Major banks**  
Sumitomo Mitsui Banking Corporation.  
Bank of Tokyo-Mitsubishi, Ltd.  
The Hokuetsu Bank, Ltd.  
The Daishi Bank, Ltd.  
The Hachijuni Bank, Ltd.  
UFJ Trust Bank Limited.

### Corporate History

<b>June</b>	<b>1923</b>	Research of block gauge was initiated at Honjo Ohira-cho in Tokyo	<b>November</b>	<b>1989</b>	TSUGAMI (THAI) was established in Thailand.
<b>March</b>	<b>1937</b>	Tsugami Mfg., Co., Ltd was established in Nagaoka-shi, Niigata Pref. production of block gauge was started.	<b>July</b>	<b>1992</b>	CNC precision automatic lathe S20 series were awarded the 22nd Machine Design Award.
<b>June</b>	<b>1939</b>	Production of L-type thread milling machine Model T-TML500 was started. Production of hydraulic universal cylindrical grinding machine Model T-UG300 was started.	<b>March</b>	<b>1993</b>	CNC precision automatic lathe S20 series were awarded the 23rd Automation Machinery Prize for small and medium sized enterprises.
<b>October</b>	<b>1942</b>	Tsugami Precision Engineering Industry Co.,Ltd. was established and the factory was constructed at Saku-shi.	<b>May</b>	<b>1994</b>	Subsidiary Tsugami Precision Co., Ltd. obtained the authorization as authorized proofreading enterprise of block gauge on measuring method Traceability System.
		Tsugami Precision Engineering Industry Co.,Ltd. was merged in February, 1945, and named as Shinsyu Factory.	<b>January</b>	<b>1999</b>	Quality Control Management System ISO 9001 was awarded to Shinsyu Factory.
<b>June</b>	<b>1946</b>	Production of grinding machine, thread rolling machine was started. (Prohibition of machine tool production was announced)	<b>February</b>	<b>1999</b>	Quality Control Management System ISO 9001 was awarded to Nagaoka Factory.
<b>May</b>	<b>1949</b>	Stock offering on Tokyo, Osaka and Niigata stock exchanges.	<b>October</b>	<b>2000</b>	New plant to assemble automatic lathes in Nagaoka Factory was completed.
<b>November</b>	<b>1957</b>	Production and sale of automatic lathe type T7 was started.	<b>November</b>	<b>2000</b>	Environment Management System ISO 14001 was awarded to Nagaoka Factory.
<b>April</b>	<b>1968</b>	The 14th Okochi Memorial Production Prize was awarded for excellent result of research and development of thread rolling technology.	<b>July</b>	<b>2001</b>	New plant to assemble grinding machines in Nagaoka Factory was completed.
<b>November</b>	<b>1970</b>	Corporate name was changed to Tsugami Corporation	<b>September</b>	<b>2003</b>	Precision Tsugami (China) Corporation was established in China.
<b>October</b>	<b>1972</b>	The 2nd Okoshi Memorial Prize was awarded for excellent result of research and development of gear grinding machine.	<b>April</b>	<b>2004</b>	Subsidiary, Tsugami Machine Tool Trading Corp. was merged.
<b>September</b>	<b>1973</b>	Gang-tool type automatic lathe Model VCL installed with lead-turner function was completed.	<b>November</b>	<b>2005</b>	New plants to assemble machines in Nagaoka factory and Shinsyu factory were completed.
<b>June</b>	<b>1978</b>	Precision automatic lathe "Mercury" was developed and its sales were started.	<b>April</b>	<b>2007</b>	Tsugami Corporation South Korea Branch was established.
<b>March</b>	<b>1982</b>	CNC precision automatic lathe "PAN1" was awarded the 12th Automation Machinery Prize for small and medium-sized enterprises.	<b>November</b>	<b>2007</b>	Tsugami GmbH was established in Germany.
			<b>February</b>	<b>2010</b>	TSUGAMI KOREA CO., LTD. was established in Korea.
			<b>November</b>	<b>2010</b>	Shinagawa Precision Machinery (Zhejiang) CO., LTD. was established in China.
			<b>April</b>	<b>2011</b>	TSUGAMI PRECISION ENGINEERING INDIA PRIVATE LIMITED was established in India.





## Factory



### Profile of Nagaoka Factory

Land area 58,225m<sup>2</sup>  
 Building area 38,259m<sup>2</sup>  
 Address 1-1-1, Higashizao, Nagaoka-shi,  
 Niigata, Japan 940-8630  
 Phone:+81-258-35-0850  
 Facsimile:+81-258-35-0905



Nagaoka Factory is situated at northern industrial zone of Nagaoka-shi Niigata Prefecture and is proud for excellent technology as the leading manufacturer at machine tool industry.  
 The factory has kept on expanding the activity with fully advanced technology as the market leader of precision machine tool in the world.

### Profile of China Factories

Land area 100,350m<sup>2</sup>  
 Building area 47,071m<sup>2</sup>  
 Address PRECISION TSUGAMI (CHINA) CORPORATION  
 〒314200  
 2001 Pingcheng Rd, Pinghu Economic  
 Development Zone, Zhejiang, China  
 Phone:+86-573-8526-8718  
 Facsimile:+86-573-8526-8728  
 Shinagawa Precision Machinery (Zhejiang) CO.,LTD.  
 Address 〒314200  
 2088 Pingcheng Rd, Pinghu Economic  
 Development Zone, Zhejiang, China  
 Phone:+86-573-8598-2088  
 Facsimile:+86-573-8598-2128



### Profile of Takami Factory

Land area 12,770m<sup>2</sup> Building area 5,620m<sup>2</sup>  
 Address 2-1-2, Higashitakami, Nagaoka-shi,  
 Niigata, 940-0006, JAPAN  
 Phone : +81-258-24-8151  
 Facsimile : +81-258-24-1579



### Profile of Niigata Factory

Land area 12,345m<sup>2</sup> Building area 6,438m<sup>2</sup>  
 Address 2-132, Momoyama-cho, Higashi-ku,  
 Niigata-shi, Niigata. 950-0051, JAPAN  
 Phone : +81-25-274-1281  
 Facsimile : +81-25-271-7917





## Sales Net Work



<b>Overseas Division</b>	12-20, TOMIZAWA-CHO, NIHONBASHI, CHUO-KU, TOKYO 103-0006, JAPAN Phone: +81-3-3808-1172 Facsimile: +81-3-3808-1175
<b>PRECISION TSUGAMI (CHINA) CORPORATION</b>	2001 Pingcheng Rd, Pinghu Economic Development Zone, Zhejiang, China Phone: +86-573-8526-8718 Facsimile: +86-573-8526-8728
<b>PRECISION TSUGAMI (CHINA) CORPORATION SHANGHAI BRANCH</b>	Rm. 1807, Xinyin Building, No.888 Yishan Road, Shanghai, China Phone: +86-21-6432-0828 Facsimile: +86-21-6432-0829
<b>PRECISION TSUGAMI (CHINA) CORPORATION DONGGUAN BRANCH</b>	Room 202, Berlin Business Building, No.10 Qiangguo Road, Jinxia Community, Changan Town, Dongguan City, GuangDong, China Phone: +86-769-8238-9472 Facsimile: +86-769-8238-9471
<b>PRECISION TSUGAMI (CHINA) CORPORATION QINGDAO BRANCH</b>	Room A1614, wandaguangchang Business Building, No.37 lianyungang Road, Qingdao City, Shandong, China Phone: +86-532-5566-2525 Facsimile: +86-532-5566-2425
<b>PRECISION TSUGAMI (CHINA) CORPORATION WUXI BRANCH</b>	10-403, Xingzhou Business Park, NO.89, Xingchung 4 Road, New District, Wuxi, China Phone: +86-510-6875-8991 Facsimile: +86-510-6875-8990
<b>TSUGAMI (THAI) CO., LTD.</b>	23/20-21 Sorachai Bldg., F-12, Soi Sukhumvit 63, Sukhumvit Rd., Kwaeng Klongton Nua, Khet Wattana, Bangkok 10110 Thailand Phone: +662-714-3022, 3023, Facsimile: +662-714-3024
<b>TSUGAMI GmbH</b>	Trakehner Str.5, 60487 Frankfurt am Main, Germany Phone: +49-69-1540-8900 Facsimile: +49-69-1540-8903
<b>TSUGAMI KOREA CO., LTD.</b>	335-24 Doksan1-dong, Geumcheon-Gu, Seoul, KOREA 153-814 Phone: +82-2-553-2056 Facsimile: +82-2-553-2057





## Affiliated Companies

<b>TSUGAMI MACHINERY CO., LTD.</b>	3-1-20, Asada, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-0847, JAPAN Phone : +81-44-328-3782 Facsimile : +81-44-322-2736
<b>TSUGAMI PRECISION CO., LTD.</b>	12-20, TOMIZAWA-CHO, NIHONBASHI, CHUO-KU, TOKYO 103-0006, JAPAN Phone : +81-3-3808-2220 Facsimile : +81-3-3808-1165
<b>PRECISION TSUGAMI (CHINA) CORPORATION</b>	2001 Pingcheng Rd, Pinghu Economic Development Zone, Zhejiang, China Phone : +86-573-8526-8718 Facsimile : +86-573-8526-8728
<b>TSUGAMI (THAI) CO., LTD.</b>	23/20-21 Sorachai Bldg., 12 <sup>th</sup> floor Soi Sukhumvit63, Sukhumvit Road Kwaeng Klongton Nua, Khet Wattana Bangkok 10110 Thailand Phone : +662-714-3022, 3023 Facsimile : +662-714-3024
<b>TSUGAMI GmbH</b>	Trakener Str.5, 60487 Frankfurt am Main, Germany Phone : +49-69-1540-8900 Facsimile : +49-69-1540-8903
<b>TSUGAMI KOREA CO., LTD.</b>	335-24 Doksan1-dong, Geumcheon-Gu, Seoul, KOREA 153-814 Phone : +82-2-553-2056 Facsimile : +82-2-553-2057
<b>Shinagawa Precision Machinery (Zhejiang) CO., LTD.</b>	2088 Pingcheng Rd, Pinghu Economic Development Zone, Zhejiang, China Phone : +86-573-8598-2088 Facsimile : +86-573-8598-2128
<b>TSUGAMI PRECISION ENGINEERING INDIA PRIVATE LIMITED TSUGAMI TECH SOLUTIONS INDIA PRIVATE LIMITED</b>	Plot No. A-8, Sipcot, Industrial Growth Centre, Oragadam, Vallam B Village, Sriperumbudhur Taluk, Kancheepuram, 602 105, India
<b>TSUGAMI Universal Pte. Ltd.</b>	1 Kaki Bukit Road 1 #01-34/35 Enterprise One, Singapore 415934 Phone : +65-6547-8030 Facsimile : +65-6742-4812



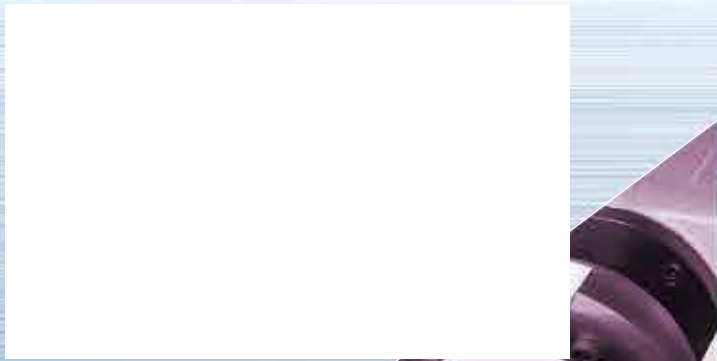


**TSUGAMI CORPORATION**

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