TAKAMAZ GENERAL CATALOG ENGLISH SIGIN





Aiming for Carbon-neutral Production

The new TAKAMAZ plant (Asahi plant) is contributing to global environmental conservation by introducing energy-saving equipment including air conditioning systems that utilize solar power generation and well water. **Scheduled to be installed sequentially from 2023

Environmental Technology Supporting Customers' Push Toward Carbon Neutrality

- Increased energy conservation
 (adoption of regenerative energy, high-efficiency motors)
- More compact, increased space savings
 Successful integration of loading units, oil mist collectors,
 chip conveyors, coolant temperature regulators, etc.
- **■** Defectives reduced by stable precision machining
- **■**Cycle times shortened by speed increases
- **■**Improved operability and maintainability
- **■**Reduced number of structural components



Lineup Realizing Process Integration and Productivity Improvements

Turning + grinding



SKV-8Skiving machining

Compound machining



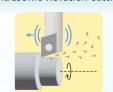
XYseries
Compound machining

Turning + hobbing



XT-8MY
Compound machining

Ultrasonic vibration cutting



Chip breaking machining method

Operating system



TAKAMAZ 🗀 🤝

F Loader System





TAKAMAZ LINE UP

Xseries GANG TYPE series 07 1 spindle 1 turret 1 spindle 1 slide Our total production count is a proof of Gang type precision lathe that has honed reliability. This is a TAKAMAZ standard that the essentials. has evolved for single lathes. GSL series 08 XW series 05 1 spindle 1 turret 2 spindle 2 slide A simple machine best in its class among Simultaneous machining of both or the manual operated machines, focusing the same sides of the parts for total complete cost performance. process machining. The functions of two units within the space of a single unit. SKIVING MACHINE 08 XY series 06 1 spindle 1 turret Multi-turning Introducing a Special Machine Specifically With 2 spindle and 2 turret, there are lots of Designed for Skiving. possible cutting methods. Complex parts can be processed at shorter amount of time. OPTION SYSTEM XD series 06 LOADER SYSTEM 2 spindle 1 slide **AUTOMATION SYSTEM** One spindle performs loading while the ADVANCED TECHNOLOGY other is machining. Production rates doubled within the same OPERATING SYSTEM -----12

A New System at a New Plant

We will make products tailored to individual customers' needs based on a lineup that, in addition to productivity, considers everything from production efficiency and production space to the environment, durability and future-proofing.



"Starting Point of TAKAMAZ" Integration of the Power of Technology.





1-spindle 1-turret

Our total production count is proof of reliability. This is a TAKAMAZ standard that has evolved for single lathes.





Standard of single lathes

Ideal for small part processing

XTS-6







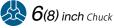
XC-150







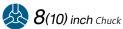
XT-6 XT-6M







XT-8 XT-8M



TAKAMAZ & FANUC 0i-TF Plus TAKAMAZ & FANUC 0i-TD







TAKAMAZ & FANUC 0i-TF Plus



TAKAMAZ & FANUC 0i-TF Plus

Xseries Machine Spe	cifications								
l t e m	Unit	XTS-6 🕪	XC-150	XT-6 Standard	XT-6M Power tool type	XT-8 Standard	XT-8M Power tool type	XT-8MY	
Chuck size	inch	6	8	6(8)		8(10)		8	
Spindle bearing I.D.	mm	φ75	φ100 φ75 (φ85)		φ100(φ120)		φ100		
Spindle speed	min ⁻¹	Max.5,000	Max.3,500	Max.4,500(6,000)(3,500)		Max.3,500 (5,000) (3,000)		Max.4,000	
Tool post type		8-station turret	8-station turret	8-station (12-station) turret	12-station turret	8-station(12-station)turret	12-station turret	12-station turret	
Max. stroke	mm	X:120 Z:230	X:175 Z:250	X:120	Z:280	X:190 Z:400	X:190 Z:420	X:175 Z:420 Y:+35、-40	
Rapid traverse	m/min	X:18 Z:24	X:18 Z:24	X:18 Z:24 AC7.5/5.5(AC11/7.5)		X:18 Z:24		X:18 Z:24 Y:10	
Spindle motor	kW	AC7.5/5.5	AC11/7.5			AC11/7.5: ϕ 100 3,500min ⁻¹ (AC15/11: ϕ 100 5,000min ⁻¹) (AC15/11: ϕ 120 3,000min ⁻¹)		AC15/11	
Power tool Milling	mm	-	ı	_	φ10	_	φ20	φ16	
capability Tap	mm	_	_	_	M6	_	M16	M16	
Dimensions (L×W)	mm	1,105 × 1,380	1,250 × 1,480	1,360 ×	1,370	1,600 × 1,535	1,750 × 1,535	1,780 × 1,685	

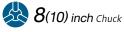
TAKAMAZ & FANUC 0i-TF

Controller *When sub spindle mounted



Suited for Powerful Heavy Cutting

XT-8MY















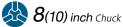
Suited for Compound Machining and Complete Part Machining Ideal for compound machining and machining products to completion



Long Shaft Workpiece

XL-200

















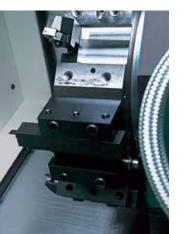


X-S700



8(10) inch Chuck





T-500 XTT-500M



8(10) inch Chuck













XL-	200	w a	XTT-500	XTT-500M	
Standard Power tool type		X-S700	Standard	Power tool type	
8(10)		8(10)	8(10) 8(10)		
φ100(φ120)		φ100(φ120)	φ100(φ120)	φ100	
Max.3,500(5,000 • 4,000)	Max.3, 500 (3,000)	Max.4,000 (3,500)	Max.4,000	
12-stati	on turret	10-station turret × 2	8-station	turret × 2	
X:225 Z:800		X:115 Z:650	X:105 Z:450		
X:18 Z:24		X:16 Z:30	X:18 Z:24		
AC11/7.5 (18.5/15)		AC15/11 (18.5/15)	AC15/11(18.5/15) AC15/11		
- φ20		-	_	φ10	
_	M4 ~ M16	-	_	M4 ~ M8	
2,900(3,10	0 ^{**}) × 1,845	1,960 × 1,720	1,695 × 1,830		
TAKAMAZ &	FANUC 0i-TD	TAKAMAZ & FANUC 0i-TD	TAKAMAZ &	FANUC 0i-TF	
				():Option	















Spindle Cs-axis Spindle indexing indexing (electrical/mechanical)







From high volume machining to heavy cutting. Revolutionary machine with 2-spindle and 2-slide





2-spindle 2-slide

Simultaneous machining of both or the same sides of the parts for total complete process machining. The functions of two units within the space of a single unit.







Ideal for small part processing

XWG-3



3/4 inch Chuck













6inch Chuck













XW-130 XW-130M



& Binch Chuck













Large flange-like workpiece

XW-200











Large flange-like workpiece, Fastest Looding Cycle

XWT-10











XWseries Machine Sp	ecifications							
Item	Unit	XWG-3 🐷	XW-60 Standard	XW-60M Power tool type	XW-130 Standard	XW-130M Power tool type	XW-200	XWT-10
Chuck size	inch	Collet,3,4	Collet,6(5)×2		Collet,8 × 2		10 × 2	10 × 2
Spindle bearing I.D.	mm	φ60	φ75(φ65)		φ100		φ120	φ120
Spindle speed	min ⁻¹	Max.8,000(6,000 %1)	Max.4,500 (6,000)		Max	Max.4,000		Max.2,800 (4,000)
Tool post type		Gang type (Max.4 pcs.)	8-station turret×2	10-station turret×2	8-station turret × 2	10-station turret × 2	8-station turret × 2	10-station turret× 2
Max. stroke	mm	X:160 Z:230	X:125 Z:140		X:150 Z:160	X:170 Z:220	X:170 Z:220	X:170 Z:270
Rapid traverse	m/min	X:16 Z:20	X:21 Z:18		X:24	Z:24	X:24 Z:24	X:24 Z:24
Spindle motor	kW	AC5.5/3.7	AC 7.5/5.5×2		AC11	/7.5 × 2	AC18.5/15 × 2	AC18.5/15 × 2
Powertool Milling	mm	_	_	φ13	_	φ16	_	_
capability Tap	mm	_	_	M4~M10	_	M4~M10	_	_
Dimensions (L×W)	mm	1,340 × 2,130	1,595(1,950)×2,005	1,695 (1,950) ×2,005	1,890(2,250 <mark>**2</mark>) × 2,140	1,990(2,350 <mark>**2</mark>) × 2,330	1,990(2,350 <mark>**2</mark>) × 2,330	2,030(2,350 %2) × 2,370
Controller		TAKAMAZ & MITSUBISHI M830VW	TAKAMAZ & FANUC 0i-TF		TAKAMAZ & FA	NUC 0i-TD(0i-TF ×3)	TAKAMAZ & FANUC Oi-TF	TAKAMAZ & FANUC 0i-TF

TAKAMAZ Compact Machines Suitable for Compound Machining





Sub-spindle + Power tools

XY-120 PLUS













Multi-Turning

With 2 spindle and 2 turret, there are lots of possible cutting methods. Complex parts can be processed at shorter amount of time.



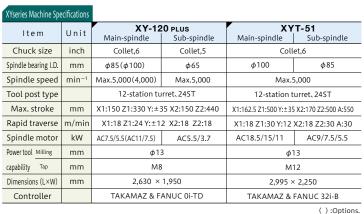
2-spindle and 1-slide TAKAMAZ Specialized Structure.





2-spindle 1-slide

One spindle performs loading while the other is machining. Production rates doubled within the same space!





Sub-spindle + Power tools

XYT-51

















Flexible Usability depending on Production Needs

D-8 PLUS XD-8TPLUS



5inch Chuck











Power Tools Option

D-10 i



6 inch Chuck



XDseries Machine Specifications					
l t e m	Unit	XD-8 PLUS	XD-8T PLUS	XD-10 i	
Chuck size	inch	Collet,(5) × 2		Collet,6 × 2	
Spindle bearing I.D.	mm	φ65		φ75	
Spindle speed	min ⁻¹	Max.4, 500 (8,000)		Max.4, 500 (6,000)	
Tool post type		Gang type	6-station turret	10-station turret	
Max. stroke	mm	X:200 Z:380 (±190)	X:140 Z:380 (±190)	X:120 Z:520	
Rapid traverse	m/min	X:18 Z:24		X:18 Z:24	
Spindle motor	kW	AC3.7/2.2(5.5/3.7 ^{**4}) × 2		AC5.5/3.7(7.5/5.5) × 2	
Dimensions (L×W)	mm	1,580 × 1,550		2,310 × 1,695	
Controller		TAKAMAZ & FANUC 0i-TD		TAKAMAZ & FANUC 0i-TD	

**4.XD-8PLUS: 5.5/3.7kW is exclusive to the specifications for spindle rotations speed of 8,000min⁻¹



Gang type precision lathe that has honed the essentials.

GANG TYPE series



1-spindle 1-slide



USL-480



XG-4



TOP-TURN I



XV-3



Super Compact Machine Body

USL-480



3 inch Chuck









High-accuracy turning with built-in motors

XG-4



4inch Chuck











Fastest Loading Cycle in its Class

J-WAVE PLUS



4inch Chuck









Suited for Powerful Heavy Cutting

TOP-TURN II



6(8) inch Chuck





Integration of diverse processes

XV-3



3/4inch Chuck











():Options.

GANG TYPE series Machine	Specifications						
Item	Unit	USL-480	XG-4	J-WAVE PLUS	TOP-T type A	URNI type B	XV-3
Chuck size	inch	Collet,3	Collet,4		6	8	Collet,3,4
Spindle bearing I.D.	mm	φ50	φ	φ65		φ85	φ60
Spindle speed	min ⁻¹	Max.10,000	Max.8,000	Ma x .4,500	Max.6,000	Max.4,500	Max.10,000
Tool post type		Gang type	Gang type		Gang type		Gang type
Max. stroke	mm	X:160 Z:200	X:200 Z:250		X:300 Z:300		X:160 Z:200 Y:265
Rapid traverse	m/min	X:12 Z:15	X:18 Z:18		X:12 Z:18		X:12 Z:24 Y:24
Spindle motor	kW	AC5.5/3.7	AC7.5/5.5/3.7	AC5.5/3.7	AC7.	5/5.5	AC5.5/3.7
Dimensions (L×W)	mm	480 × 1,941	1,506 × 1,250(780 × 1,735**)		1,820 × 1,510		1,600(2.075) × 2,130 × 2,230
Controller		TAKAMAZ & FANUC 0i-TD / TAKAMAZ & MITSUBISHI M64	TAKAMAZ & MITSUBISHI M80		TAKAMAZ & FANUC 0i-TD		TAKAMAZ & MITSUBISHI M80

*When the loader is mounted



A simple machine best in its class among manual operated machines, focusing the cost performance.

series



1-spindle 1-turret



Excellent Cost Performance



GSL-10H







GSL-15 PLUS















1-spindle 1-turret

A Machine Specialized for Skiving

Turning + grinding on this one machine



SKV-8













Limited exclusively to domestic sales in Japan

I sarias Machina Spacifications

dataeries Maciline apecinications		Lilications			
	Item Unit		GSL-10 H	GSL-15 PLUS	
	Chuck size	inch	Collet,6	Collet,8	
	Spindle bearing I.D.	mm	φ75	φ100	
	Spindle speed	min ⁻¹	Max.4,500	Max.3,500	
	Tool post type		8-station turret	8-station turret	
	Max. stroke	mm	X:120 Z:230	X:175 Z:330	
	Rapid traverse	m/min	X:12 Z:18	X:18 Z:24	
	Spindle motor	kW	AC5.5/3.7	AC7.5/5.5	
	Dimensions (L×W)	mm	1,610 × 1,390	1,875 (With tailstock: 1,990) × 1,680	
	Controller		TAKAMAZ & FANUC 0i Mate-TD	TAKAMAZ & FANUC 0i-TF	

SKV-8 Machine Specification

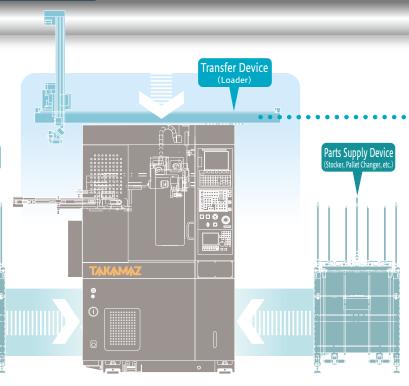
JICV O Macinine Jpc	cilications	
Item	Unit	SKV-8
Chuck size	inch	8
Spindle bearing I.D.	mm	φ100
Spindle speed	min ⁻¹	Max.5,000
Tool post type		12-station turret
Max. stroke	mm	X:150 Y:±35 Z:400
Rapid traverse	m/min	X:18 Y:12 Z:24
Spindle motor	kW	AC 15/11
Dimensions (L×W)	mm	2,270 × 1,690
Controller		TAKAMAZ & FANUC 0i-TF



OPTION SYSTEM

By applying our experiences in manufacturing of peripheral devices and our wealth of design achievements, we will continue to meet the needs of our customers. Parts Supply Device (Stocker, Pallet Changer, etc.)

A production line with different varieties of peripheral devices and loading variations can be designed.



Automation Peripheral Devices



■Station Stocker Flexible Multi-layer

accommodate different part diameter sizes.



■Flat Stocker



■Stocker for Shaft type parts



■ Parts Feeder

Workpieces can be stored together with the tray.



■Tray Changer

Workpieces can be stored in individual

Quality/Environment control unit



■Cleaning Unit

Without operator intervention, cleaning is performed



■ Measuring Devices

errors back to the machine to maintain high-quality



■Oil Mist Collector

Oil mist collection facilitates a clean production environment.



■ Automatic Fire Extinguisher

If fire breaks out in the machine during automatic operations, fire extinguishing agent is automatically discharged.

Cutting efficiency/Chip disposal



■Alloyed Clamp Holder for vibrations suppression

Inhibiting the progression of wear boundary is expected to extend cutting tool life in high speed machining.



■Chip Conveyor

(Spiral Type) Mounted on the rear side Chip disposal is done semi-automatically in



minimal space.

(Floor Type) Mounted on the rear side Chips are reliably discharged outside the



■High-pressure coolant

Constantly cooled coolant is discharged at high pressure so that the tool life is significantly prolonged.



■Semi-dry machining

Ultratrace, highly-lubricating organic coolant is applied to the cutting edge, realizing semi-dry machining.

LOADER SYSTEM

Encouraged from sales of more than 65 years, with "Integral loader" design philosophy in mind, TAKAMAZ will lead the consistent support service follow up and support system built on trust, leading to increased productivity.

Compact Loader

- Hi Speed Loader mounted on the machine to save space.
- A dedicated servo controller allows speedy setup.

Gantry Loader

- Gantry-type servo loader with high rigidity.
- The traverse distance can be extended, ensuring extremely flexible line configuration and systemization of peripheral equipment.

Space Saving Accessory Devices
Improving Durability
Pursuing of the Low Cost
Short Loading Time
Flexible System Line Configuration
Improving operability



For Small and Short Workpiece









L Hand

For Front and Back Cutting Workpiece



Σi GTH Hand

For Shaft Workpiece



Pendulum Hand

Workpiece delivery from transport unit using a conveyor

Vertically-oriented workpiece (for machining the bottom face)



Processing Region

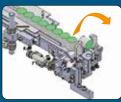


Standing workpiece (For cutting the top surface)



Processing Region

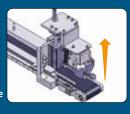




Horizontally placed small diameter workpiece



Pickup Device



TAKAMAZ Collet Chuck



The collet chuck developed and marketed under the TAKAMAZ brand is manufactured in the factory where an integrated system is used to streamline every part of the production, from machining to heat treatment.

Collet run-off accuracy conforms to TAKAMAZ standard, which is even higher than Japanese

Industrial Standards (JIS), allowing us to provide our customers with exceptionally dependable products.



AUTOMATION SYSTEM

ServorOT

A highly-productive robot system that solves your problems!

Reduces personnel costs

This system loads/unloads workpieces with a robot that is integrated with a tray changer. It realizes unmanned operation day and night, and improves production efficiency by maintaining machining quality, ensuring stable loading, and allowing multi-machine control.

Wide range of variations

Based on this robot + tray changer system, we can meet various needs including washing units and gauging systems.

Simple setup

With the integrated robot + tray changer construction, setup can be completed just by teaching on site. The system can be retrofitted to an existing machine provided there is a space of 1.8 x 0.9 meters in front of it. Consultations are welcome.

Retrofitting even to previous models



ADVANCED TECHNOLOGY

T-Support System[®]

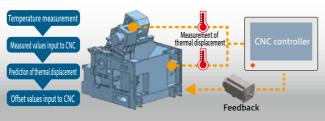
Constantly monitors machines and automatically corrects to the appropriate status!

Thermony®

Patented

Thermal displacement compensation system

The machined dimension values change as the machine temperature changes due to the customer's conditions of use (machining conditions) and the environmental conditions (factory temperature, etc.). This system predicts the amount of thermal displacement based on the temperature changes at each part of the machine and provides compensation values to the CNC controller in order to minimize these changes in the machining dimension values.





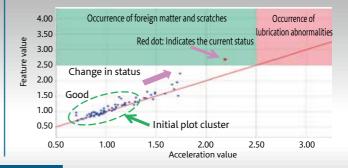
Spimony® Paten

Patented

Spindle condition monitoring system

The application of machine fault diagnosis methods is difficult in many cases where existing threshold values are provided, because the threshold values differ for each machine. We have addressed this issue by providing a new method of diagnosis with a spindle status monitoring system based on the "characteristic space common among machines", which is determined using characteristic quantities.





OPERATING SYSTEM

F Loader System

Featuring Functions Unique to TAKAMAZ!

 Realizes high productivity through increased loader speed and shorter machine stoppage times

Productivity improvement

● Traverse axis: **120m/min** (43% up compared with existing systems)

●Vertical axis: 120 m/min

(69% up compared with existing systems)

Shorter setup times by functions unique to TAKAMAZ

Ease-of-setup improvement

- ●Loader system operation can be checked safely using handle operation.
- ●Two types of teaching methods are available to suit various situations.
- Loader speed optimization function for energy savings and longer service life

Energy saving functions

By automatically optimizing the speed of the loader, loader energy savings and a longer loader service life are achieved.

Loader power consumption Reduced 17%



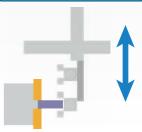
Loader size display function



When setting up after changing the workpiece, teaching can be completed by simply setting the

Teaching time for a workpiece size change **80% shorter**

Y-axis automatic adjustment function



When teaching the loader, the Y-axis position can be automatically adjusted just by repeatedly opening and closing the fingers.

Loading position fine-adjustment time 53% shorter

■ In addition to a touch panel giving exceptional loader operability, a servo system made by FANUC is adopted.

TAKAMAZ OS

TAKAMAZ Technology Aids Productivity

- Functions for better working efficiency in addition to conventional NC screens
 Work simplified by automation of operations and network function
- **Better Working Efficiency**

Operator working efficiency improved, reducing production stoppage time



[Keeping track of production progress]

Production count and tool usage count can be determined at a glance.

[Display of start conditions]

Operations to prepare for starting can be performed quickly.

[Machine stoppage warning]

Advance warning of the next machine stoppage is displayed based on the workpiece count, etc.

[Camera image display (Option)]

Makes it possible to check areas that are difficult to see, like the rear section of the machine.

Quality Control

Storing of traceability information per workpiece to assist quality control



The status of the machine during machining and can be checked and the information can be used for quality control and preventive maintenance.

[Examples of traceability data]

Times, motor temperatures, cycle times, program numbers, tool wear offsets, etc.

IT&Id

Programs can easily be input and output between machines via the network.



[Simple on-screen input/output]
No need to move between machines
No need for USB flash drives
No need for an external computer

PRODUCTS OF PARTNERS



TAKAMAZ-EMAG



TAKAMAZ-EMAG Co., Ltd., is a joint venture between Takamatsu Machinery Co., Ltd., (Japan) and EMAG GmbH & Co. KG (Germany). A whole range of high-quality EMAG products from hard turning machines to grinding machines, laser processing, and gear hobbing machines are available.

Its mission is to offer customized equipment tailored to customers' needs at low prices with short delivery times, and as turnkey projects.

■ VT2-4 vertical lathe with one spindle and two turrets

Ultimate shaft work machine

High speed loading time with a 2-turret simultaneous 4-axis control capability. "VT series" machines are characterized by a construction that gives good access to the machining area and high-power spindles.









F.T. Japan



F.T. Japan Inc. imports machines manufactured by FEELER, ECOCA, and LEADWELL from our affiliate FFG Group (Taiwan), the world's third-largest general machine tool manufacturer, and sells them.

■ General-purpose lathe SJ460 × 1000G

This is a general-purpose lathe manufactured by ECOCA. It has excellent cost performance and is available in a wide range of sizes. The apron handle position can be selected from either the



left or right sides. Slides are hardened/polished. Equipped with an auto-feed stopper ring, machining that meets your needs can be accomplished.

Equipment sold by the TAKAMAZ Group will be fully supported by the TAKAMAZ service network.



Head office and plant

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