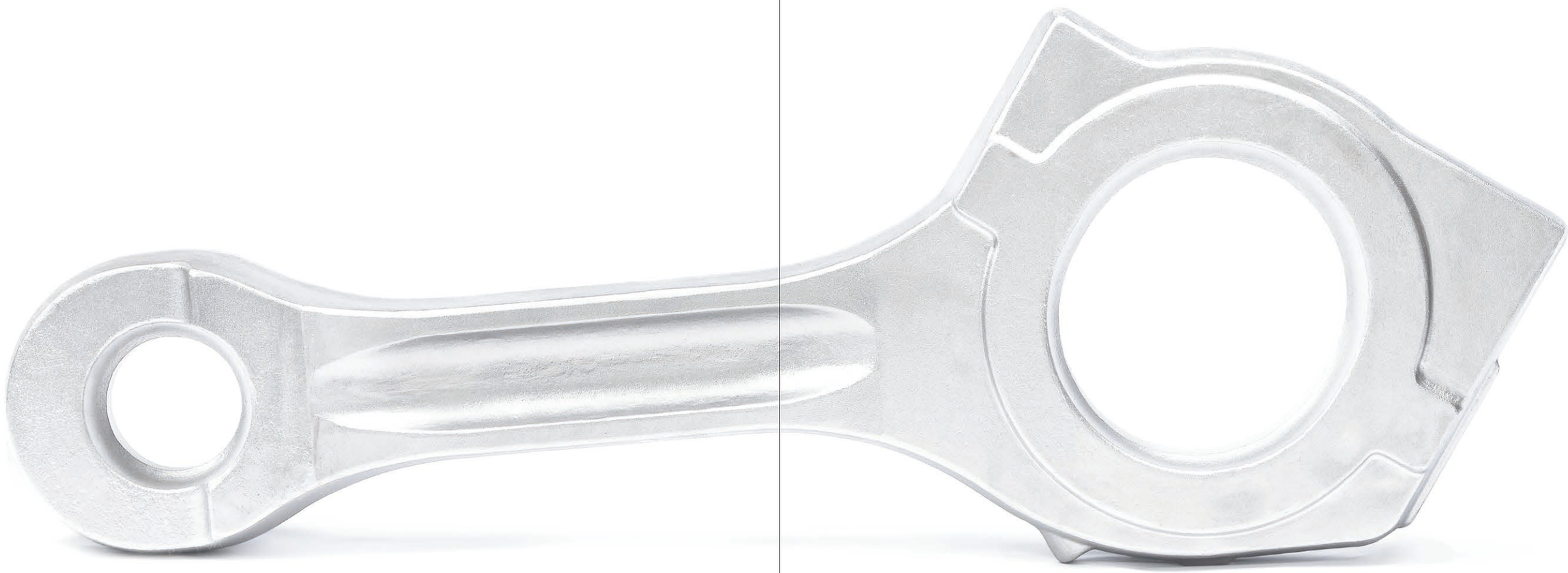
株式会社 ISS山崎機械

ISS YAMAZAKI

COMPANY PROFILE



Since ancient times,
we Japanese have been
hammering and forging steel.

The Best Fusion of Forging and Machining

We, ISS YAMAZAKI, are distinctive with our unique manufacturing lines that have broken through the stereotypes of conventional die forging and with our comprehensive expertise. We also practice integrated production, from fabricating product parts to machining with extensive machining equipment. We make it possible to forge products that used to be impossible through forging.

We meet the diverse needs of our customers with our established production system that we have established to realize a multitude of types of products and steel in small lots with the experience and know-how acquired in various industries.

FORGING - Phase 01

Introduction to Forging

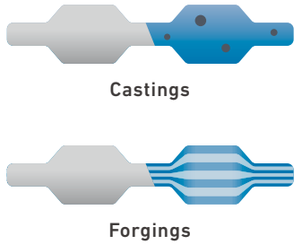
Forging Strengthens Metal

Forging is a process to from metal into a desired shape by applying force to it with tools such as a hammer and also to strengthen its metallographic structure. It has been applied to manufacturing of cutlery, armor, hardware, etc. for centuries.

3 Features of Forged Products

POINT 1

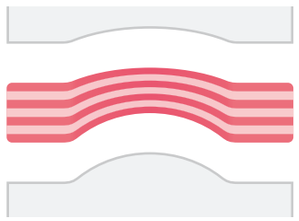
Improvement of Products' Internal Quality



Forging makes the metallographic structure denser, which prevents internal defects such as nests seen in casting.

POINT 2

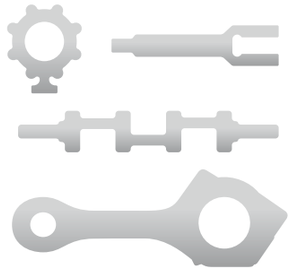
Improvement of Product Strength



Mechanical properties, tensile and impact strength are improved with the grain flow (fiber flow) that matches the product shape.

POINT 3

Overall Cost Reduction



Forging into shapes closer to the finished products reduces processing man-hours, resulting in cost reductions.

Forging Types Available at ISS YAMAZAKI

1. Closed Die Forging

This is molding heated material in a mold of the product shape by hammering it into the shape of the mold.

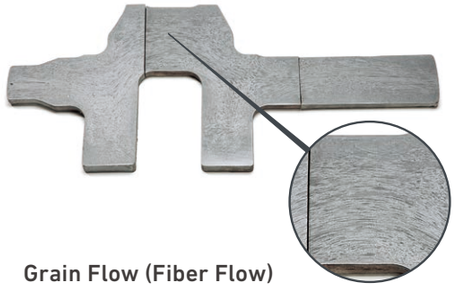
2. Roll Ring Forging

*Manufactured by ISS Fujitan Co., Ltd. (Subsidiary)

This is a standard manufacturing method for ring-shaped parts. Heated material is punched in the center by a press and molded while being rotated by a rolling mill.

3. Open Die Forging

This is molding simple shaped products by hammering and pressing without molds and dies, which allows for manufacturing without the initial cost.



Grain Flow (Fiber Flow)

Forging provides the means for aligning the grain flow to obtain desired directional strengths.

FORGING - Phase 02

Processing Equipment Lineup to Meet the Highest Standard of Forging Technology and Diverse Needs

4 Elements Supporting the YAMAZAKI Brand

POINT 1

Experience and Ingenuity Unparalleled Technical Capability

Each and every one of our skilled workers commands the techniques that we have improved and passed down over the years to manufacture products impossible for other companies, such as large profile products over 200kg.

POINT 2

One-stop Service Even With Finished Parts

Integrated production from material fabrication to final product processing.Ordering to multiple suppliers and its management can be centralized.

POINT 3

Flexibility and Solution Proposal to Meet Customer Needs

A broad lineup of equipment capable of manufacturing small and large products. We are able to provide a wide range of products to a variety of industries.Optimal solution proposals based on our extensive experience and achievement acquired through serving a variety of industries.

POINT 4

Thorough Quality Control

For guaranteed product quality, the most important aspect of manufacturing, we have acquired factory accreditations and certifications of global standards. We are confident in fulfilling strict requirements for product quality and specifications.

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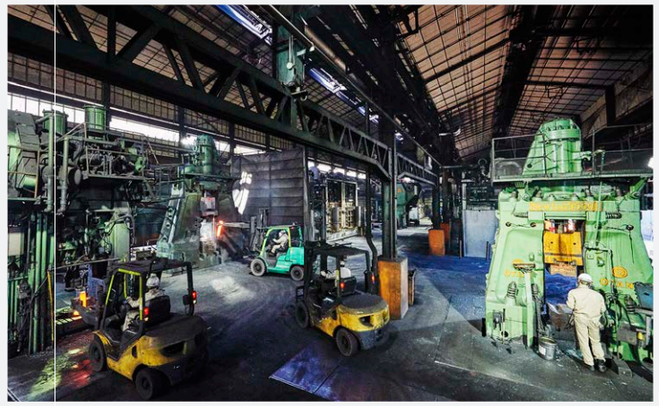

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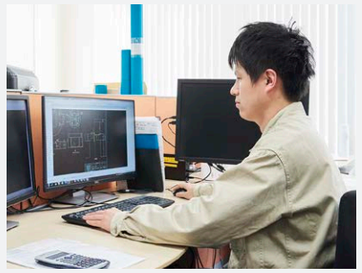

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[01] Closed Die Forging With Our Largest 8-ton Hammer

[02] Production Line With 2 Hammers, 2 Presses, and a Heating Furnace

[03] Finished Parts Fabricated at Minakuchi Plant

[04] Forging and Mold Design by CAD/CAM

[05] Inspection by Contact Type Coordinate Measuring Machine

The Best Fusion of Forging and Machining

Our 11 forging lines and over 40 machining lines enable us to manufacture forged and machined products in wide-ranging sizes.
Under the slogan of “The Best Fusion of Forging and Machining,” we synergize our know-how acquired through both forging and machining to present the best solutions to our customers, considering “thorough optimization.”

From Order to Delivery

Die-Design and Die-Making

We design forging dies based on our experience and exploration. Our expertise in die forging is reflected in our die-design.

Forging

Our plant lines that pursue productivity, safety, and workability manufacture products ranging from 1 kg to 1 t.

Machining

A broad lineup of machining equipment, including 40-plus units for CNC lathes, vertical/horizontal machining centers, and Multi-Axis Machines, manufactures finished complete parts.

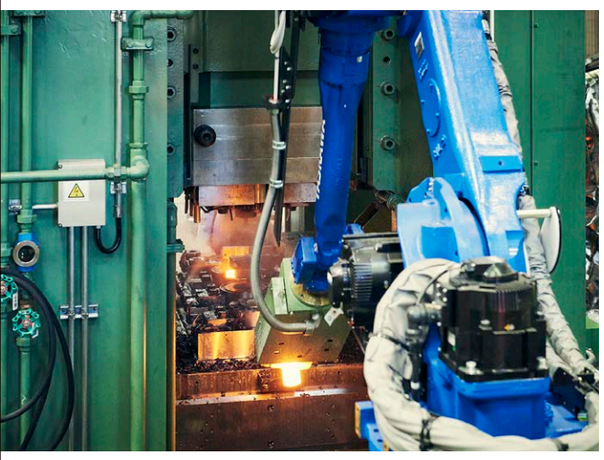
Quality Control

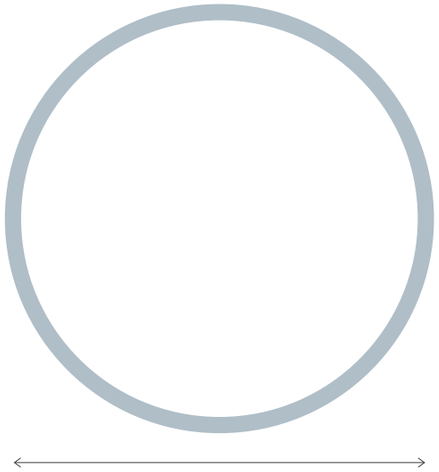
Mechanical property inspections within products, nondestructive testing, and shape measurement using coordinate measuring machines capable of measurements down to 1 μm are conducted.

FORGING - Phase 03

World-class Forging Technology

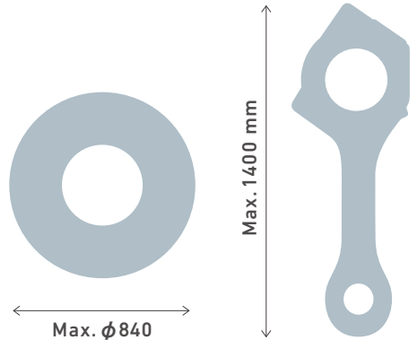
Die forging is a seemingly simple process of “forging to produce.” We have been researching and developing ways to create more complicated shapes, more diverse materials, and larger sizes. These are made possible only by the experience cultivated through our long history and the incomparable techniques of our skilled workers. We would like to introduce the one-of-a-kind forging technology that ISS YAMAZAKI is proud of and is unrivaled in the industry.

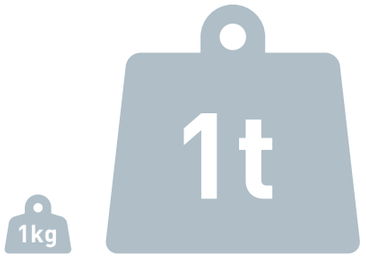




Various Shapes and Sizes are Available

ISS YAMAZAKI's products range widely in shape and size. Our industry-leading adaptability is supported by our skilled workers' techniques developed over the years and our extensive equipment lineup.





Available From 1kg to 1t

Materials We Forge

We handle materials that are difficult to forge and those of overseas standards as well as SC and SCM which are commonly used. We die-forge special materials, such as titanium alloys. We find solutions for materials to match the usage and challenge ourselves to forge unconventional materials.

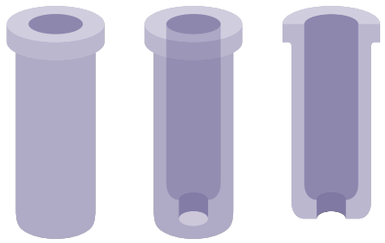
- Stainless Steel
- Tool Steel
- Bearing Steel
- Heat Resistant Steel
- Aluminum Alloy
- Copper Alloy
- Titanium Alloy
- Nickel Alloy
- Others

ASTM　AISI
ASME　DIN

FORGING - Phase 04

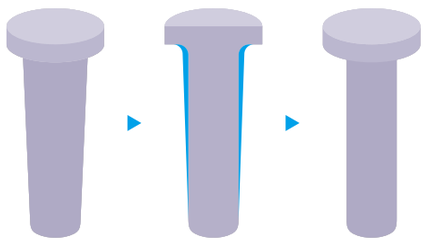
ISS YAMAZAKI's Forging Technology to Make the Impossible Possible

ISS YAMAZAKI's proprietary forging technology has been developed through accumulated know-how and continuous efforts to explore new materials and production methods. Thus, we can create forgings that are difficult for other companies to produce.



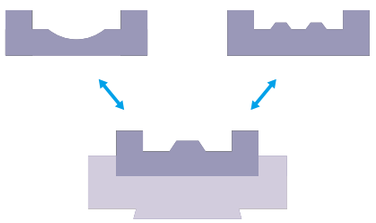
Hollow Shape Forging

Slotted holes, which require a heavy load on the die, are difficult to form by forging. Therefore, it is generally formed by machining. Our special system that has two presses on a single production line enables it to form slotted holes in the forging process. This allows for a significant cost reduction due to shorter machining time.



Draft Angle as Close to 0°

In general, draft angles are required for die forgings to be removed from the die. We can reduce the draft angle to extremely minimum levels with our special equipment and technical capabilities. This leads to the reduction of material costs and machining allowance.



Initial Cost Reduction by Development of Insert Molds

We use insert molds for small and round-shaped products. This reduces initial costs by minimizing material and processing costs required for mold fabrication.

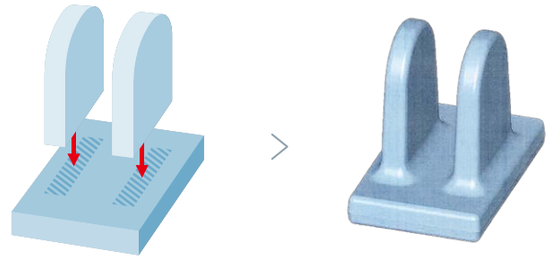
FORGING - Phase 05

Advantages of Different Production Methods to Our Forgings

ISS YAMAZAKI fabricates about 150 molds annually for new products, most of which are manufactured by methods other than forging, such as casting, welding, machining, and lost-wax casting. We contribute to solving many customers' challenges by proposing and implementing forging products made by different methods.

One-Piece Forging

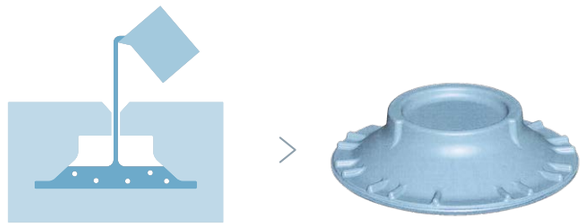
Shifting to forging from welding that joins different materials together as a single piece can also increase product strength. Non-destructive inspection required after welding is also unnecessary. This leads to man-hour and cost savings.



Before [Welding]　　After [Forging]

Converting Castings to Forgings

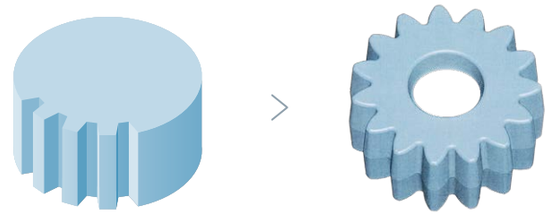
Porosity problems are inseparable from castings. Forging is irrelevant to such internal defects, and achieves high strength on products. This helps to realize more compact parts.



Before [Casting]　　After [Forging]

Near-Net Shape Forgings

Forging with dies enables molding to shapes that are as close as possible to the final shape. Leaving forged surfaces intact for parts that don't require reduces machining to the minimum necessity.



Before [Machining]　　After [Forging]

MACHINING - Phase 01

Stable Supply of High-Quality Finished Parts

We supply products tailored to our customers' needs through not only die forging and roll forging, but also rough machining and finish machining. Our integrated manufacturing from material to processing offers advantages in terms of lead-time reduction and quality assurance. The synergy of our forging and machining expertise ensures the best solutions for our customers from the perspective of "thorough optimization."

POINT 1

Minakuchi Plant, located in a 25,000 m² site area, can provide products of various sizes and shapes with an extensive equipment.

This plant can manufacture various sized and shaped products with over 40 equipment units, such as 5-axis CNC Lathes, Vertical Machining Centers capable of machining up to ϕ2000mm, and Horizontal machining Centers capable of machining up to 1000×1000×1000mm.

POINT 2

24-hour Automation for Stable Product Supply

A flexible production system has been established with production lines equipped with cutting-edge robots and auto-transfer devices. This enables long-hour unmanned processing for high productivity.

POINT 3

Highly Precise Quality Control System

Minakuchi Plant is capable of handling products that require high-precision machining under thermostatic control. Tool presetters also support high-precision machining by reading tool dimensions into IC chips. Optimized temperature control and tool control ensure stable product quality.

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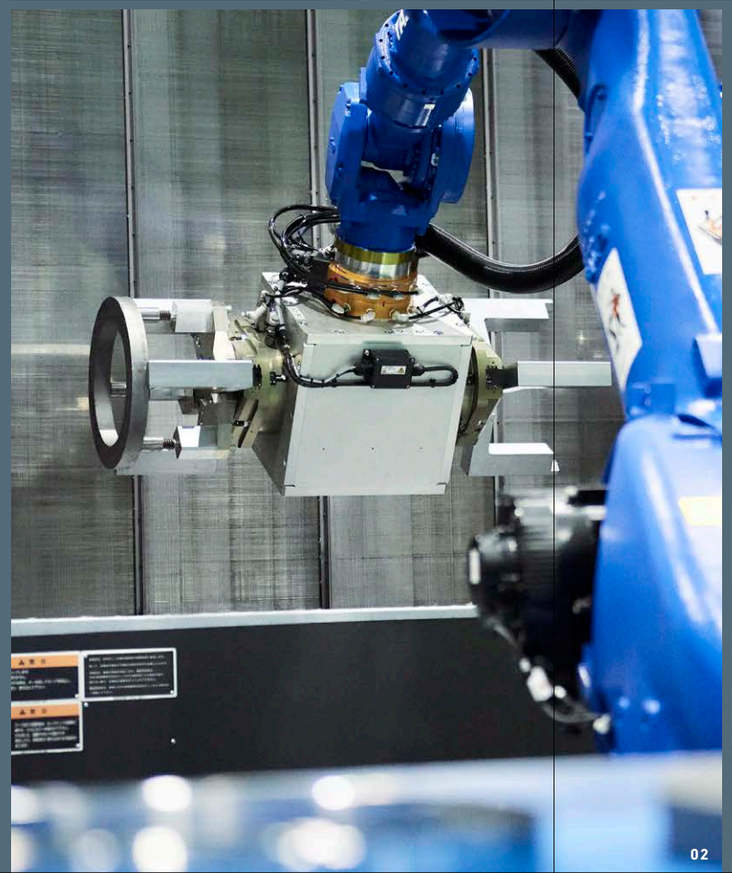

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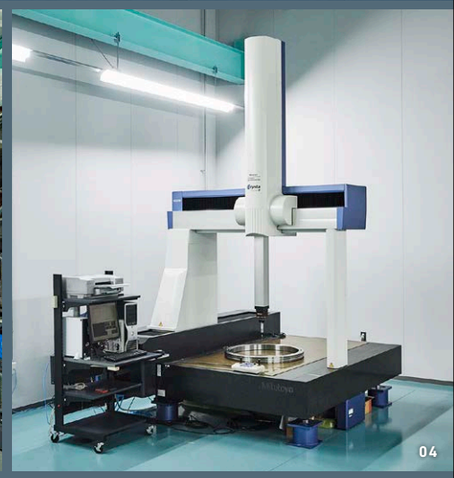

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[01] Whole View of Minakuchi Plant for Machining

[02] Auto-Loading / Unloading by Robot

[03] Automated Warehouse with Storage Capacity of 1760 Pallets

[04] CMM With Measuring Capability of 1200×1200×1000 Size at Max.

[05] Numerous Work Stockers Capable of Long-hour Unmanned Machining

[06] Highly-precise Machined Products by Turning Center

MACHINING - Phase 02

Machining Equipment

We have FMS MC lines capable of round-the-clock unmanned operations and automatic NC lines utilizing robots with a 200 kg carrying capacity. 5-axis integrated NC lathes are available for complex shape machining. We meet diverse customer needs with our extensive equipment lineup, machining materials of various sizes from 1 kg to 1 t, and complex shapes which are manufactured through forging processes.

[Equipment Name] NT5400DCG
[Manufacturer] DMG MORI
[Max. Processing Capacity] ϕ730×1500
[Number of Units Installed] 2
[Note] 5-axis Integrated Horizontal Lathe With Pallet Automation

This is a 2-axis integrated lathe with the turning functionality as a lathe and the milling functionality as a machining center. The combination of robots and an automatic storage racking system enables unmanned mass production of the same-shaped products.

[Equipment Name] a81nx MMC2
[Manufacturer] Makino
[Max. Processing Capacity] 630×630×1020
[Number of Units Installed] 2
[Note] Horizontal Machining Center With Pallet Automation

This has the capacity of pallet-changing for workpieces up to 630x630x1020 mm. It is also capable of unmanned machining of many kinds of products in small lots with automatic storage racking and transfer systems and a magazine attachment that can store multiple angle plates and 187 tools.

[Equipment Name] INTEGREX e-500H
[Manufacturer] MAZAK
[Max. Processing Capacity] ϕ820×1500
[Number of Units Installed] 1
[Note] 5-axis Integrated Horizontal Lathe

This 5-axis integrated NC lathe can machine up to φ820. Multiple processes that used to be completed by a MC and an NC lathe can be integrated with the milling function of this machine, which realizes high productivity.

[Equipment Name] VT7-1600Mi
[Manufacturer] O-M
[Max. Processing Capacity] ϕ2000×1600
[Number of Units Installed] 1
[Note] Turning Center

This is our largest turning center capable of processing workpieces up to φ2000 mm in outer diameter. It ensures highly precise positioning with 2 table drive motors and enables high-precision machining for large products.

[Equipment Name] H40i
[Manufacturer] YASDA PRECISION TOOLS
[Max. Processing Capacity] 400×400×350
[Number of Units Installed] 1
[Note] 5-axis Horizontal Machining Center

Simultaneous 5-axis machining and high-precision indexing machining down to 1 μm are both possible with this horizontal machining center. Highly efficient machining for products requiring complex shapes and high precision is also possible with its pallet changer.

[Equipment Name] A100E
[Manufacturer] Makino
[Max. Processing Capacity] 1000×1000×1000
[Number of Units Installed] 1
[Note] Horizontal Machining Center

his is our largest machining center, capable of processing up to 1000×1000×1000. This can process multiple units simultaneously by utilizing large angle plates and can also operate continuously for long hours with pallet changers.

Equipment List of Minakuchi Plants

Plant Equipped	Equipment Name	Manufacturer	Max. Processing Capacity	Number of Units	Note
Minakuchi 1st Plant	NLX4000/750	DMG MORI	ϕ520×800	3	Integrated Horizontal Lathe
	NLX2500/700	DMG MORI	ϕ268×700	1	Autonomation Line of NC Lathe With Handling Robot
	NLX3000/700	DMG MORI	ϕ420×700	2	Integrated Horizontal Lathe
	NL3000MC/700	DMG MORI	ϕ420×700	1	Integrated Horizontal Lathe
	NL3000MC/1250	DMG MORI	ϕ420×1200	1	Integrated Horizontal Lathe
	SL603BMC/2000	DMG MORI	ϕ700×1850	1	Integrated Horizontal Lathe
	SL403B	DMG MORI	ϕ520×800	1	NC Lathe
	NL2500/700	DMG MORI	ϕ350×700	1	NC Lathe
	CL253	DMG MORI	ϕ350×400	1	NC Lathe
	LB4000EXII	Okuma	ϕ430×700	1	Integrated Horizontal Lathe
	INTEGREX e-500H	MAZAK	ϕ820×1500	1	5-axis Integrated Horizontal Lathe
	AM25	Ikegai	ϕ250×900	1	Universal Lathe
	CLL1000	Chubu Koki	ϕ400×1000	1	Universal Lathe
	CLL1500	Chubu Koki	ϕ500×1300	1	Universal Lathe
Minakuchi 2nd Plant	a81nx MMC2	Makino	630×630×1020	3	Horizontal Machining Center With Pallet Automation
	NT5400DCG	DMG MORI	ϕ730×1500	2	Integrated Horizontal Lathe With Pallet Automation and Robot
	NLX2000	DMG MORI	ϕ260×510	1	Autonomation Line of NC Lathe With Handling Robot
Minakuchi 3rd Plant	A100E	Makino	1000×1000×1000	1	Horizontal Machining Center
	MILLAC761VII	Okuma	1800×720×860	1	Vertical Machining Center
	MILLAC561V	Okuma	1050×560×520	2	Vertical Machining Center
	H40i	YASDA PRECISION TOOLS	400×400×350	1	5-axis Horizontal Machining Center
	H40i-24PLT	YASDA PRECISION TOOLS	400×400×350	1	5-axis Horizontal Machining Center 24APC
	YZ-550NCR	YAMASAKI GIKEN	1050×550×550	1	NC Milling Machine
	VT7-1600Mi	O-M	ϕ2000×1600	1	Turning Center
	MEGA TURN1600M	MAZAK	ϕ1500×800	1	Turning Center
	MEGA TURN900M	MAZAK	ϕ800×500	2	Turning Center
	Omega50	O-M	ϕ915×500	1	Turning Center
	Omega70	O-M	ϕ1250×700	1	Turning Center
	V920EX-L	Okuma	ϕ920×860	1	Turning Center
	V920EX-R	Okuma	ϕ920×860	1	Turning Center
Minakuchi 5th Plant	MEGA TURN900M	MAZAK	ϕ800×500	2	Autonomation Line of Vertical Lathe With Handling Robot
	N400V	Komatsu NTC	600×450×450	2	Autonomation Line of Horizontal Machining With Handling Robot
	NRX2000	DMG MORI	ϕ150×150	4	NC Lathe With Built-in Robot Loader
Inspection Room	CRYSTA-APEX	Mitutoyo	1200×1200×1000	1	Coordinate Measuring Machine
	CRYSTA-APEX V162012	Mitutoyo	1600×2000×1200	1	Coordinate Measuring Machine
	Handheld Probe XM	KEYENCE	ϕ1000	1	Handheld Probe Coordinate Measuring Machine
	venturion450	ZOLLER	ϕ420×820	1	Tool Presetters

FORGING PRODUCTS

Forged Products

With 11 large-scale forging production lines,
ISS YAMAZAKI produces more than 150 new forgings of
various materials and shapes annually.

N Name W Weight F Product Feature
M Material E Equipment Used

Large Ships / Tankers

Ship Parts

N Connecting Rod M SCM440H W 211 kg E 8T

F Connecting rods for marine engines. This product, with a total length of 1,350 mm, is our longest forging. Our proprietary molding method, which is a fusion of open die forging and die forging, has been used to maximize the yield of materials.

Akashi-Kaikyo Bridge

Bridge Parts

N Hanger Socket M S45C W 390 kg E 8T

F Joint parts for the cables suspending the Akashi-Kaikyo Bridge. We succeeded in increasing their strength and reducing their size by die-forging them, which were formerly designed as cast steel products.

*Cross-sectional Image

Dump Truck Parts

N Axle Tube M S45C
W 178 kg E 8T

F Axle parts for large dump trucks.Material reduction and significant machining cost reduction after forging are achieved by the squeezing method.

Bulldozer Parts

N Cover M SMN443H
W 141 kg E 8T

F Used for the undercarriage of bulldozers. This was conventionally a cast steel product, and has been produced by die forging.

Wheel Loader Parts

N Shaft M Original
W 157kg E 8T

F Parts for large wheel loaders. Its entire length is one of the longest among our die-forgings.

Building Structural Parts

N Base M SS400
W 38.8 kg E 5T

F Used for the foundation of lighting poles. This was conventionally a welded product. It has been produced by die forging and is superior in strength and appearance, and contributes to the reduction of welding man-hours.

Valve Parts

N Upper and Lower Valve Body
M A105 W 122 kg E 8T

F Valve bodies for city gas piping. Forging a curved shape of 760 mm in length and 400mm in height from a φ230 round bar, which is rated as S4, the highest forging difficulty level.

Clamping Machine Parts

N Fixation Cap M SCM440H
W 38kg E 5T

F Parts that grip gondola ropes to support gondola lifts. They were conventionally structured by welding, but have been die-forged.

Large Excavator Parts

N Gear M SCM822H
W 210kg E 8T

F Gears used for large excavators. They were previously open-die-forged and machined, and have been die-forged to significantly reduce the man hours of gear cutting.

Compressor Parts

N Crankshaft M SF540A
W 121 kg E 8T

F Crankshafts for compressors. This production has shifted from open die forging to die forging.

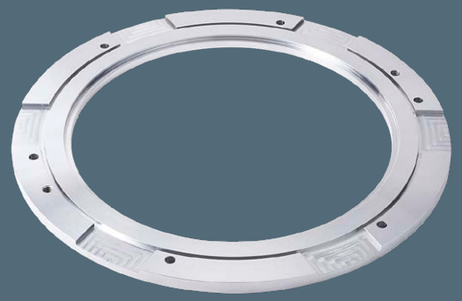
MACHINING PRODUCTS

Machined Products

Our machining maintains both 1/1000-mm precision
and high productivity under a strictly optimized temperature control.
Introducing finished parts manufactured by state-of-the-art equipment.

N Name W Weight F Product Feature
M Material E Equipment Used

Dump Truck



Dump Truck Parts

N Hanger Socket M SCM435H W 29.9 kg
E MEGA TURN900M, MILLAC761V II

F Brake parts for extra-large dump trucks. Integrated production from roll forging to machining.The thinness of 20 mm for an outer diameter of φ800 meets a strict geometric tolerance without a polishing process.

Bulldozer

Bulldozer Parts

N Ball Stud M S45C W 31.6 kg E NT5400DCG

F Parts connecting vehicle bodies and blades.Processed on an unmanned line equipped with automatic racks and robots. Grooving on and drilling through spherical surfaces with an integrated lathe requires advanced technology.

Railroad Parts

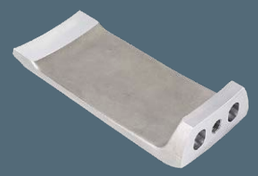
N Truck Part W 8.7 kg
E NL2500 / 700, MILLAC561V

F Truck parts of railroad cars in Singapore. We even manufacture machined products of railroad car parts, which require high quality control.

Railroad Parts

N Truck Part W 4.9 kg
E a81nx

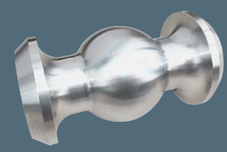
F Forging parts welded conventionally in a single piece. No welding leads to shorter lead times without nondestructive testing.



Dump Truck Parts

N Dagger M SCM440H
W 36.5 kg E Omega70

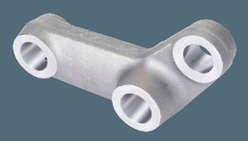
F Undercarriage parts for extra-large dump trucks. Lathing 3 positions of the arc section achieves 0.1 coaxiality.



Bulldozer Parts

N Trunnion M S45C
W 5.1 kg E NT2500 / 700

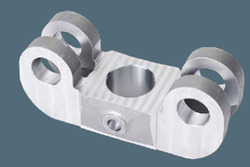
F Parts connecting blades. Centering is conducted by chucking the spherical part of die-forgings. This product requires expertise based on experience over many years.



Snowplow Parts

N Link Arm M S35C
W 13.0 kg E Omega 70

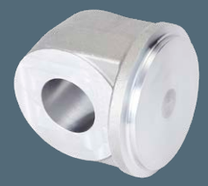
F Unmanned machining only necessary parts of the product with FMS achieves a fit tolerance of H7.



Snowplow Parts

N Arm Supporter M S35C
W 20.0 kg E a81nx

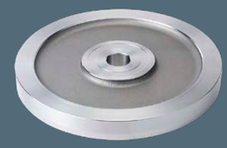
F Forging a bifurcated shape contributes to significant reduction in its machining time. Unmanned machining with FMS achieves a fit tolerance of H7.



Hydraulic Component Parts

N Bottom M S45C
W 20.0 kg E INTEGREX 50

F Machined in two steps with integrated lathes only. Products requiring an H7 fit tolerance.



Ship Parts

N Gear M SCM420H
W 32.0 kg E MEGA TURN900M

F This product with an outer diameter of φ500 is machined with a turning center while adjusting its turning speed to achieve an H7 precision of an inner diameter of φ50.

Equipment List

Forging Facilities and Equipment at Main Plant

Name	Capacity / Model	Specification	Number of Units	Manufacturer	Note
Air Stamp Hammer	Newton30000E	Knockout Device Built-in	1	OTANI MACHINERY	8t
Air Stamp Hammer	Newton25000E	Knockout Device Built-in	1	OTANI MACHINERY	6t
Air Stamp Hammer	DIE-MAX220E	Knockout Device Built-in	1	OTANI MACHINERY	5t
Air Stamp Hammer	DIE-MAX180E	Knockout Device Built-in	1	OTANI MACHINERY	4t
Air Stamp Hammer	NEW-MAX160S	Knockout Device Built-in	1	OTANI MACHINERY	3t (8t for rough forging)
Air Stamp Hammer	Newton9500E	Knockout Device Built-in	1	OTANI MACHINERY	2t (6t for rough forging)
Air Stamp Hammer	DIE-MAX150E		1	OTANI MACHINERY	1.5t (5t for rough forging)
Trimming Press	1600t		2	VORONEZH	For 8-ton/6-ton Lines
Trimming Press	800t		1	Baba Tekko	For 6-ton Lines
Trimming Press	300t		1	AMADA	For 5-ton Lines
Trimming Press	500t		1	Press Giken	For 4-ton Lines
Batch Type Heating Furnace	City Gas		1	Osaka Gas / DAIKYO TAIKA	For 5-ton Lines
Batch Type Heating Furnace	City Gas	Regenerative Burner	12	Chugai Ro / DAIKYO TAIKA	For 8t / 6t / 5t / 4t
Batch Type Preheating Furnace	City Gas	Regenerative Burner	3	DAIKYO TAIKA	For Preheating Molds

Forging Facilities and Equipment at Muroto Plant

Name	Capacity / Model	Specification	Number of Units	Manufacturer	Note
Air Stamp Hammer	Newton13000E	Knockout Device Built-in	2	OTANI MACHINERY	
Air Stamp Hammer	Newton9500E	Knockout Device Built-in	1	OTANI MACHINERY	
Air Stamp Hammer	NewtonYZ85E	Knockout Device Built-in	1	OTANI MACHINERY	
Air Stamp Hammer	NEW-MAX55E	Knockout Device Built-in	1	OTANI MACHINERY	
Air Stamp Hammer	DIE-MAX45E	Knockout Device Built-in	1	OTANI MACHINERY	
Trimming Press	400t		2	Baba Tekko/VORONEZH	For 3t Lines
Trimming Press	300t		1	Baba Tekko	For 2t Lines
Trimming Press	200t		3	Yodogawa Press / Kurimoto Tekko / Ikuno Tekko	For 1.5t / 1.3t / 1t Lines
Batch Type Heating Furnace	LPG	Regenerative Burner	8	DAIKYO TAIKA	For 3t / 2t / 1.5t Lines
Batch Type Heating Furnace	LPG	Regenerative Burner (Pusher Type)	1	DAIKYO TAIKA	For 1.3t Lines
Induction Heater	USH-NJF-3UB	350kw Model	1	UCHINO	For 1t Lines
Batch Type Preheating Furnace	LPG		2	DAIKYO TAIKA	For Preheating Molds
Forging Press	C2F-20	200t Model	1	Kurimoto	2000t
Transferring Robot	GP88		2	YASKAWA Electric	For 2000t Lines
Transferring Robot	GP110		2	YASKAWA Electric	For 2000t Lines
Induction Heater	USH-NFH-2UB	230kw Model	1	UCHINO	For 2000t Lines

Testing, Inspection, Finishing, and Heat Treatment Facilities and Equipment at Main Plant

Name	Model	Capacity	Number of Units	Manufacturer	Note
SHIMADZU Universal Testing Machine	UMH-50	50KN / 100KN / 250KN	1	SHIMADZU	
Impact Testing Machine	PIT452D	450J	1	NTS	
3D Scanner CMM Controller	VL-500		1	KEYENCE	
Wide Area CMM	WM-3500		1	KEYENCE	
Brinell Hardness Testing Machine (Hydraulic Type)	NBH-3	500kgf, 3000kgf	1	Nakai Precision Machinery Mfg.	
Rockwell Hardness Testing Machine	3R		1	Imai Shikenki	
Shore Hardness Testing Machine	D Type		1	Togoshi Seiki	
Ultrasonic Optical Flaw Detector	USM35X		1	Japan Krautkramer (Current:KJTD)	
Magnetic Particle Flaw Detector	C1714		1	Denshijiki Industry	
Magnetic Particle Flaw Detector	C2278		1	Denshijiki Industry	
Black Light	D-10B		2	MARKTEC	
LED Black Light	UV-3000MS		1	MEIKO	
LED Black Light	HB302WLi		4	Techno-Ark	
Handy Magna	NC-2Y		4	MARKTEC	
Handy Magna	A-2		2	EISHIN KAGAKU	
Handy Magna	A-6	400 to 3000	1	EISHIN KAGAKU	
Radiation Thermometer	IR-HAQNN		1	CHINO	
Equotip Hardness Tester	piccolo	0 to 1000 times	1	Proceq	
Microscope	VW-9000		1	KEYENCE	
Specimen Polishing Machine	FTP200S		1	FUTURE-TECH	
Shot Blaster	HDF-20Y		1	NICCHU	
Shot Blaster	SNB50T-77		1	SINTOKOGIO	For N / A / NT
Carriage Type Heat Treatment Furnace	Specification: City Gas / Regenerative Burner		1	DAIKYO TAIKA	

Inspection and Finishing Facilities and Equipment at Muroto Plant

Name	Model	Number of Units	Manufacturer
Magnetic Particle Flaw Detector	JH2620-03SY	1	Nihondenki Kogyo
Magnetic Particle Flaw Detector	EB-5AS	1	Nihondenki Kogyo
Handy Magna	A-1	2	EISHIN KAGAKU CO., LTD.
Radiation Thermometer	IR-AHSO	1	CHINO
	BAT550 (With Pallet Changer)	1	Wheelabrator (DISA)
Black Light	S-35LC	2	EISHIN KAGAKU CO., LTD.
Ultrasonic Optical Flaw Detector	USM35X JE	1	Japan Krautkramer (Current: KJTD)
Equotip Hardness Tester	piccolo	1	Proceq
Shore Hardness Testing Machine	D type	1	Nakai Precision Machinery Mfg.
Brinell Hardness Testing Machine	NEXUS3200P	1	INNOVATEST
Transferring and Deburring Robot	M-710iC/70	2	FANUC FANUC
Oil-Water-Separating Fluorescent Penetrant Testing Device	EFC-1B	1	EISHIN KAGAKU CO., LTD.
3D Scanner CMM Controller	VL-300 Series	1	KEYENCE
Batch Type Annealing Furnace	LPG	1	KYOWA FURNACE

Sawing Equipment at Minakuchi Sawing Plant

Name		Model	Number of Units	Manufacturer
High Speed Circular Sawing	Machine	TK200G	1	TSUNE SEIKI
Band Saw Machine		HA500	5	AMADA
Band Saw Machine		HA400	1	AMADA
Band Saw Machine		PCSAW430	1	AMADA
Band Saw Machine		PCSAW530	2	AMADA

Sawing Equipment at Nahari Plant

Name		Model	Number of Units	Manufacturer
Band Saw Machine		HA400	2	AMADA
Band Saw Machine		HA500	2	AMADA
Band Saw Machine		PCSAW430	3	AMADA
High Speed Circular Sawing	Machine	CM-100CNC	2	AMADA
High Speed Circular Sawing	Machine	CM100CNC II	1	AMADA
High Speed Circular Sawing	Machine	CM150-AN	1	AMADA

Mold Fabrication and Machining Equipment at Minakuchi Plant

Name	Model	Number of Units	Manufacturer
Lathe	770×2500	1	Yamazaki
Lathe	LHS-3612	1	Seibu Koki
Lathe	6H40	1	Fujii Seiki (Current: Fujii)
Lathe	LF1000	1	Chubu Koki
NC Lathe (With Control)	DLX75×150	1	DAINICHI KINZOKU KOGYO
Radial Drilling Machine	RE2-1300A	1	OHYA
Machining Center	MILLAC-1052V	1	Okuma
Machining Center	MILLAC-1052V II	1	Okuma
Machining Center	MILLAC-761V II	2	Okuma
Machining Center	BRIDGEcenter8F	1	Kitamura
Machining Center	VM940R	2	OKK
Fine Hall EDM Drilling Machine	2Z4001P3-01	1	ASTEC
CNC Lathe	TG-4020	1	Takisawa Machine Tool
Horizontal Boring Machine	KBM-11EM	1	Kurashiki Kikai (Current: DMG MORI Precision Boring)
NC Lathe	DL530X100	1	DAINICHI KINZOKU KOGYO

Mold Fabrication and Machining Equipment at Muroto Plant

Name	Model	Number of Units	Manufacturer
Plano Miller	C-16	1	CHUO PRECISION INDUSTRIAL
Drilling Machine	RE2-1300A	1	OOYA
Drilling Machine	TRD800C	1	TOA
Lathe	CLL1000	1	Chubu Koki
Lathe	LE-19J	2	Washino
Lathe	DLG-SH	1	DAINICHI KINZOKU KOGYO
Lathe (With Control)	DL65×150	1	DAINICHI KINZOKU KOGYO
CNC Lathe	QUICK TURN 350	1	MAZAK
CNC Lathe	QUICK TURN 400	1	MAZAK
CNC Lathe	QUICK TURN 450	1	MAZAK
Band Saw Machine	HFA500S	1	AMADA

Forging and Testing Equipment at ISS Fujitan

Name	Capacity	Model	Number of Units	Manufacturer
Ring Rolling Mill	Fully Automated 2700	MRX-2700	1	Mitsubishi Nagasaki Machinery Mfg.
Ring Rolling Mill	Fully Automated 2500	MRX-2500	1	Mitsubishi Nagasaki Machinery Mfg.
Ring Rolling Mill	Fully Automated 1500	MRX-1500	1	Mitsubishi Nagasaki Machinery Mfg.
Ring Rolling Mill	Fully Automated 1100	MRX-1100	1	Mitsubishi Nagasaki Machinery Mfg.
Ring Rolling Mill	Fully Automated 600	MRX-600	2	Mitsubishi Nagasaki Machinery Mfg.
Hydraulic Press	2000t		1	NKK Plant
Hydraulic Press	1500t		1	Kawasaki Hydromechanics
Hydraulic Press	600t		1	The Japan Steel Works
Lever Press	1000t		1	MANYO
Crank Press	2500t (Automated Line With Robots)		1	VORONEZH
Charpy Impact Testing Machine	300J		1	MAEKAWA TESTING MACHINE MFG.
Universal Testing Machine		RH-30	1	SHIMADZU
Brinell Hardness Testing Machine		NBH-3	1	Nakai Precision Machinery Mfg.

Certifications

ISO9001

NIPPON KAIJI KYOKAI / NK

Lloyd's Register (UK) / LR

Korean Register / KR

Det Norske Veritas (Norway, Germany) / DNV, formerly DNV GL

China Classification Society / CCS

Bureau Veritas / BV

American Bureau of Shipping / ABS

Company Overview

History

1946 Mar. Established Yamazaki Machinery Manufacturing
1948 Oct. Reorganized as Yamazaki Machinery Manufacturing Ltd.
1953 Mar. Launched the forging business
1959 Feb. Reorganized as Yamazaki Machinery Manufacturing Co., Ltd.
1966 Mar. Added a 2-ton air stamp hammer
1969 Jun. Built Shiga Plant in the Konan Industrial Park
Added 3-ton and 1-ton air stamp hammers
1972 May Transferred the entire operation of Osaka Plant to Shiga Plant
Added a 1,000-ton hydraulic press
1975 Feb. Certified by Lloyd's Register

1978 Jul. Formed a capital alliance with Inoue Special Steel Co., Ltd.
1981 Mar. Added a 1.5-ton air stamp hammer
1982 Jul. Shifted completely to energy-saving furnaces
1983 Aug. Added energy-saving furnaces
1.5-ton process-controlled hammers (with computer devices)
1984 Oct. Reconstructed the office and constructed a sawing plant and a finishing plant
1985 Feb. Added heat treatment furnaces
1986 May Added a 1-ton air stamp hammers
Oct. Certified by NIPPON KAIJI KYOKAI
1988 Apr. Constructed an 1800-ton press forging plant
Added forging presses
1990 Aug. Added 30000E air stamp hammers
1991 Mar. Opened Aito Plant
1997 Apr. Opened Muroto Plant
1999 Oct. Certified to an international standard, ISO 9002
2000 Aug. Added 1600-ton trimming presses
2001 Jan. Reorganized Daiwa Kanagata Co., Ltd.
as Yamazaki Machinery Manufacturing, Kuwana Plant
2003 Dec. Updated to an international standard, ISO 9001:2000
2004 Nov. Added 5-ton air stamp hammers at Main Plant
2006 Aug. Shifted to energy-saving gas regenerative burner furnaces at Main Plant
Dec. Opened Nahari Plant and Minakuchi Plant
2007 Jan. Added a 3-ton air stamp hammer at Muroto Plant
Mar. Added a 6-ton air stamp hammer at Main Plant
Sep. Obtained the Ecostage certification
2009 Oct. Updated to an international standard, ISO 9001:2008
2010 Jun. Obtained the Ecostage 2 certification
2012 Feb. Shifted to energy-saving gas regenerative burner furnaces at Muroto Plant
2013 Jul. Added 1600-ton trimming presses at Main Plant
2017 Apr. Absorbed and merged Inoue Machinery Co., Ltd.
Oct. Updated to an international standard, ISO 9001:2015
2018 May Opened Minakuchi Sawing Plant
2019 Feb. Transferred the entire operation of Aito Plant to Minakuchi Plant
Mar. Added 2,000-ton press lines at Muroto Plant
2022 Jan. Renamed to ISS Yamazaki Co., Ltd.

Company Profile

Company Name

ISS Yamazaki Co., Ltd

Location

Headquarters / Main Plant
3-2 Hie, Konan, Shiga
520-3203, Japan

Muroto Plant
1922-1 Kiragawa Otsu, Muroto, Kochi
781-6831, Japan

Established

March 1946

Capital

87.95 million yen

Representative

Representative Director, Hisakazu Inoue

Bank

Mitsui Bank, Osaka Nishi Branch
Mizuho Bank, Kujo Branch
Kansai Mirai Bank, Kosei Branch

Employees

220

Business Outline

Manufacture of Die-forged Products (Headquarters and Muroto)
Manufacture of Machined Products (Minakuchi)
Manufacture of Roll-forged Products (ISS FUJITAN)

Monthly Production Capacity

3,000t

Affiliated Companies

ISS REALIZE CO., LTD.
1-33-8 Shinmachi, Nishi, Osaka
550-0013, Japan

ISS FUJITAN CO., LTD.
1384-1 Hane Ko, Muroto, Kochi
781-6831, Japan

ISS DAINICHI CO., LTD.
1-22 Himegaoka, Kani, Gifu
509-0249, Japan

ISS NISHIKAWA CO., LTD.
9593-1 Miyakoda, Hamana, Hamamatsu,
Shizuoka 431-2102, Japan

ISS ART MARK CO., LTD.
51 Asahioka, Kannabe, Fukuyama,
Hiroshima 720-2113, Japan

Major Clients

Komatsu Ltd.
Hitachi Construction Machinery Co., Ltd.
Kobelco Construction Machinery Co., Ltd.
NIPPON STEEL CORPORATION
Hitachi, Ltd.
Kawasaki Railcar Manufacturing Co., Ltd.
NIPPON SHARYO, LTD.
Japan Transport Engineering Company
Hitachi Zosen Corporation
(Current: Kanadevia Corporation)
Mitsui E&S Machinery Co., Ltd.
(Current: MITSUI E&S Co., Ltd.)
Kawasaki Heavy Industries, Ltd.
DAIHATSU DIESEL MFG. CO., LTD
(Current: DAIHATSU INFINEARTH MFG. CO., LTD.)
YANMAR POWER TECHNOLOGY CO., LTD.
IHI Power Systems Co., Ltd.
JFE Engineering Corporation
FANUC CORPORATION
Harmonic Drive Systems Inc.
JX Advanced Metals Corporation
DMG MORI CO., LTD.
THK CO., LTD.
NTN Corporation
JTEKT CORPORATION
NSK Ltd.
Toshiba Corporation
IHI Corporation
Mitsubishi Heavy Industries, Ltd.
Mitsubishi Electric Corporation
Panasonic Corporation
Hitachi Construction Truck Manufacturing Ltd.
Conval, Inc.


Main Plant


Minakuchi Plant


Minakuchi Sawing Plant

SHIGA Area


Muroto Plant

Nahari Plant

ISS FUJITAN

KOCHI Area