Date: 03/11/2025

Dear Sir/Madam,

Thank you for your interest in Mazak machine tools. With reference to your enquiry we have pleasure in submitting the following offer:

ST-X 3015 CO2 4kW

Yamazaki Mazak is the World's leading manufacturer of metal cutting machine tools, CNC laser cutting machines, flexible manufacturing systems (FMS), CAD/CAM products and factory management software.

The ongoing effort to improve our machines guarantees their compliance with both current and future requirements of hi tech manufacturing.

We kindly ask you to pay attention to the standard specification of our machines and their wide range of capabilities when making comparisons with offers from our competitors. The final price reflects the outstanding parameters and machining capabilities of Mazak machine tools as well as their quality and reliability. Running costs, ease of programming and service and maintenance costs also affect total investment outlay. Taking these variables into

consideration we hope that this offer will meet your satisfaction.

Kind regards,

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Approved
Radosław Chojnacki
Laser Business Manager

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1.0 Mazak Overview

Yamazaki Mazak Minokamo 1 Plant in Gifu-Prefecture, Japan.

THE GLOBAL STRENGTH OF YAMAZAKI MAZAK

Yamazaki Mazak is the world's largest manufacturer of machine tools. We produce systems for the precision manufacturing of metal parts including laser-cutting machines, CNC turning centers, horizontal and vertical machining centers, multi-tasking machining centers, turnkey cells and software solutions to help customers achieve lean, efficient manufacturing operations. We have developed unique products that realize unsurpassed productivity and established 80 Technology and Technical Centers all over the world to provide total solutions and optimum service support close to our customers.

MAZAK LASER TECHNOLOGY

Mazak Laser offers an extensive range of 2D and 3D laser-cutting equipment encompassing over 50 machine models. This innovative range of products enables Mazak to better meet your specific laser application needs. Mazak is a laser technology leader who can significantly improve production efficiency, competitive positioning and profitability. We utilize innovative engineering and intelligent automation to simplify operation and deliver more consistent machine performance.

MAZAK SUPPORT IN EUROPE

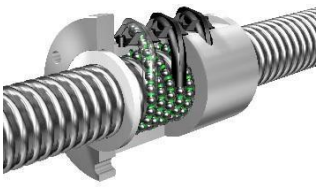
Mazak Laser Technology Center supporting our customers in over 30 countries. Our commitment to your continued productivity doesn't end with purchasing your Mazak machine. At Mazak, our extensive service network provides you with our expertise, whenever and wherever you need us.

MAZAK EUROPEAN PARTS CENTRE

Located in Belgium, the European Parts Centre has warehouse capacity of 4,600m^2 and is capable of shipping 97% of Mazak parts on the same day. The new facility can ship over 20,000 parts per month with orders being processed 365 days a year. The state-of-the-art warehouse is fully automated and equipped with a new "mini-load" system for small parts picking from 8,000 small trays, travelling from 70,000 locations within the warehouse, and a stacker crane system for 3,000 medium to large pallets.

2.0 System Summary

Intelligent Setup Functions like the nozzle changing system shown above help reduce operator errors, improves consistency of operation and lowers operator dependency.



Ball screw system ensures highest levels of precision and accuracy.

SUPER TURBO X

SUPER TURBO X series machines deliver intelligent performance for maximum productivity.

The Super Turbo X series has been developed thanks to the great experience of our company in the machinery business, STX merges the capabilities of laser technology with the productivity of automation systems.

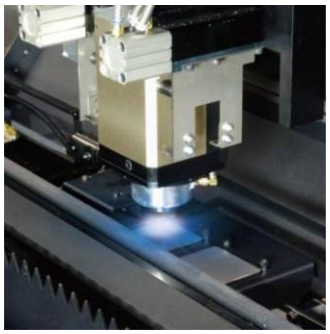
Super Turbo X is capable of cutting a wide range of materials and thicknesses automatically with lower consumption and reduced operating costs.

The mono block concept, reduced vibrations dramatically and allows quick installation time in an extremely small footprint. Laser source and the cutting head, housed in a symmetrical manner with respect to the machine body, compensate thermal effects while maintaining the precise beam alignment during processing.

Accuracy is ensured by a very rigid mechanical system driven by ball screws that translate and linear guides. This ensures the best cutting performance at the highest positioning accuracy of +/- 0.01mm and repeatability of +/- 0.005 mm.

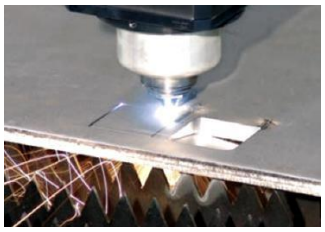
- The Setup and Monitoring Functions deliver superior performance; it incorporates Intelligent PFP Torch and Nozzle Changer technology to directly increase the productivity.
- The SUPER TURBO X has been engineered to be utilized with Mazak's extensive range of automated material handling systems.
- The new cutting-edge Preview 3 control with 15" touch screen includes integrated tech tables that simplify operation.
- SUPER TURBO X is available in 2.5kW and 4.0kW Laser resonator configurations.

3.0 Intelligent Functions



Auto Focus Positioning eliminates the need to have the operator measure, adjust, and set the focal distance by automating the process.

Pierce Detection senses when the pierce breaks through the material as compared to a programmed pierce that would include added time to account for variations in the process.



Plasma Detection monitors plasma generation while cutting medium/thick stainless steel and automatically adjusts cut conditions to help avoid quality issues and cut failure.

INTELLIGENT FUNCTIONS IMPROVE EASE OF OPERATION & MACHINE EFFICIENCY

Mazak has developed a series of Intelligent Functions designed to automate machine setup and monitor the cutting performance. These Functions can dramatically simplify operations and automatically adjust cutting parameters to increase the quality of parts and overall throughput.

Intelligent Setup Functions

A wide variety of Functions are available for ease of operation and reduced setup time.

	Auto Nozzle Changing. Optimizes assist gas usage and maximizes the feedrate for each job (4 nozzles)
	Auto Focus Positioning. Maximizes part quality and produces maximum feedrate
	Focus Detection. Automatically calibrates reference position
	Auto Profiler Calibration. Keeps a stable distance between material and nozzle during cutting operation
	Auto Nozzle Cleaning. Increases the time between necessary operator intervention

Intelligent Monitoring Functions

SUPER TURBO X is equipped with sensors in the PFP Torch that monitor piercing and cutting operations to improve throughput and part quality. If an anomaly is detected, the operation is adjusted or paused to automatically achieve effective cutting conditions.

	Pierce Detection. Minimizes pierce times for greater throughput
	Plasma Detection. Monitors and helps stabilize stainless steel cutting, reducing dross
	Burn Detection. Monitors cutting and notifies you of bad cut conditions in mild steel

3.0 Intelligent Functions continued

Intelligent Cutting Functions

Automatic functions incorporating Mazak's expertise accumulated over many years that ensure high quality and high efficiency laser cutting. The SUPER TURBO X series is equipped with the following INTELLIGENT CUTTING FUNCTIONS:

	**Sharp Cut.** Controls the starting and ending conditions in order to ensure that the corner is cut properly.

4.0 Standard Features

Cast iron frame for high stability in machining process.

The Preview 3 Control is Mazak's newest design created to simplify operation and enable cutting-edge performance from your new machine.

Mazak's unique laser beam delivery system "SUPERCHARGE" eliminates divergence

MACHINE FRAME

The SUPER TURBO X laser machine frame starts with a solid cast iron precision-machined base for accuracy, system repeatability and durability. The cast iron base supports the motion drive system, electrical systems, CNC and enclosure with an automatic open/close protecting cover. Ergonomically designed with sliding access cover along the X-axis, the work zone is easily accessible. The solid cast design does not require the main machine frame to be secured to the facility foundation.

MOTION SYSTEM

The motion drive system utilizes high precision ball screws for X and Y axis, Z axis is a digital servo drive system. The rigid gantry design and high precision linear guides on X and Y axis, ensures the best cutting performance at the highest accuracy.

CONTROL UNIT

The SUPER TURBO X features the cutting-edge MAZATROL PREVIEW 3 Control Unit that utilizes a 15 inch touch screen which reduces the number of hard buttons. The Mazak PREVIEW 3 interface displays in both 2D & 3D Color graphics for process monitoring. The touch screen monitor allows for fast and easy access to all Intelligent Monitoring Functions and Intelligent Setup Functions. The ergonomic design allows for adjustable height and rotation.

LASER RESONATOR AND OPTIC DELIVERY SYSTEM

The fast axial flow CO2 laser source utilized in the TURBO SUPER -X generates a beam with TEM 00 mode characteristic of a beam which has a transverse spatial intensity profile that reproduces the curve of a Gaussian distribution and that can be focused by a lens a focal spot having the smallest diameter, thus giving rise, for a given power, the higher energy density.

The possibility of operating in the pulsed mode allows the breakthrough of considerable thickness in a reduced time and materials a much more precise cutting of any other laser cutting system operating only in a continuous mode.

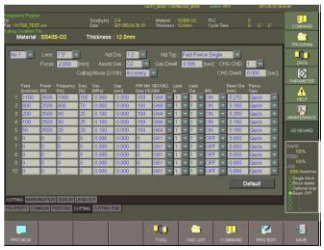
At the exit of the laser source, the beam is sent with circular polarization directly to the focusing head by means of a constant optical path, integral with the head, considerable as real fixed optics.

Laser resonator, with its continuous emission system, adding to the laser beam transport technology "SUPERCHARGE", is able to minimize the divergence. Eliminating manual intervention due to variation of energy concentration on the material being processed.

4.0 Standard Features continued

Mazak's exclusive PFP Torch is the key feature that enables a host of automated Intelligent Functions.

The OPTIPOD houses the automatic nozzle changer and other features utilized for Intelligent Setup Functions.



Integrated cutting technology is resident on the Preview 3 Control and provides cutting parameters that help streamline machine operation.

MAZAK PFP TORCH

Mazak's exclusive PFP Torch was a key development that enables Mazak's Intelligent Setup and Intelligent Monitoring Functions. They directly increase the productivity of the end user by allowing the machine to optimize the torch setup automatically per program. This optimization can dramatically improve cut speeds, increase throughput and requires less operator intervention, delivering more predictable processing day after day. The combination of $C0_2$ beam diameter and focus control provides a wide range of improved cut performance in all material types and thicknesses. The automatic nozzle changer facilitates unattended operation while ensuring the proper cut quality and maintaining the lowest possible gas consumption.

OPTIPOD

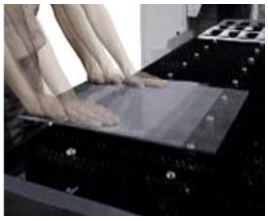
The OPTIPOD incorporates components utilized for the Intelligent Setup Functions including Auto Nozzle Changing, Auto Focus Position, Focus Detection, Auto Profiler Calibration and Auto Nozzle Cleaning.

INTEGRATED CUTTING TECHNOLOGY

A cutting technology chart is inside the CNC to simplify the selection of cut parameters. You just input material and thickness, and you automatically get the best cutting condition such as laser power, frequency, gas pressure etc. Difficult piercing techniques or trace calibration ON/OFF is also automatically set.

4.0 Standard Features continued

Automatic scrap conveyor



Work piece lifters help position material without damaging the bottom surface

CHILLER

All necessary chilling equipment is included as parts of the standard package. Necessary hoses are included in standard length of 6 meters.

POWERED CONVEYOR SYSTEM

SUPER TURBO X comes standard with automatic scrap conveyor system that provides removal of scrap material or small parts.

WORK PIECE LIFTERS (BALL TRANSFERS)

Ball transfers are installed into the work surface to assist in positioning the material and to reduce scratches to the bottom of worksheets. The worksheet lifts by 10 mm by stepping on the foot switch. This feature is required when installing into EMC, CMC and OPTOPATH 7200 automation systems.

4.0 Standard Features continued

A set of 3 machining nozzles are included with your machine purchase.

Slat table shown with 2 manual worksheet clamps.

An Operator Manual is provided on CD with your SUPER TURBO X purchase.

ADDITIONAL STANDARD FEATURES

- **Machining nozzle (φ1.2 [0.047], φ2.0 [0.079], and φ3.0 [0.118] (mm [in]) 1 for each)**
- **Nozzle adapters 3 (Universal can be used with all nozzle diameters)**
- **Work piece Laser Edge Detection & coordinate rotational function**
- **USB port for personal computer**
- **LAN connection function for external communications**
- **Automatic power cutoff**
- **Assist gas pressure NC function (set pressure: 0.02 to 2.5 MPa)**
- **Assist gas changer**
- **Side air blast**
- **Power transformer for step-up**
- **Slat table (100 mm [1.97 in] pitch)**
- **Manual worksheet clamp (2 pieces × 2 pallets)**
- **Foundation materials**
- **Adjusting tools**
- **Relocation detector**
- **Lighting unit**
- **Oscillator indicator lamps**
- **Manuals on Compact Disc (CD)**
- **MAZAK Standard Color Frost White & Silky Black**

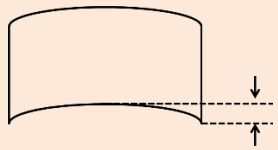
5.0 Machine Specifications

SUPER TURBO X MACHINE SPECIFICATIONS

Feature		Specifications		
		2412	3015	4020
Axis processing movement		Hybrid type		
Maximum Work Piece Size X-Y		1250 mm x 2500 mm	1525 mm x 3050 mm	2000 mm x 4000 mm
Work table height		900 mm		
Maximum work piece weight per pallet		630 kg	930 kg	1600 kg
Material thickness * for mild steel	2.5 kW	0.8 - 19 mm		
	4.0 kW	0.8 - 22 mm		
Axis Travel X-Y		2520 mm x 1270 mm	3070 mm x 1545 mm	4020 mm x 2020 mm
Axis Travel Z		90 mm		
Rapid traverse rate X-Y		50 m/min		36 m/min
Rapid traverse rate Z		25 m/min		
Axis Drive System		AC servo motor X-, Y-axis: digital servo drive and ball screws Z-axis: digital servo drive and belts		
Positional accuracy X-Y		+/- 0.01 / 500 mm		
Positional accuracy Z		+/- 0.01 / 100 mm		
Repeatability X-Y-Z		+/- 0,005 mm		
Cutting Head		With lens of focal distance: 7.5"		
Z Axis Profiler		Non-contact type/Z-axis follow up		
Worksheet support method		Knife edges (50 mm)		
N. of worksheet clamps		4		5
Lighting System		LED for cutting portion		
Operation Status Indicator Lights		Yellow signal lamp (laser high voltage ON) Red signal lamp (shutter open)		
Assist gas changer		Number of gas types: 3 Supply pressure: Oxygen, air 0.8 MPa - Assist gas Max. 3.0 MPa		
Assist gas pressure NC function		Programming can set assist gas pressure		

	Set pressure: Oxygen, air 0.05 - 0.6 MPa - Assist gas 0.02 - 3.0 MPa
Noise Level Laser	Maximum 80 dBA

Safety Interlock System	Protects the operator from spatters and reflected laser beams - Class 1		
Machine Base	Precision machined single cast iron base		
System Weight **(Main enclosure-pallet shuttle-chiller)**	11000 kg	12700 kg	20700 kg

	Material Specifications
Camber	 3 mm
Angle	 6 mm
Flatness	2 mm

6.0 Laser Resonator Specifications

SUPER TURBO X LASER RESONATOR SPECIFICATIONS

Items	Specifications		Remarks
	2.5 Kw	4.0 kW	
Laser type	CO_2 gas laser		Far-infrared ray
Wave length	10.6 µm		Invisible Ray
Oscillation mode, configuration	High-speed axial flow type of the DC discharge excitation scheme Integrated oscillator and power unit type		
Continuous rated output	2500 W	4000 W	CW output
Output range	125 to 2500 W	200 to 4000 W	CW output
Pulse mode	Normal pulse (NP)		The pulse peak value differs from a continuous output peak value.
Pulse frequency Pulse duty	1 Hz to less than 1 kHz - 0 to 100% 1 kHz to 2 kHz - 20 to 100%		
Beam mode	Main component - TEM_{00}		
Output stability	±2.0%/8 h		For Rated Output
Laser gas	Mixed gas of He, N2, and CO_2		
Mixture rate of laser gases	N2 : CO_2 : He = 23.4% : 1.7% : 74.9%		74.9%" for He is a reference value. This value varies according to the fluctuation of N2 (±1.0%) and CO_2 (±0.2%).
Gas consumption amount	10 L/h (during continuous operation)	15 L/h (during continuous operation)	This becomes greater according to the frequency of starting/stopping (turning on/off) the laser machine.
Beam shutter	Built-in mechanical shutter		
Chiller System			
Reservoir	200 liters	270 liters	
Circuit cooled	Mirrors, Laser		
Material Processing Range			
Mild Steel	20 mm	25 mm	

Stainless Steel	10 mm	15 mm	
Aluminum	8 mm	12 mm	

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7.0 Control Specifications

SUPER TURBO X CONTROL SPECIFICATIONS

Feature	Specification
Name	MAZATROL PREVIEW 3
CPU	64 bit
Data Input	Touch Screen
Monitor	15" XGA Color TFT
Graphic Preview Display	3D Tool path
Memory Storage	16GB
Program Storage	1GB
Input ports	USB 2.0 x 3 Ports 1-USB memory connection 1-Keyboard connection 1- Mouse connection
Network Connection	LAN 1 Port (100/1000 BASE)
Controlled Axis Function	Simultaneous 4 axis control (X-, Y-, Z- and W-axes), Z- axis profiling control also possible
Minimum input command	0.001 mm
Servo System	Digital
Position System	Encoder
Control method	Semi-closed loop

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8.0 Optional Features

SUPER TURBO X can be equipped with an industry leading Dust Collector Unit.

DUST COLLECTOR UNIT

The dust collectors of the DFPRO series set a higher standard in comparison to conventional dust removal systems in terms of filtration efficiency and are ideal for laser cutting applications. It has improved the performance of the systems by rethinking the cartridge cross section from the conventional round to an oval shape. The oval-shaped filter cartridges provide a more efficient, compact and economical filtration. The DFPRO dust and fume filters are available in various sizes with three to 16 filter cartridges and flow rates from 2,000 up to 6,000 m3/h depending on laser machine model.

SUPER HIGH PRESSURE 4TH GAS PIPING

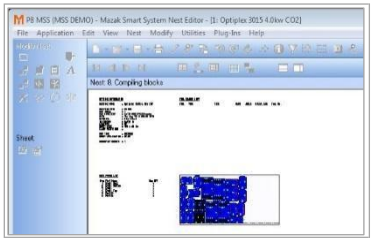
A 4th High Pressure piping system with 3.0 MPa capacity is optionally available for additional assist gas to be used on piercing and cutting heavier thicknesses. The 1st port is designated Oxygen only and is equipped with the necessary flash arrestors. The 2nd port is designated strictly for Compressed Air for use with the pneumatics as well as assist gas supply. The 3rd port is designed for an Inert Type Assist Gas of the customer's choice. The 4th port is designed for an Inert Type Assist Gas of the customer's choice.

The Automation Preparation option includes electrical and mechanical components needed to connect your machine to a Mazak automation system

AUTOMATION PREPARATION

Automation Preparation is required for every laser machine's preparation to integrate into EMC and OPTOPATH 7200 automation systems. Electrical devices and wiring are prepared inside the laser machine's control cabinet to enable digital input and output signal transfer to and from the automation system. Mechanical clamps that automatically rotate under air pressure are fitted instead of the manually operated clamps. Sheet sensors are installed on the laser work surface to detect proper loading and positioning of the sheet onto the laser work surface. The proper sheet positioning on the laser work surface is then communicated back to the automatic handling device to continue the cycle.

8.0 Optional Features Continued



Mazak Smart System delivers superior performance for programming your SUPER TURBO X

MAZAK SMART SYSTEM JUNIOR PROGRAMMING SOFTWARE

Mazak Smart System is a PC based CAD/CAM system that enables the user to eliminate numerous, traditional, non-productive steps in sheet metal processing and go to actual production quicker than ever before. This software provides interactive nesting capabilities as well as 2D IGES, DXF and DWG drawing import capability. Automatic profile verification and repair function. Optimized cutting sequence calculation and automatic tool path and cut strategy application are just some of the powerful utilities built into the system. Windows 7, Windows 8 & Windows 10 for operating system - 64 Bit.

MAZAK SMART SYSTEM PLUS PROGRAMMING SOFTWARE

Mazak Smart System Plus combines the technology features of Smart System for Laser with the ability for future expansion to support additional applications such as CNC controlled bending or punching.

Other optional features such as floating license, IRP integration as well as many other enhancements are possible with the Smart System Plus platform. Pricing available on request.

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Linear Systems deliver all of the modularity and flexibility of vertical systems, but enable inclusion of multiple machines within a single system.

Contact your Mazak representative for a detailed automated material handling proposal engineered to meet your specific needs.

AUTOMATED MATERIAL HANDLING SYSTEMS

The benefits that result from a company implementing laser automation are profound. A typical standalone laser is utilized only a fraction of the usable workweek. It sits idle while waiting for setup or material, as well as during lunch breaks and off hours. Owners who track actual laser cut time are almost always shocked to see the reality of the underutilization of such a major asset.

Automation systems provide the ability to flex capacity through lights-out operation, without the burden of adding manpower. It also makes one-piece flow more practical, while producing short-run efficiencies that will reduce non value-added fabricating time. The bottom line is typically up to a 50% increase in capacity as compared to standalone machines and a significant reduction in lead times.

Mazak was the first manufacturer to introduce laser cutting machines into a Flexible Manufacturing System. Today we offer the following systems:

- Compact load/unload
- Vertical flexible manufacturing
- Automated part sorting
- Automated storage/retrieval

MT CONNECT

MT Connect is an open-source, royalty-free manufacturing protocol that easily connects devices and systems from different suppliers to capture and share information in a common format, such as XML. When serving as a complete communications standard, this "plug-and-play" networking platform assists factories in calculating overall equipment efficiency, monitoring all equipment from one system, reducing production losses and identifying lean manufacturing strategies. By establishing an open and extensible channel of communication for plug-and-play interconnectivity between devices, equipment and systems, MT Connect allows sources to exchange and understand each other's data. *See the Intelligent Factory option for automated graphical reports including dashboards.*

8.0 Optional Features Continued

MAZAK iSMART FACTORY OPTIONS

Mazak iSMART Factory enables you to visualize the performance of cells, departments and overall plants as compared to historical or target performance. These insights are the real-time tools that can enable fabricators to manage the process rather than reacting to historical reporting.

Mazak iSMART Factory

Contact your Mazak representative for a proposal to implement the benefits of Mazak iSMART Factory.

- Managers can see the productivity and increased profitability as it happens in real-time
- Productivity problems can be identified fast - accelerating resolution
- Plant-wide productivity increases in the range of 10% to 50%
- Dashboard metrics can be available for everyone on the shop floor to see

Mazak iSMART Factory is an industrial internet platform solution for manufacturing including hardware and software machine monitoring solutions that connects directly to manufacturing equipment. It is designed to monitor every machine in your shop, CNC machines, non-CNC machines, fabrication centers and manual processes, all tied together in a production process manufacturing execution system.

9.0 MACHINE OPTIONS AND PRICES

Model

4000W	SUPER TURBO-X with resonator CO2 4.0kW

Equipment

PLLO007	Dust collector
FS130	FMS preparation (pneumatic clamps)

Additional options

CI002	Transport
CI003	Installation and training

Price : € 35,000 EUR

Machine History and Reference Photos:

Year of Manufacture: 2014

Condition: dobry (używana)

Operating Hours: approx. 22 000 – the machine is in continuous operation

Functionality: Fully functional

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MAZATROL PREVIEW 3
PUSH