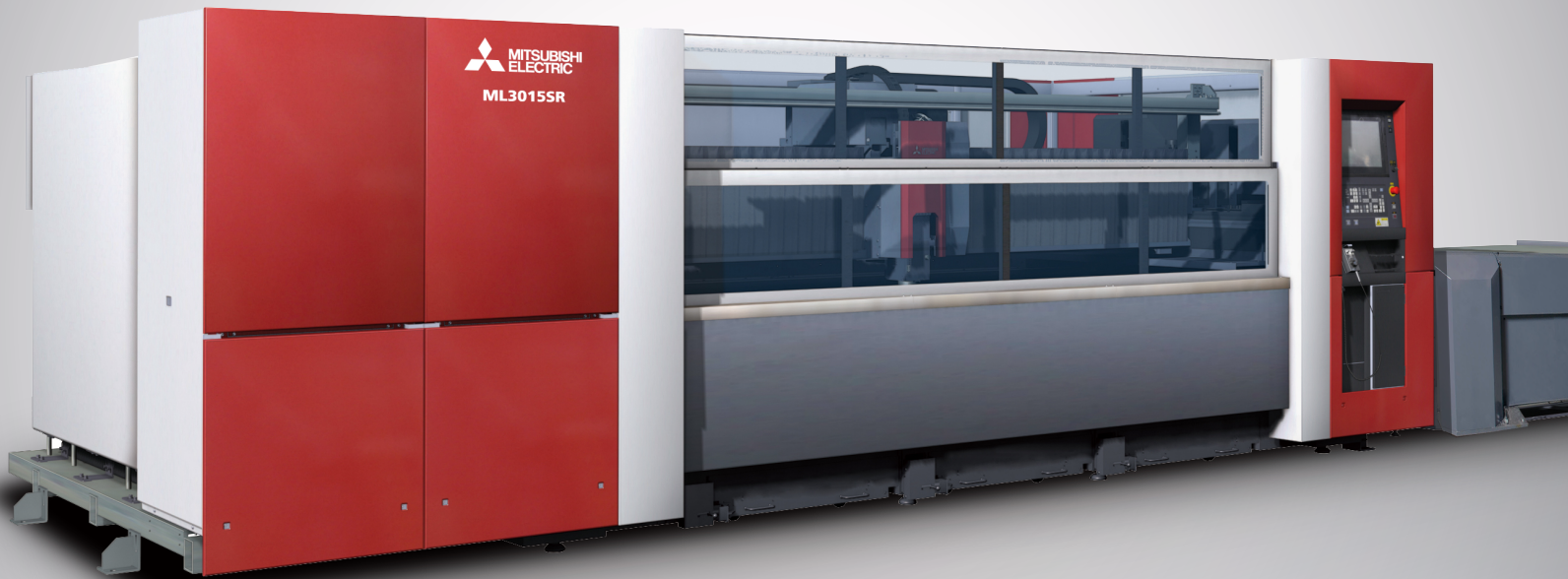


SR Series

The SR Series CO² Laser



It's not where you are, it's where you're going.

SR Series

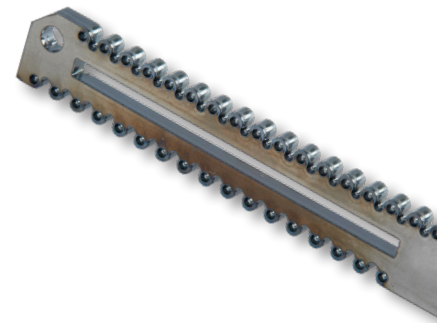
THE REVOLUTIONARY SR CO2 LASER OUR 6TH GENERATION HIGH SPEED FLYING OPTIC CO₂ LASER

The SR is a second generation entry level machine. Like its predecessor, the eX-S, the SR is designed to meet the needs of most demanding users in today's 24/7 competitive manufacturing environment. Faster movement, more powerful piercing, and an ECO mode that provides even more running cost savings to the most cost friendly machine in the market today.

CONTINUOUS IMPROVEMENT

At its core all Mitsubishi companies are working towards continuous improvement. It's our corporate mission and it is put to the test by our people, our services, and especially our products. Mitsubishi designs and manufactures every critical component that goes into every single Mitsubishi Laser System.

Every individual component is performance-matched to excel in the most demanding environments. Advanced CAE models were employed to develop the stable and accurate high-speed SR system design. The SR features Helical Rack and Pinion on the X and Y axes resulting in faster movement and a more quiet operation.



SR



UNIQUE FEATURES OF THE SR

- Higher Quality cutting and improved productivity over the previous model
- Improved resonator delivers a better beam which results in 40% speed gain in thick plate
- Up to 80% improvement in surface finish quality in Stainless Steel
- New Intuitive control improves user experience and will help increase productivity
- Gas change time is improved by 60% over previous model, approximately 10 minutes from start up time
- Helical Rack and Pinion reduce noise, and allow for an increase in acceleration in X and Y axes and provide increased accuracy and longer life
- Built in Jet Pierce provides the ability to aggressively pierce mild steel
- New Mitsubishi Control with Faster graphical interface, USB compatibility and expanded programming options
- ECO MODE available for increased energy savings
- The PH-XS Head has new lens cartridge design which allows for more constant centering and the focus lens will achieve better performance due to this design change
- Improved Diamond Path Technology for constant beam control and exceptional cutting performance
- M-Cut allows an operator to cut multiple shapes without the axes having to stop, providing industry leading speed with less power input and greater cost efficiency per part
- Double-Cut : Allows high quality cutting of poor surface quality material and film protected sheet metal, which often causes cutting defects, in two passes
- Offcut Function can easily split a sheet that is not fully used, dedicated screen for ease of use
- You can upgrade your SR with new available options including
 - Nozzle Changer
 - Clean Piercing
 - Rotary Axis

remote360[®]

At MC Machinery Systems our number one goal is customer satisfaction. We have invested greatly in our infrastructure to better serve our customer base with a state of the art call center, regional service and support, and millions of dollars of parts inventory. MC Remote 360, our robust production monitoring and support solution, is geared to provide transparency to your laser cutting process. Remote360 provides real-time data to help increase productivity, improve efficiency, and reduce down time for your Remote360 enabled machine.

Remote360 provides

- End-user machine monitoring through a web enabled device
- MMS Remote Diagnostics & Fault Monitoring
- MMS Remote Support



Analyze



Monitor



Produce

Mitsubishi 700 Series Control

TAKE CONTROL OF YOUR CUTTING

Competing manufacturers' PC-based controls can't touch the sophistication of the Mitsubishi 700 Series CNC controls. Mitsubishi has utilized its vast experience developing the most sophisticated and accurate controls for laser machines and implemented new nanotechnology for finer, faster interpolation with greater power. Our CNC controls include a 15-inch touch screen, 64-bit Windows, ethernet for input/output and a USB port for further flexibility.

700 SERIES CNC ALSO FEATURES:

- Dedicated nano-control for highest precision machining
- Newest RISC-CPU and high-performance ASIC
- Improved and accelerated graphics with superior NC design simplify operations
- Network function adaptable for diverse factory environments
- USB Compatible
- Sheet detection
- LAN-Ethernet connectivity
- Decreased graphic time
- Increased cutting condition database
- Improved help diagnostic functions
- Micro-joint function
- 30 GB Hard Drive
- Optional: 2 Action Cutting provides automatic setup and easy operator interface
 - Step 1 - use optional barcode reader and automatically load onto NC from CAD/CAM computer
 - Step 2 - once data is loaded, head moves to start position, automatically measures the tilt, the size and the edge of the workpiece, and starts cutting
- New Reset - Restart Function
- Simple Nesting - rectangular nesting of dissimilar parts at control
- Advanced help and maintenance screens are a great aid for operators
- ECO Mode is available and can reduce your running cost by 99% while in standby
- ECO Cut is available and can reduce your nitrogen assist gas usage by 30%
- M-Cut shortens processing time in thin materials by turning the beam on/off while in motion

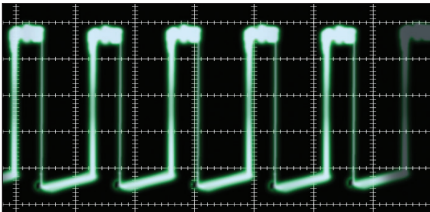


Handle Box and Optional Bar Code Reader combine for a more user-friendly experience

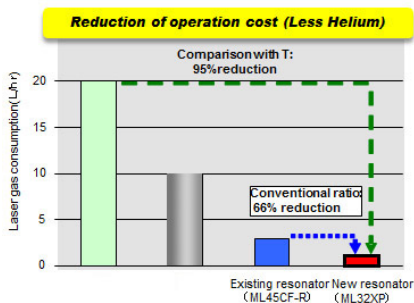
Resonators

Lowest cost of ownership

Mitsubishi resonators are so reliable and efficient that they've never needed to be replaced – eliminating a potentially expensive repair. The innovative Cross-Flow design consumes up to 90% less gas than traditional fast-flow systems, giving our resonators the lowest cost of ownership on the market.



Laser gas consumption



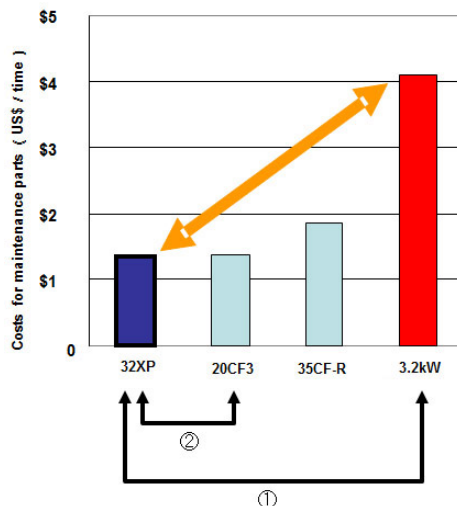
MITSUBISHI'S PATENTED RESONATORS

- Revolutionary Cross-Flow design maximizes beam quality and stability
- DiamondClean™ Technology provides ultra-clean resonator materials that yield higher performance and greater stability
- Lower gas costs – consumes up to 90% less gas than traditional fast-flow systems
- Extended maintenance intervals means less maintenance
- Improved power supply provides high efficiency, stability, reliability, and lower maintenance
- Fast startup
- Designed and manufactured exclusively by Mitsubishi
- 2.7kW resonators available
- Enhanced rectangular wave pulse
- No chemical additives for chiller
- 1L of Lasergas per hour

NEW COMPACT HIGH POWER RESONATOR

The resonator incorporates all of the newest cost saving technology Mitsubishi is known for.

The 32XP provides stable beam quality, allowing high-cutting performance.



Features of the new resonators

- New axial flow blower reduces the number of blowers (from 4 to 3).
- Mitsubishi original ceramic discharge electrodes and vacuum chamber reduce the number of maintenance parts.
- Clean technology improves lifetime of optical components.

1. The cost is approximately 1/3 of a comparable fast axial flow resonator. Savings you cannot ignore.
2. When compared to our previous resonator (20CF3), the cost remains the same even though the output power is 35% higher.

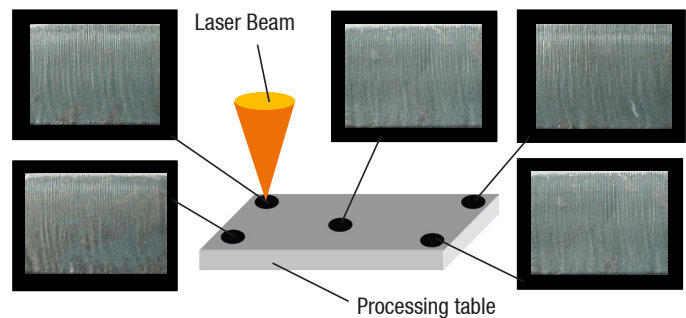
Head & Motion System

MITSUBISHI'S PATENTED DIAMOND PATH TECHNOLOGY

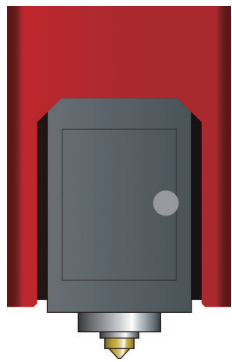
- Maintains a constant beam quality by fixing the system's beam path length regardless of processing head location
- Achieves superior cut edge quality and processing consistency over the entire work area
- Provides a stable cutting beam at high speeds across all processing areas at speeds of up to 1,970 in/min (50 m/min)
- Ensures consistent corner-to-corner cutting on any application

Diamond Path Advanced Beam Delivery System

Highly stable processing at every point in the processing area

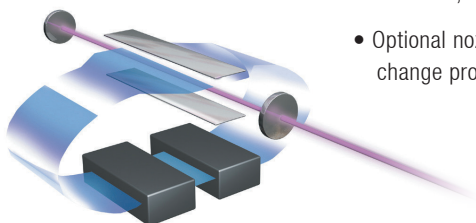


NEW MITSUBISHI PH-XS HEAD



The PH-XS Series Head

- The standard in processing head technology manufactured by and for MITSUBISHI LASER
- Accommodates 5.0", 7.5", and 10" focal lengths
- Cartridge recognition—the zero focus position is memorized—No need to focus between cartridge changes
- Faster lens movement speed
- Long focus stroke
- Centering is supplied on the cartridge instead of the head, allowing for easier nozzle centering
- Optional nozzle changer automates the nozzle change process for up to five nozzles simultaneously
- Auto focus preset head (standard)
- The focus adjustment uses a motorized lens system—when the cutting condition is searched, the lens is moved to focus position automatically
- Quick-change lens cartridge
- Built in Jet Pierce provides the ability to aggressively pierce mild steel
- Antiplasma Height Control ignores plasma generated while processing thin materials at high-speed—a constant gap is maintained
- Optional Magnetic Head requires no adjustment to reduce significant time after a crash



SMARTFLEX

AUTOMATION THAT KEEPS UP

ABANDON ONE-STEP-AT-A-TIME PROCESSES WITH AUTOMATED SOLUTIONS FROM MITSUBISHI

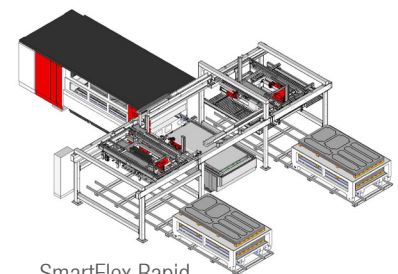
As the industrial laser industry evolves, shops of all sizes are requiring more speed and agility to get the job done. Mitsubishi's SmartFlex Automation Line is designed and engineered to increase productivity and reliability—because to stay on top, your automation needs to keep up. And with Mitsubishi, it will.

VERSATILE AND EXPANDABLE AUTOMATION

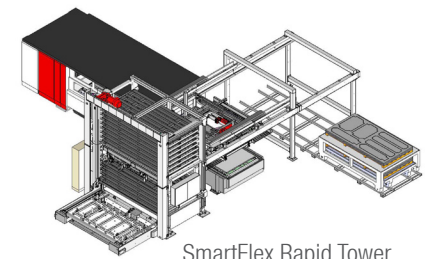
Virtually all SmartFlex Automation Systems are versatile and expandable. Mitsubishi offers several high-production options that can transform and adapt the SR-F System for maximum versatility and throughput. Current Mitsubishi users can add an SR-F to an existing automated system. That's the expandability of Mitsubishi.

SMARTFLEX RAPID

- 52-second load and unload cycle time
- Aerial positioning
- 22 gauge to 1.0" load/unload capacity
- Pair with High Capacity (11,000 lbs.) Carts or Tower (6,600 lbs. per shelf)
- Intelligent, High Speed, Independently Operating Load and Unload Units



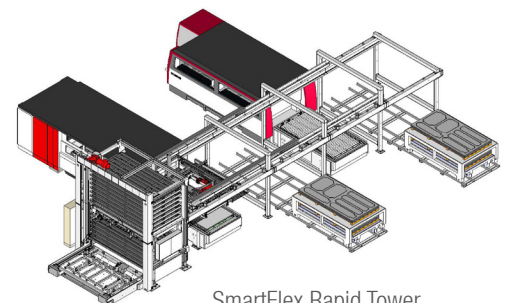
SmartFlex Rapid



SmartFlex Rapid Tower

SMARTFLEX RAPID TOWER

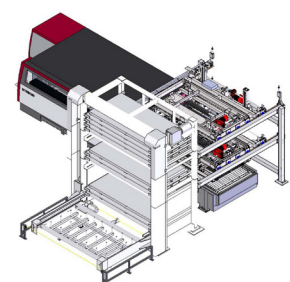
- Up to 22 shelves (more than 145,000 lbs. weight capacity for raw material)
- Increase storage capability with the addition of a second or third tower
- Configure an auxiliary load station for quick change-over of material types on multiple laser systems with no additional time
- Standard shelf spacing is 3.5" for use without skids or available at 7.5" for skid compatibility
- Offload to carts, SmartFlow conveyor, or a dedicated finished-goods tower



SmartFlex Rapid Tower
w/ 2 Lasers

SMARTFLEX COMPACT WAREHOUSE

- 75-second load and unload cycle time
- Flexible, expandable automation in a compact footprint
- Space-saving options
- Equipped for any shop, ideal for short-run jobs
- Modular and expandable system that grows with your shop
- Vacuum load systems with thickness detection and sheet-separator features



SmartFlex Compact Warehouse

Processing Machine Specifications

Model Name		3015 SR		
Machine structure		X/Y - Precision Rack & Pinion - Z=Precision Ball Screw		
Travel drive method		X-Y-Z simultaneous 3 axes (Z axis height control is also possible)		
Specifications and Performance	Max. workpiece size (inch)	120.1 x 60.0 (3050mm x 1525mm)		
	Table pass height	34.6 (879mm)		
	Processing access	Automatic Up/Down Door		
	Pallet changer	Provided		
	Stroke	X-axis stroke (inch)	122 (3,100 mm)	
		Y-axis stroke (inch)	61 (1,550 mm)	
		Z-axis stroke (inch)	5.9 (150 mm)	
	Speed	Rapid travel speed (X, Y) (inch / min)	3940 (100m/min) 5550 (141m/min) simultaneous	
		Max. processing feedrate (inch / min)	1970 (50m/min)	
	Precision	Positioning precision (inch)	0.0019/20 (0.05/ 500mm) (X, Y axis), 0.0039/4 (0.01/ 100mm) (Z axis)	
Drive motor type		Intelligent AC Servo		
Max. workpiece weight (lb)		1540 (700 kg)		
Machine unit dimensions (W x H x D) (inch)		404.5 x 93.7 x 123.1 (10,275 x 2,380 x 3,127 mm)		
Machine system weight (lb)		28090 (12740 kg)		
Machine power requirements		49 KVA 3Ø 208 VAC ±5% 60Hz 141 Full Load Amps		

Control System Specifications

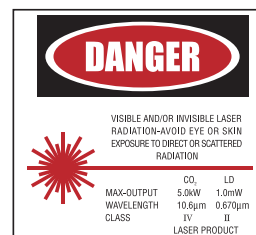
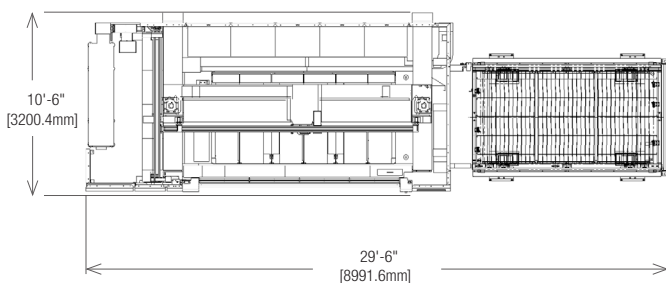
Type	Self-contained
CPU	64-bit
Display screen	15" TFT color LCD Touch screen
Hard disk	20.0GB
Generator output control	Output Power, Frequency, Duty
Generator operation control	Beam ON/OFF, laser gas change, etc.
Drive system	X, Y, Z simultaneous control
Position detection system	Encoder
Min. command input	.001mm / .0001"
Program input system	USB, Computer Link, Ethernet LAN

Pallet Changer Specifications

Type	P7
Drive mechanism	Chain
Pallet change time (sec)	Approx. 40
Work clamps	2 sets on Y axis
Pallet capacity (lb)	1540/pallet (700 kg)
Pallet changer weight (lb)	4500 (2,040 kg)
Applicable machine size	3015 (5' x 10') (1,525 x 3,050 mm)

CO₂ Laser Specifications

32XP			
Excitation method		3-axis cross flow, SD (silent discharge) excitation	
Ability	Laser Output	Frequency (Hz)	10~3,000 (Guaranteed range during power control: 100~3,000)
		Duty (%)	Settable range: 0~100
		Rated output (W)	2700
	Beam characteristics	Stability (%)	Below±1 during power control (compared to rated output)
		Settable power range (%)	0~100(Guaranteed range: 10~100, Rated output:100)
		Wavelength (µm)	10.6
Laser Gas	Beam mode	Low-order (TEM ₀₁ * Main component)	
	Beam diameter (mm)	Approx. ø21 (rated output)	
	Divergence angle (mrad)	Approx. 2.5 (total angle)	
	Composition	CO ₂ :CO:N ₂ :He=8.4:60:28	
	Consumption (L/hr) (standard)	Approx. 1	
	Gas sealing time (hr)	24	
Dimensions: (W x D x H) (in)		80.3 x 17.7 x 63.8	
Weight (lb)		Approx. 1,200	
Chiller Power Requirements		28 KVA 3Ø 208 VAC 15% 60Hz 82 Full Load Amps	



This product complies with CFR 1040. 10.
Data provided in this brochure is for reference only.

MC MACHINERY SYSTEMS, INC.

a subsidiary of Mitsubishi Corporation

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All machines in this brochure may be pictured with optional equipment.