

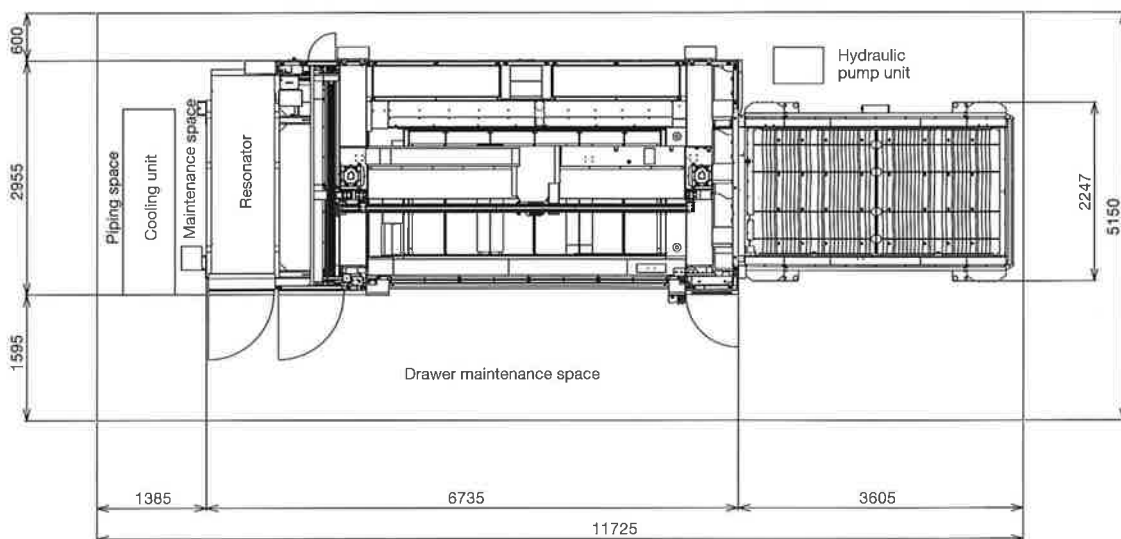


Changes for the Better

2D CO₂ LASER PROCESSING SYSTEMS
eX Series

eX Series





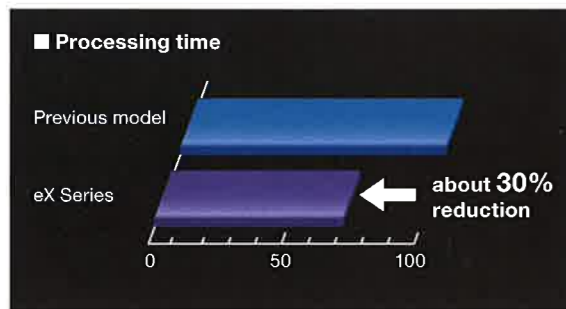
MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
<http://Global.MitsubishiElectric.com>

**Mitsubishi's cutting-edge technologies - Three "e's"
Takes laser processing to a whole new level**

eX Series

eXCELLENT

**High Stability, High Performance,
Laser Processing Machine**



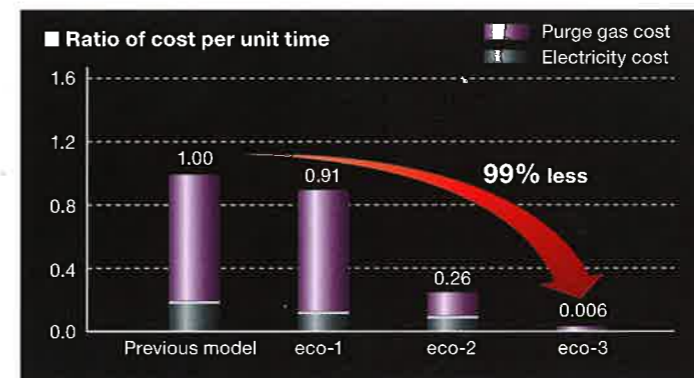
The latest piercing technologies have reduced processing time of thick mild steel and medium-thick plates by 30%.



Mitsubishi's unique state-of-the-art control technology and improved processing speeds reduce processing time of thin sheets by approximately 20%.

eCOLOGY

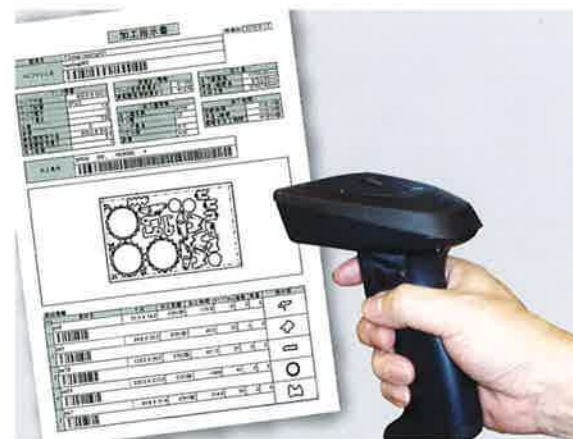
**Minimizing operating costs, with attention
to environmental protection and ecology**



Standby mode automatically shifts to Eco mode, and reduces standby cost by 99%. Mitsubishi's resonators emit 30% less CO₂ than competitors' high-speed axial flow lasers.

eASY TO USE

Simple and easy operation for beginners



Read barcodes



Press the start button to start the machine

**Single-source manufacturing,
provides optimum after-sales service**

Mitsubishi designs and manufactures every critical component of a Mitsubishi laser system, from the resonator to the cutting machine and controller. This ensures excellent after-sales service for users.

Mitsubishi laser processing machine eX Series

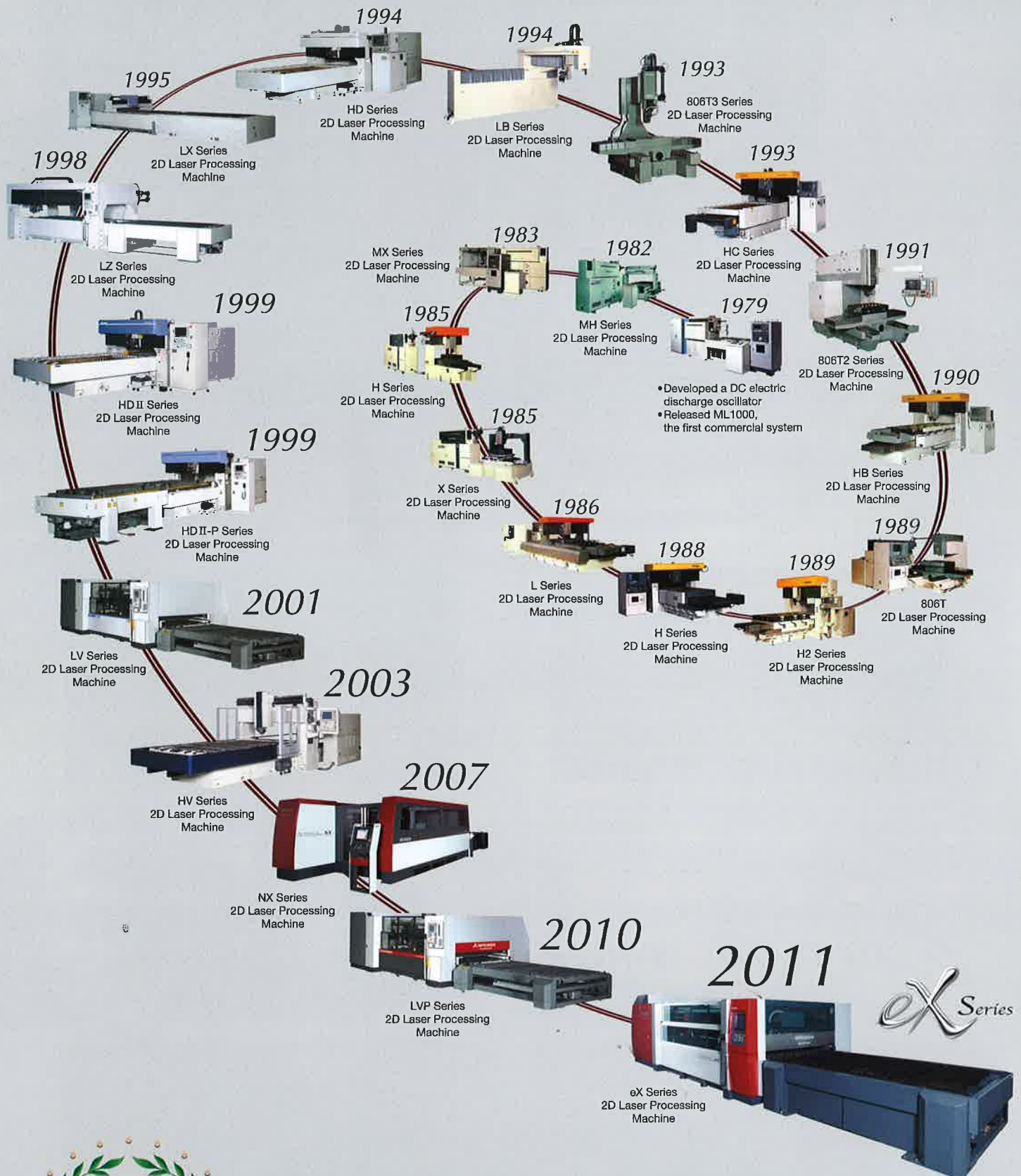


Mitsubishi CNC control



Mitsubishi laser resonator

History of Mitsubishi Lasers



Mitsubishi Electric has achieved cumulative sales of **more than 10,000** laser processing machines around the world



Thick stainless steel
• Machinery



Thin stainless steel
• Construction • Knife blade material



Medium thick mild steel
• Construction machine • Agricultural machine

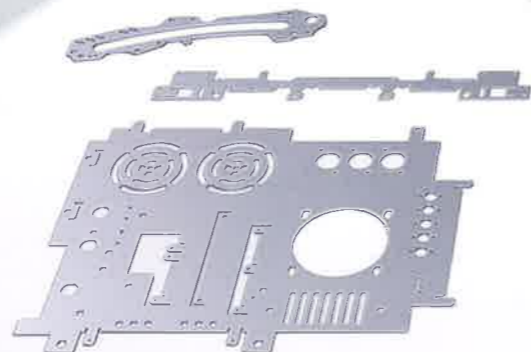


Medium thick stainless steel
• Power generation • Food machinery

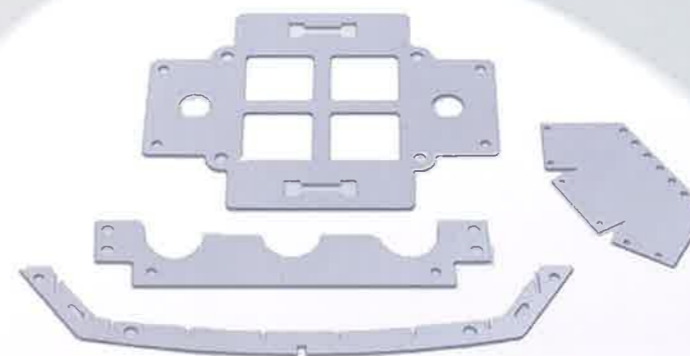


eX Series

Processing Performance



Thin mild steel
• Vehicle • Switchboard • Household appliance • Office equipment



Thin aluminum alloy
• Vehicle • Aircraft



Thick mild steel
• Machinery • Shipbuilding

■ Processing Capabilities

Resonator	Material	Assist gas	Thickness (mm)																
			2	4	6	8	10	12	14	16	18	20	22	24	26	28	30		
ML45CF-R	Mild steel (SS400)	Oxygen	*1																
	Stainless steel (SUS304)	Nitrogen	when using f190.5mm (7.5inch) lens *2 when using f254mm (10inch) lens																
	Aluminum alloy (A5052)	Standard air Nitrogen	when using f254mm (10inch) lens																
ML35CF-R	Mild steel (SS400)	Oxygen																	
	Stainless steel (SUS304)	Nitrogen																	
	Aluminum alloy (A5052)	Standard air Nitrogen																	

* The above are processing capabilities based on special conditions. Approved conditions are as stated in the specifications.
 * Even if the item to be processed is equivalent to a standardized product, variations in processing performance/quality may occur depending on the surface condition and components included.
 * Variations in processing performance/quality may occur depending on the processing shape.
 * The ability listed for mild steel (JIS SS400) plate thickness of 19mm and above is for use of LS materials (steel plate for laser cutting) manufactured by Chubu Steel Plate Co., Ltd.
 *1 Work lifter adaptable up to t19mm (3m x 1.5m). *2 Plasma cutting is used for plate thickness of 12mm and above.

■ Processing Machine Specifications

Items	Specifications	
	ML3015eX-45CF-R	ML3015eX-35CF-R
Model name	ML3015eX-45CF-R	ML3015eX-35CF-R
Drive systems	Flying Optics (X-axis, Y-axis beam movement)	
Stroke	X axis (mm)	3100
	Y axis (mm)	1550
	Z axis (mm)	150
Rapid travel speed (m/min)	140 (simultaneous)	
Max. processing feedrate (m/min)	50	
Positioning accuracy (mm)	0.05/500 (X, Y axis)	
Repeatability (mm)	±0.01 (X, Y axis)	
Resonator (W)	4500W	3500W
Beam mode	Low-order (main component TEM ₀₁ *)	
Power stability (%)	Less than ±1% of rated power	

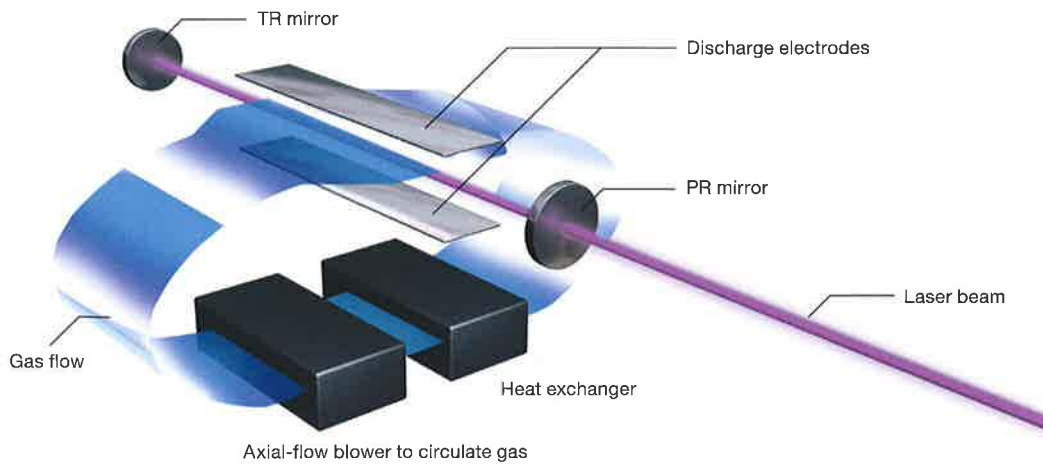
Eco Resonator 3-axis cross-flow SD gas excitation resonator

■ Mitsubishi original technologies supporting highly reliable processing

High reliability is synonymous with Mitsubishi Electric, born from its innovative technologies and attention to quality. Advancements in our resonator series have resulted in further improvements in processing performance.



SD (Silent Discharge)

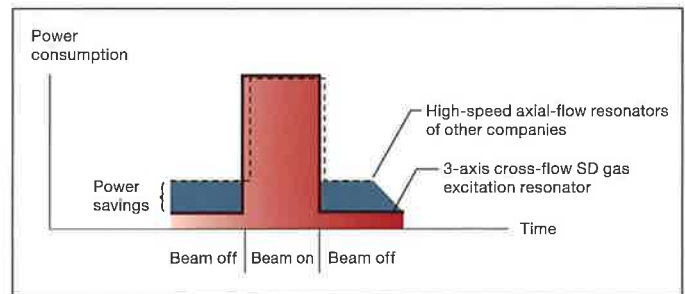


Just-on-time discharge

The just-on-time discharge system (which reduces power consumption during beam OFF and supplies power instantly during beam ON) substantially reduces the overall power consumption.

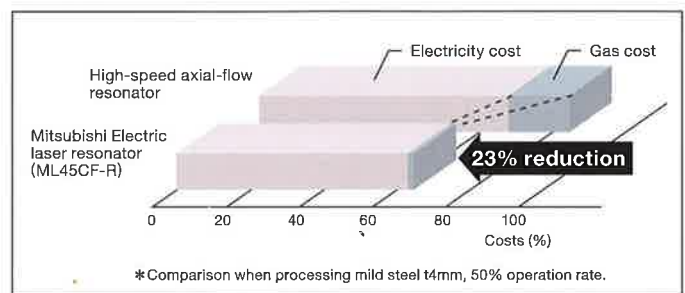
Power consumption of the entire system (including processing machine, resonator, cooling unit, and control unit) at 50% operation rate.

	Standby	3500W	4500W
ML45CF-R	15kW	—	42kW
ML35CF-R	15kW	36kW	—



Gas-sealed resonator

The gas-sealed resonator significantly reduces gas consumption. It consumes less than 3 bottles of laser gas a year (running 250 days/year). A single resonator charge of fresh gas enables continuous rated power operation for 24 hours without replenishment. This translates into major reductions in running costs, while dramatically eliminating bottle replacement work.



Adjustable power sensor

A high-speed power sensor developed by the company is installed as standard equipment to monitor laser output in real time. Output true to the desired setting is stably maintained, with the degree fluctuation being less than $\pm 1\%$. As a result, continuous processing of highly reflective materials such as aluminum and copper is possible.



Patent no. 1836228 Japanese published examined application 4-56479

