for a greener tomorrow

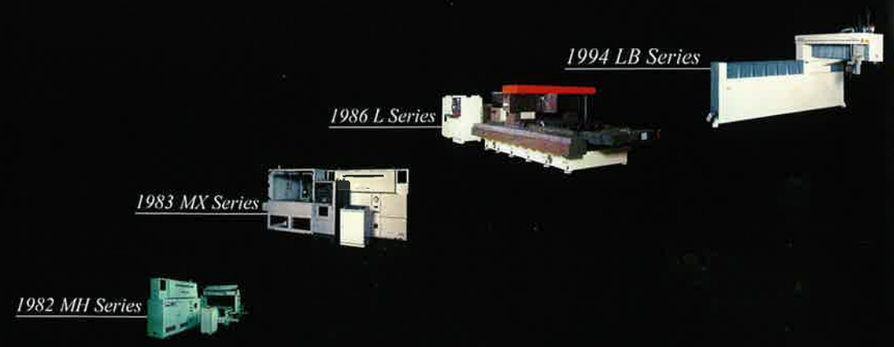
Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

New publication effective Oct. 2012.
Specifications are subject to change without notice.

MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow

CO_2 2-Dimensional Laser Processing Systems eX Series



The Revolutionary New eX series High Speed Flying Optic CO_2 Laser

eX Series

2-Dimensional Laser Processing Systems

Advanced Solution for Productivity and Environmental Requirements

The eX delivers maximum productivity and incorporates 2 Action Cutting which provides extremely simple operation. It also features an ECO mode that reduces power consumption during standby by up to 99%*. *In-house comparison

excellent [high performance]

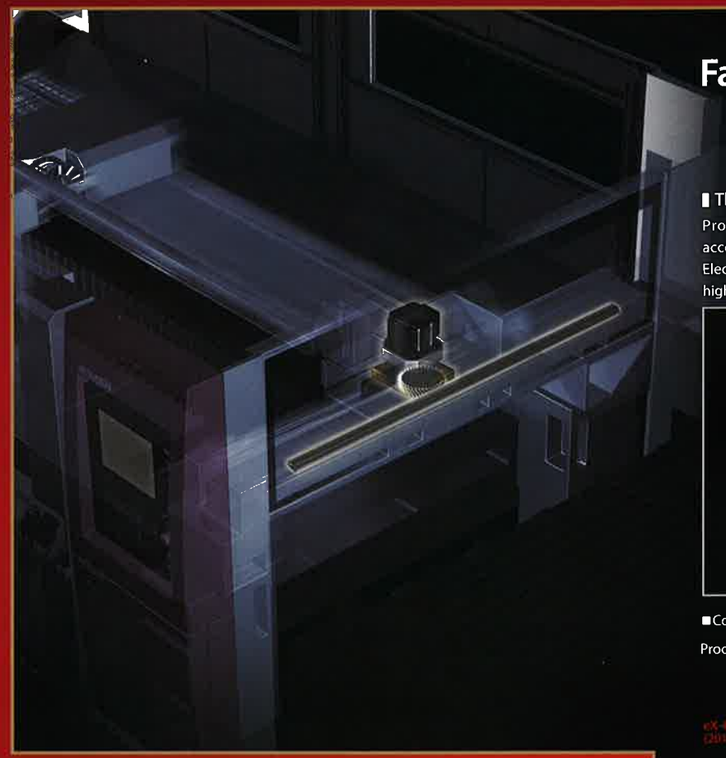
The faster processing speed and optimized control system of the eX Series reduces thin-plate processing time by approximately 20%*. The cutting-edge piercing technology allows for about a 30% reduction* in processing time of mid-thick and thick mild steel plates. *In-house comparison

ecology [energy-saving]

When not processing, the system switches to ECO mode and the resonator stops idling. Minimizes energy consumption, reducing running costs by up to 99%* during standby. Quickly resumes normal operation.
Mitsubishi Electric's original resonator reduces CO_2 emissions by approximately 30% compared to standard high-speed, axial-flow resonators.
*In-house comparison

easy to use [simple operation]

2 Action Cutting allows for the entire process, from job setup to parts cutting, to be completed in two simple actions. Delivers easy operation and stable performance. CAD/CAM computer, connected via network, is a great aid for operators on the shop floor.



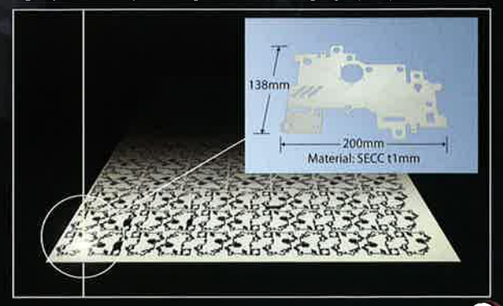
ecology
exe asy to use [high-performance]
excellent

Faster Moving Axes

Increased machine tool path-control technology compared to previous rigidity, Helical Rack and Pinion on the X and Y axes and optimized result in approximately 1.2 times faster movement and 2 times faster acceleration speeds model. The result is amazingly short processing times.

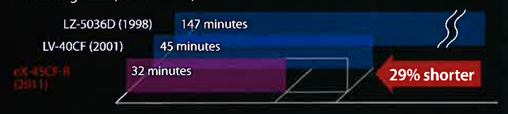
Thin-plate High-speed Cutting

Productivity has been dramatically enhanced owing to improved acceleration and the latest control technologies exclusive to Mitsubishi Electric. An example is Dross Reduction (DR) Control, which contributes to high-speed corner processing while maintaining high quality.

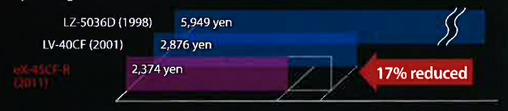


■Comparison when cutting 159 parts of the above sample

Processing time (SECC t1mm)



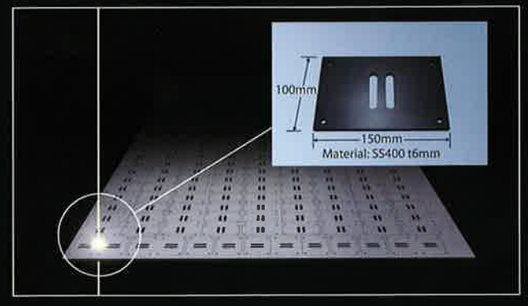
Operating cost (SECC t1 mm)



Mild-steel Cutting

Less time is required for piercing and changing conditions, resulting in substantially reduced operating cost and enhanced productivity when cutting medium and thick mild steel plates.

Mid-thick mild steel

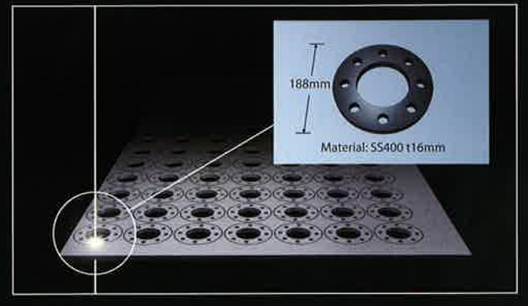


■Comparison when cutting 247 parts of the above sample

Processing time (SS400 t6mm)

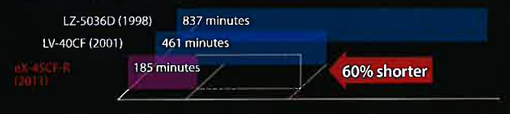
Operating cost (SS400 t6 mm)

Thick mild steel



■Comparison when cutting 105 parts of the above sample

Processing time (SS400 t16mm)



Operating cost (SS400 t16mm)

Calculation conditions

Electricity cost	Laser-gas cost	Assist-gas (N_2) cost	Assist-gas (O_2) cost
20 yen/kWh	8.94 yen/L	0.15 yen/L	0.13 yen/L

Technologies Supporting Thin-plate High-speed Cutting

Head retraction method

The optimum retraction method may be set according to the material and plate thickness. Minimize processing time and achieve better stability by selecting the best retraction method.

Normal retraction (LZ/LV/eX)

Diagonal retraction (LV/eX)

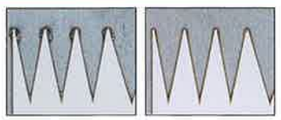
Arc retraction (eX)

Faster Z-axis

In addition to the latest control technologies, travel in the Z-axis is 3 times faster and has twice the acceleration speed (compared to previous model), enabling shorter processing times.

Dross Reduction (DR) Control

DR Control reduces dross adhesion at corners, realizing high-speed processing while maintaining high quality.



DR Control off　　DR Control on

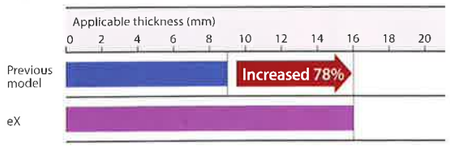
Outstanding Productivity for Thin & Thick Plates

High-speed Cutting Technology for Mid-thick Mild Steel Plates

Blow piercing

Produces smaller piercing holes faster in mild steel up to t16mm in thickness by controlling the oxidation reaction and optimizing beam quality.

Applicable thickness of blow piercing

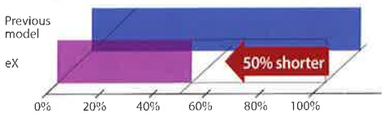


High-speed Cutting Technology for Thick Mild Steel Plates

Beat piercing

High-peak power control realizes the same level of quality as the previous slope piercing while reducing the piercing time of mild steel up to t25mm by a maximum of 50% compared to the previous model.

Piercing time



* Material / Thickness: Mild steel / t25mm　Piercing time on eX as compared to previous model which is taken as 100%

* Data in this catalog is for reference only, and may vary from actual values.

excellent exe cology

easy to use

[simple operation]

Simple 2-action Processing

Automatic setup realizes simple operation in two effortless actions.
This not only prevents operation and setup errors, but also contributes to enhanced productivity.

Easy to Use, Even for Beginners

Simple Nesting

Allows for rectangular nesting at the laser's NC control to meet urgent needs for additional parts.

New Reset – Restart Function

If the system resets in the middle of processing, it will easily restart cutting once the cause of stoppage is eliminated. Allows the operator to check and adjust the restart position quickly and easily on the control.

Red: Processing complete Green: Processed incomplete

E-Processing mode

A novice-friendly operating environment can be created by hiding the advanced settings screen.

Extremely Versatile - From Simple 2-Action Processing to Advanced Applications

Features Designed for Experienced Operators

Pro-Processing mode

The advanced settings screen can be displayed for advanced laser applications.

Double-cut function

Allows high quality cutting of poor quality material and protected sheet metal, which often causes cutting defects, in two runs.

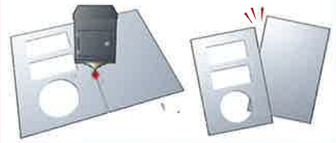
1st cut: Surface removal 2nd cut: Main processing

Sample using the double-cut feature

Offcut Cutting

Easily cut offcuts into several pieces by using the Offcut Cutting screen.

Offcut Cutting screen



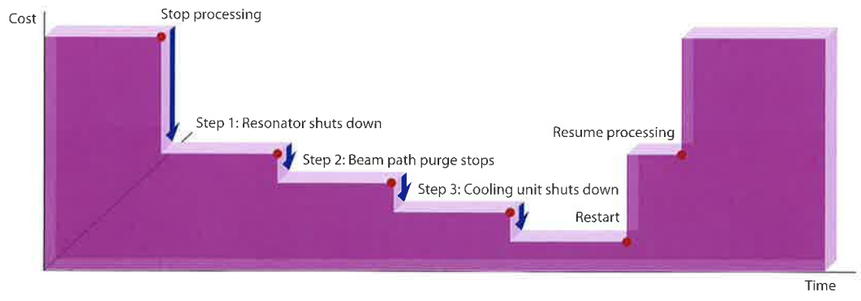
ECO mode available for increased energy savings

Costs during standby have been dramatically reduced by incorporating Mitsubishi's original just-on-time discharge method. ECO mode allows the processing machine to quickly resume operation.

Eco mode

After processing, equipments automatically shut down one by one.
Step 1: Resonator shuts down ▶ Step 2: Beam path purge stops ▶ Step 3: Cooling unit shuts down
This process reduces costs during standby by up to 99%.
Processing machine will resume processing in 1 to 3 minutes* after pressing the LASER key.

* Time required for equipments to resume operation varies depending on the equipment and the conditions of use.



easy to use
xcellent [energy-saving]
ecology

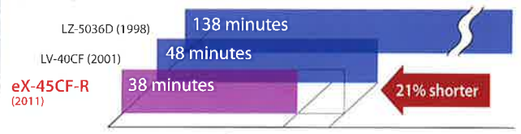
Energy-saving/Low Operating Cost

Reduced assist gas usage (ECO conditions)

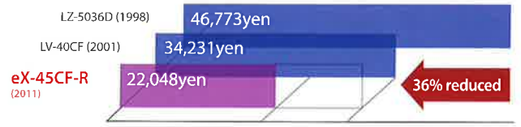
A technology that optimally controls assist-gas conditions has realized a large reduction in the consumption of nitrogen gas.

■Comparison when cutting 45 parts of the sample on left

Processing time (SUS304 t12mm)



Operating cost (SUS304 t12mm)



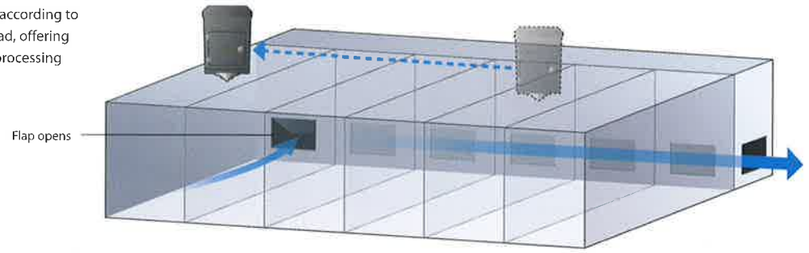
■Calculation conditions

Material	SUS304
Thickness	t12mm
Electricity cost	20 yen/kWh
Laser-gas cost	8.94 yen/L
Assist-gas cost	0.15 yen/L

Work Environment

Partitioned dust-collection function

An automatic flap opens and closes according to the movement of the processing head, offering on-the-spot dust collection during processing



Ease of Maintenance

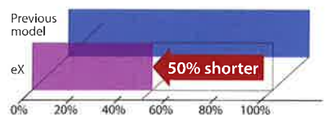
Self-check

Monitors the main components on a regular basis and displays results on the screen. Supports continuous operation and preventive maintenance.

Laser-gas change

Gas change time is improved by 50% over previous model.

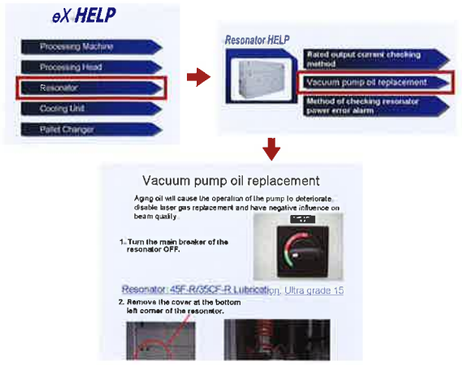
Gas change time



Help screen

Step-by-step instructions are given with pictures and illustrations to help operators perform important tasks for each component.

E.g.: Vacuum pump oil change

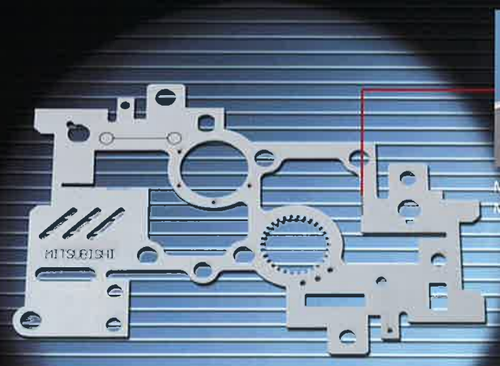


Lower Operating and Maintenance Costs

Cutting performance

Greater Flexibility Increases Cutting Capabilities

Thin plate

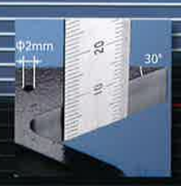


Material / Thickness: SECC / t1mm
Model: eX-45CF-R

Material / Thickness: SS400 / t6mm
Model: eX-45CF-R

Mid-thick plate

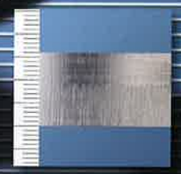
Material / Thickness: SUS304 / t9mm
Model: eX-45CF-R



Material / Thickness: SS400 / t9mm
Model: eX-45CF-R

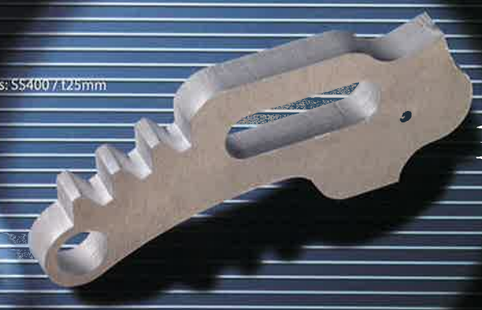
Material / Thickness: SUS304 / t25mm
Model: eX-60XF

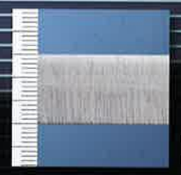
Thick plate



Material / Thickness: SUS304 / t16mm
Model: eX-60XF
Brilliantcut

Material / Thickness: SS400 / t25mm
Model: eX-45CF-R





Material / Thickness: A5052 / t15mm
Model: eX-60XF

* The above are processing capabilities based on special conditions. The acceptance criteria are as stated in the specifications.
* The actual performance/quality may vary depending on the surface condition and deviation in the material composition even if materials are of the same specifications.
* Variations in processing performance/quality may occur depending on the part geometry.
* Regarding mild steel (SS400), capacities listed in this catalog are based on LS material (steel plate for laser cutting) of Chubu Steel Plate Co., Ltd.
* Optional features may have been used in the above cut samples.

Machine

High-speed, High-stability Processing Machine

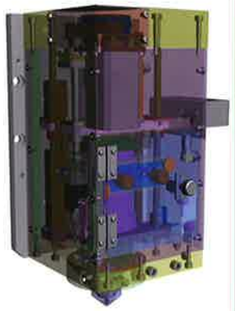
Key Technologies Ensuring High Stability and High Productivity

Mitsubishi Electric's cutting-edge technologies provide ultimate stability to ensure non-stop operation, realizing higher productivity and ease of maintenance.

Auto Focus Preset Head

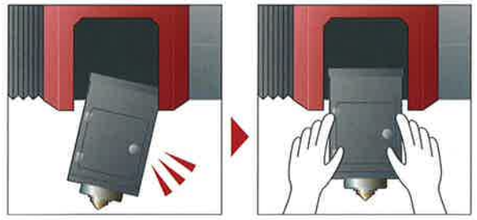
Automatically controls the focus according to the given NC command. Lens movement is five times faster*, realizing reduced piercing and processing times.

* Compared to previous model.



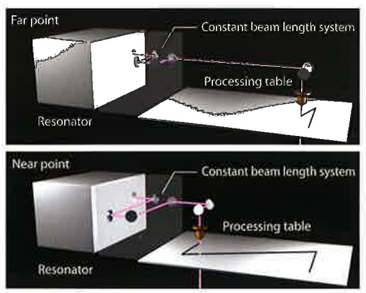
Magnetic Damage Reduction Mechanism

Incorporates a magnetic part to hold the processing head in position which allows recovery in less than 1 minute after collision.



Constant Beam Length System

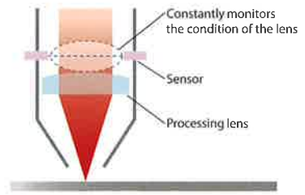
Maintains consistent beam quality by fixing the system's beam path length regardless of the position of the processing head. Provides stable and superior cut quality.



Processing Lens Monitor

Monitors the condition of the processing lens at all times, contributing to stable performance.

* Not available to 35CF-R

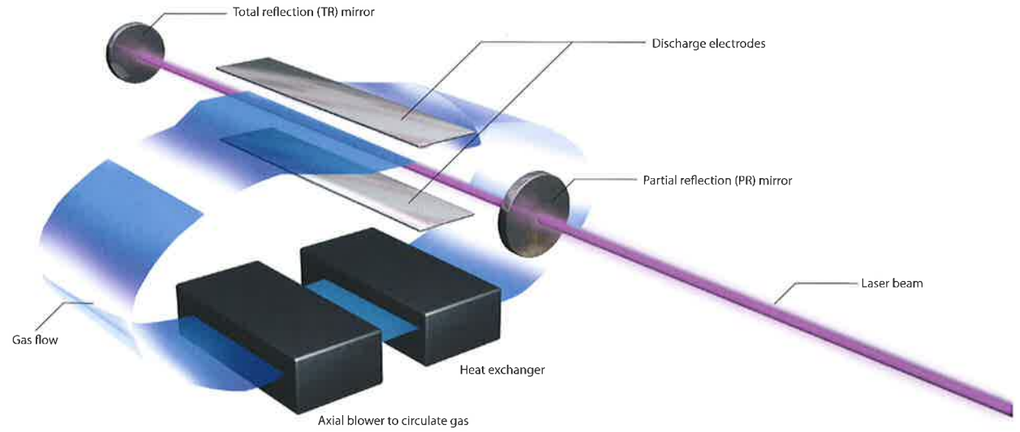


Resonator

SD Excitation 3-Axis Cross Flow Resonator

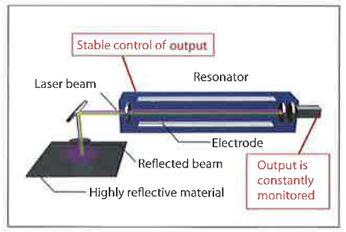
Unique Technologies Supporting Highly Reliable Processing

Mitsubishi Electric's resonator series realizes further enhancements in performance and stability, and incorporates original technologies that ensure high reliability.



High-speed power sensor

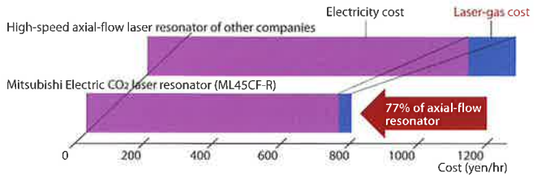
Mitsubishi's high-speed power sensor, which comes standard on the eX, monitors the laser output in real time. Maintains an output true to the desired setting with a power variation less than ±1%. Allows processing of highly reflective materials such as aluminum and copper.



Patent No. 1836228
Kokoku
(examined patent publication)
No. 4-56479

Gas-sealed resonator

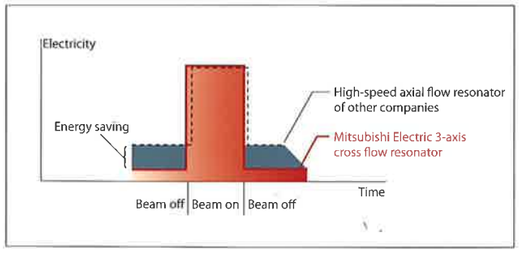
The seal-off operation reduces gas consumption to only about four gas cylinders per year (operating 250 days per year). Allows 24 beam on hours at rated power between gas changes. Significantly reduces operating cost and eliminates the need to change gas cylinders on a frequent basis.



* Comparison when processing a t6mm mild steel at a 50% operating ratio (resonator only, does not include processing machine)

Just-On-Time discharge method

The Just-on-time discharge method significantly reduces power consumption when the beam is turned off.



Options

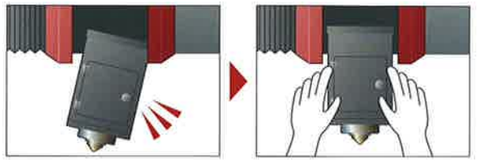
Optional Equipment

f254mm (f10") lens

Improves the processing capability when cutting stainless steel with nitrogen.

Magnetic damage reduction mechanism

Protects the head and eliminates the need for nozzle centering in the event of a crash. Allows quick recovery.



Automation pack

This combined package includes the magnetic damage reduction and a nozzle changer, realizing shorter setup times and higher productivity.

- Magnetic Damage Reduction Mechanism
- Nozzle Changer

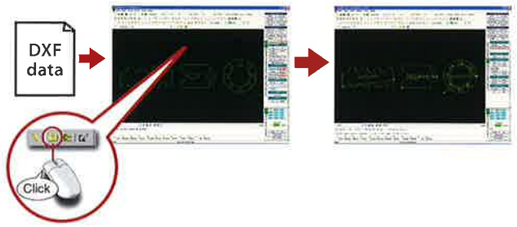
These features reduce setup time and allow automated high-mix, low volume production, while maximizing productivity.

CamMagic LA

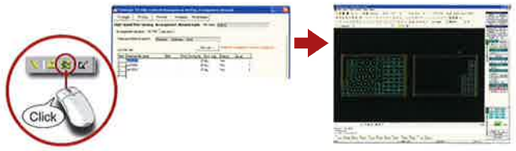
A CAD/CAM system designed for 2D CO_2 laser processing machines.

- Simple "One-click" Operation

After loading the DXF/IGES data, register parts and diagrams, and create NC programs with a single click.



Nest parts and create NC nesting programs with a single click.



- Optimum Conditions Setting

Load cutting conditions from the eX series laser processing machine using LAN or a USB storage device and easily create NC programs with optimal conditions*.

* Hole-diameter detection and piercing conditions are set automatically.

- Optional Features

Options		eX		
		ML35CF-R	ML45CF-R	ML60XF
Processing machine	f127mm (f5") lens	Standard	Standard	Standard
	f254mm (f10") lens	-	○	Standard
	Oil spray	○	○	○
	Magnetic damage reduction mechanism	○	○	○
	Automation pack (magnetic damage reduction + nozzle changer)	○	○	○
	Work lifter	○	○	○
	Processing lens monitor	-	Standard	Standard
Control unit	Network download	○	○	○
Solutions	CamMagic LA (CAD/CAM exclusively for lasers)	○	○	○
	Linked nesting	○	○	○
	Linked DXF conversion	○	○	○
	Linked e-mail notification additional features	○	○	○

CAD/CAM Link Functions

CAD/CAM link allows remote access to CAD/CAM software, compatible with the link functions, from the processing machine. Operators can create and download nesting programs at the shop floor according to need, leading to improved work efficiency.

Linked nesting

- Linked Barcode Reader

Read the barcode on the instruction sheet to automatically load NC program onto NC from a linked CAD/CAM computer and perform program search.

* NC programs in the control unit and network drive may be searched by the barcode reader without this option.

Barcode reader

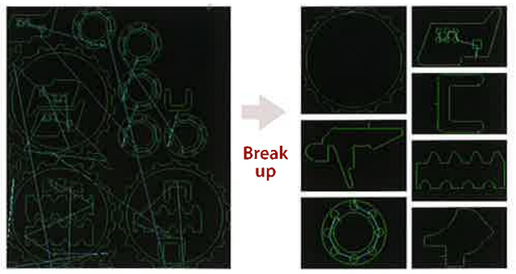
- Linked Nesting

Set necessary parts and the required quantities of each part to create nesting program on the CAD/CAM computer connected via LAN, load onto NC and perform program search.

* The linked nesting function delivers higher yield compared to simple nesting which treats all parts as rectangles.

CAM/CAM linked nesting

Nesting program may be broken up into individual parts, allowing the operator to add additional parts if necessary.



Nesting program

Component thumbnails

Linked e-mail notification additional features

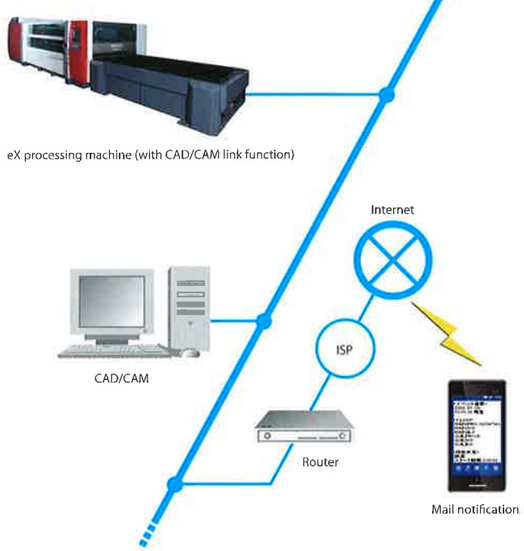
Setup e-mail notification to notify the recipient of the status of the laser processing machine. (Time of day to notify recipient, Alarms to notify / not notify, Process complete notification e-mail setting, Multiple e-mail setting).

E-mail notification settings

Linked DXF conversion

Load DXF files onto NC, create NC programs on the CAD/CAM computer connected via LAN, and perform program search.

- Example System Configuration



eX processing machine (with CAD/CAM link function)

- Functions/Options Chart

Options	Function
Linked nesting	Linked nesting + Linked barcode reader
Linked DXF conversion	Linked DXF + Linked barcode reader
Linked mail notification expansion function	Additional e-mail notification settings

CAD/CAM link software installation requirements

*1 A CAD/CAM software compatible with link functions is required in order to use the CAD/CAM link functions (nesting, DXF conversion).
*2 The processing machine must be connected to a LAN. Additionally, the link function on the processing machine must be turned on.
*3 The customer is responsible for preparing hardware such as computers, mobile phones and LAN cables.
*4 Link functions can be used free of charge during a 90-day trial period (assuming that the requirements in 1 to 3 above have been met). To use the link functions after the expiration of the trial period, users are required to purchase the optional product.

Specification

Cutting Capability

Resonator	Material	Assist gas	Thickness (mm) 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
ML35CF-R	Mild steel (SS400)	Oxygen	
	Stainless steel (SUS304)	Nitrogen	
	Aluminum alloy (A5052)	Air	
		Nitrogen	
ML45CF-R	Mild steel (SS400)	Oxygen	
	Stainless steel (SUS304)	Nitrogen	When using f254mm (f10") lens ※
	Aluminum alloy (A5052)	Air	
		Nitrogen	When using f254mm (f10") lens ※
ML60XF	Mild steel (SS400)	Oxygen	
	Stainless steel (SUS304)	Nitrogen	When using f254mm (f10") lens
	Aluminum alloy (A5052)	Air	
		Nitrogen	When using f254mm (f10") lens

* The above are processing capabilities based on special conditions. The acceptance criteria are as stated in the specifications.
* The actual performance/quality may vary depending on the surface condition and deviation in the material composition even if materials are of the same specifications.
* Variations in processing performance/quality may occur depending on the part geometry.
* Regarding mild steel (SS400) with a thickness over t19mm, capacities listed in this catalog are based on LS material (steel plate for laser cutting) of Chubu Steel Plate Co., Ltd.

※ Optional

Processing Machine Specifications

Model name				ML2512eX-45CF-R	ML3015eX-35CF-R	ML3015eX-45CF-R	ML3015eX-60XF
Drive system				Flying optic (3-axis beam movement)			
Control system				X-Y-Z simultaneous 3-axes (Z-axis height control is also possible)			
Dimensions and Performance	Target workpiece dimensions (mm)			2,440×1,220	3,050×1,525		
	Max. workpiece weight (kg)			610	950		
	Table pass height (mm)			880			
	Stroke		X axis (mm)	2,500	3,100		
			Y axis (mm)	1,250	1,565		
			Z axis (mm)	150			
	Speed	Rapid travel speed	X, Y axis (m/min)	Maximum 100			
			Z axis (m/min)	Maximum 65			
		Maximum processing feedrate (m/min)		50			
	Accuracy	Positioning accuracy	X, Y axis (mm)	0.05/500			
			Z axis (mm)	0.1/100			
		Repeatability (mm)		±0.01			
	Processing head			Auto focus preset head			
Power requirement (including processing machine, resonator) (kVA)				77	68	77	98
Weight (kg)	Machine weight (including resonator)			Approx. 10,100	Approx. 10,800		
	Pallet changer weight			Approx. 1,800	Approx. 2,100		

Cooling System Specifications

Model name	LCU20WIX	LCU20AIX	LCU30WIX	LCU30AIX
Applicable resonator	ML35CF-R, 45CF-R		ML60XF	
Cooling method	Water	Air	Water	Air
Power requirement (cooling unit) (kVA)	32	40	51	64
Cooling capacity (kW)	60	60	90	90
External dimensions (mm)	2,350×735×1,720	2,980×1,010×2,027	1,852×1,670×1,720	3,990×1,010×2,027
Weight (kg)	Approx. 1,000	Approx. 1,100	Approx. 1,300	Approx. 1,500

Resonator Specifications

Model name		ML35CF-R	ML45CF-R	ML60XF
Excitation method		3-axis SD excitation cross flow resonator		
Laser output characteristics	Rated output (W)	3,500	4,500	6,000
	Beam mode	Lower order (TEM01 *main component)		
	Power stability (%)	±1 or less during power control (relative to rated output)		
	Output power adjustable range (%)	0～100		
Laser gas composition		CO_2:CO:N_2:He=8:4:60:28		
Laser gas consumption (L/hr)		Approx. 3		
Power requirement (resonator) (kVA)		60	69	90
External dimensions (mm)		2,500×800×1,810		2,600×800×1,960
Weight (kg)		Approx. 2,200		Approx. 2,250
Standard features		Beam shutter, Visible laser, High-speed power sensor		

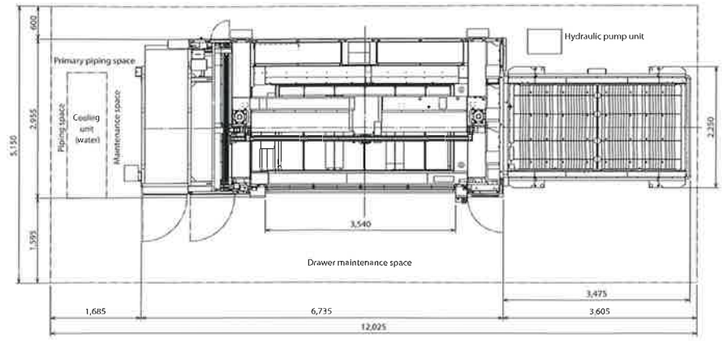
Control System Specifications

Model name	LC30BX
Display screen	15"TFT (touch panel)
Hard disk (GB)	20
Program input method	Screen creation, USB (ver. 2.0), Ethernet
Operation method	Memory operation, HD direct operation

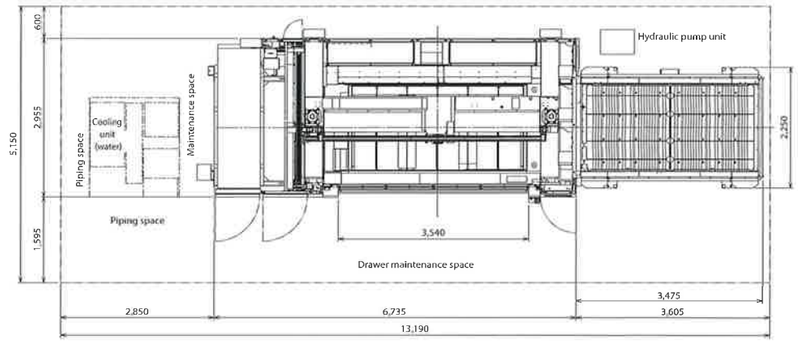
Layout

Unit: mm

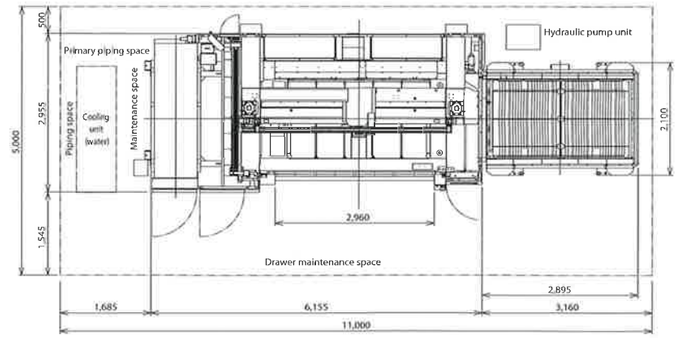
ML3015eX-45CF-R
ML3015eX-35CF-R



ML3015eX-60XF



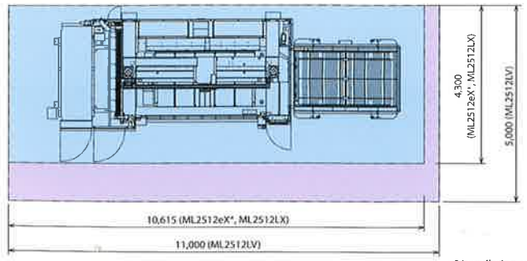
ML2512eX-45CF-R



* Maximum height: 2,260mm (35CF-R,45CF-R), 2,410mm (60XF)
* Please contact a Mitsubishi Electric representative regarding installation space for the cooling unit.

Space Saving

The eX has a small footprint, even smaller than our previous LX and LV series.



* Installation space including optional features.

Processing machine specifications

Model name			ML2512HV2-R	ML3015HV2-R
Drive system			Hybrid type (X axis: Table movement, Z axis: beam movement)	
Control system			X-Y-Z simultaneous 3-axes (Z-axis height control is also possible)	
Dimensions and Performance	Target workpiece dimensions (mm)		2440 x 1220	3050 x 1525
	Table pass hegiht (mm)		850	
	Stroke	X, Y, Z axis (mm)	2500 x 1250 x 300	3100 x 1550 x 300
	Speed	Rapid travel speed (m/min)	Maximum 50 (X, Y axis)	
		Processing travel speed (m/min)	Maximum 30	
	Accuracy	Positioning accuracy (mm)	0.01/500 (X, Y axis), 0.01/100 (Z axis)	
		Repeatability (mm)	±0.005 (X, Y axis)	
	Processing head		Auto focus preset head PH-XS	
Applicable resonator			ML20XF, ML32XP, ML45CF-R	
Power requirement (kVA)			6	
Weight (kg) Machine weight (excluding resonator)			Approx. 7600	Approx. 9600

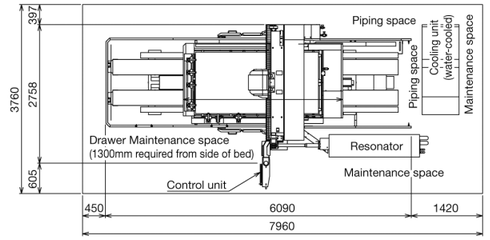
Resonator specifications

Model name		ML20XF	ML32XP	ML45CF-R
Excitation method		3-axis SD excitation cross gas flow		
Laser output characteristics	Pulse peak power (W)	3000	3200	5000
	Rate output (W)	2000	2700	4500
	Beam mode	Lower order (TEM01*main components)		
	Power stability (%)	±1 or less during power control(relative to rated output)		
	Output variation (%)	0 to 100		
Laser gas composition		CO2:CO:N2:He = 8:4:60:28		
Laser gas consumption (ℓ/hr)		Approx. 1		Approx. 3
Power input (resonator main unit) (kVA)		33	41	69
External dimensions (mm)		2040 x 450 x 1620		2500 x 800 x 1811
Weight (resonator main unit) (kg)		Approx. 1200		Approx. 2200

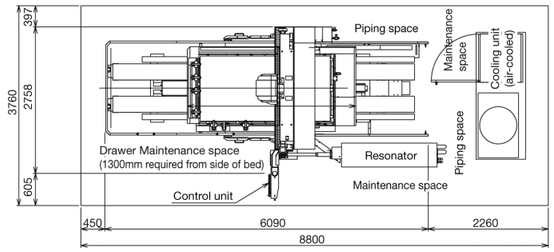
Cooling system specifications

Applicable resonator		ML20XF	ML32XP	ML45CF-R
Water cooling system	Model name	LCU10WIX	–	LCU20WIX
	Power input (cooling unit) (kVA)	18		32
	External dimensions (mm)	1790 x 735 x 1722		2350 x 735 x 1722
	Weight (cooling unit) (kg)	Approx. 800		Approx. 1000
Air cooling system	Model name	LCU10AIX	LCU15AIX	LCU20AIX
	Power input (cooling unit) (kVA)	20	21	40
	External dimensions (mm)	1970 x 1010 x 2027	2390 x 934 x 1772	2980 x 1010 x 2027
	Weight (cooling unit) (kg)	Approx. 800	Approx. 850	Approx. 1100

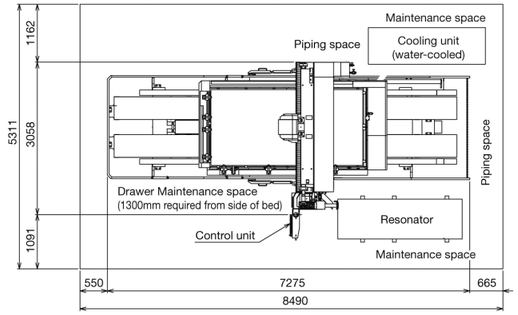
Standard Layout



ML2512HV2-R-20XF (water-cooled) **(Maximum height: 2350mm)**



ML2512HV2-R-32XP (air-cooled) **(Maximum height: 2350mm)**



ML3015HV2-R-45CF-R (water-cooled) **(Maximum height: 2350mm)**

⚠ Safety Warning

To ensure proper use of the products listed in this catalog. please be sure to read the instruction manual prior to use.

* Not all models are supported for all countries and regions.
* Machine specifications differ according to the country and region, so please check with your dealer.
* Processing data provided in this brochure is for reference only.

Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001(standards for quality assurance management systems)

ISO 14001 JACO EC97J1113 — UKAS MANAGEMENT SYSTEMS 051

ISO 9001 BUREAU VERITAS Certification — UKAS MANAGEMENT SYSTEMS

L(NA)-13080ENG 1308 Printed in Japan (MEE)

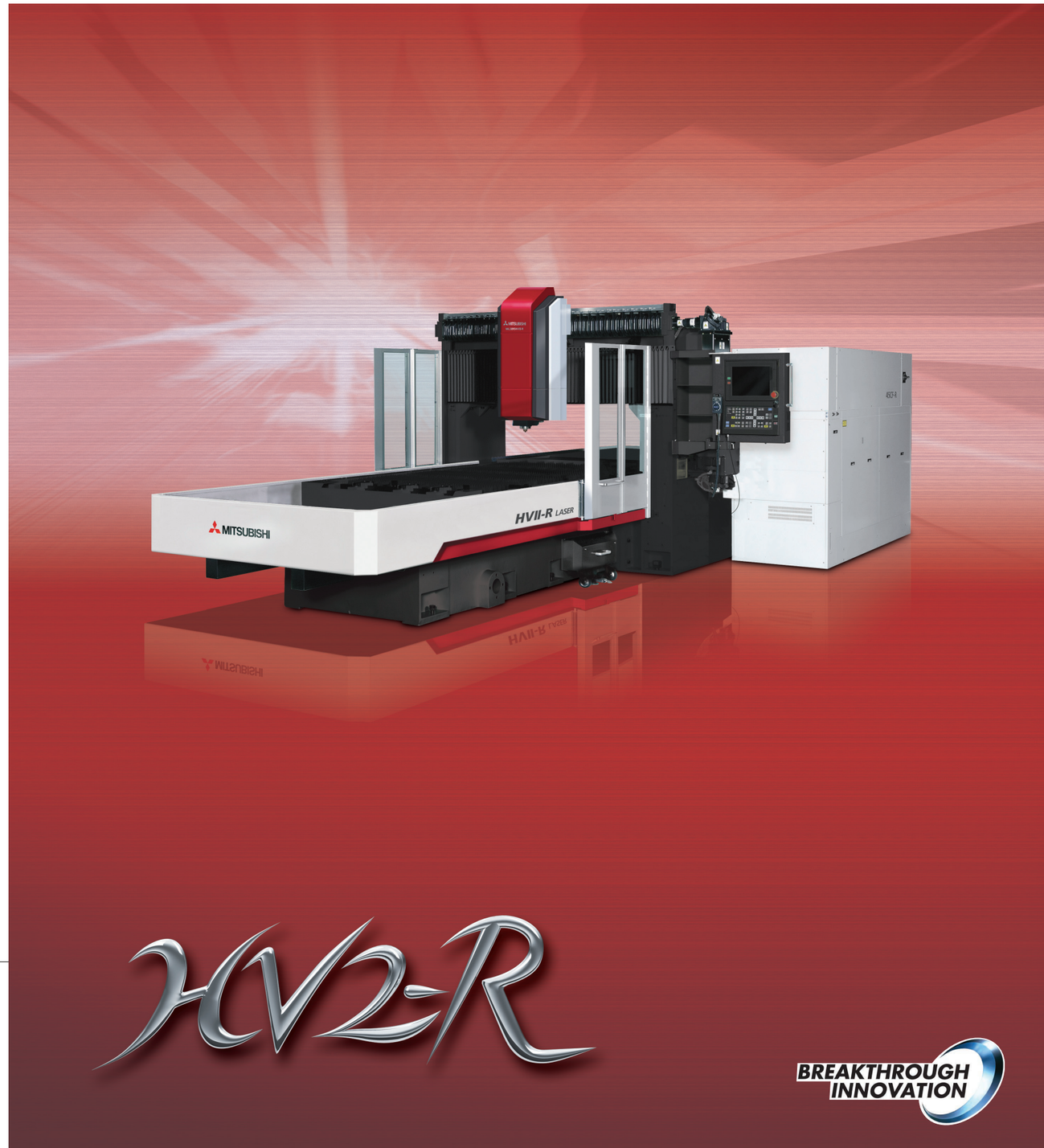
Revised publication, effective Aug. 2013.
Specifications are subject to change without notice.

MITSUBISHI ELECTRIC

Changes for the Better

for a greener tomorrow eco Changes

Mitsubishi CO_2 2-Dimensional Laser Processing Systems HV2-R Series



Advanced processing performance and high value added processing

HV2-R Series

Enhanced processing performance and improved productivity

Low operating cost

Flexible on-site processing

Achievement of high value added processing

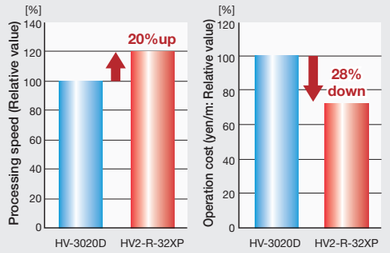
Enhanced processing capability and improved productivity

Selectable new resonator of ML32XP, ML45CF-R.
Significant improvement of processing performance and productivity as well as shorter pierce time by new processing head.

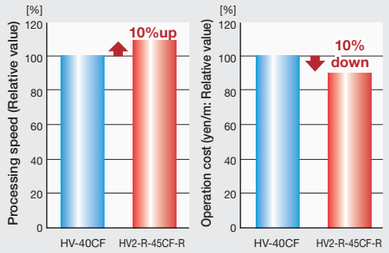
Low operating cost

Reduces the operating cost by up to 28% during nitrogen cutting. (*1)
ECO mode function reduces the cost during standby by up to 99%. (*2)

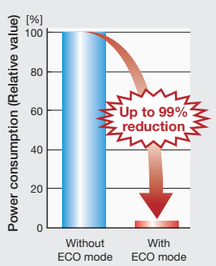
SUS304 t3mm, Assist gas: Nitrogen



SS400 t12mm, Assist gas: Oxygen



ECO mode



*: 1 Equipped with ML32XP, cutting of SUS t3mm *2: Equipped with ML45CF-R

Flexible on-site processing

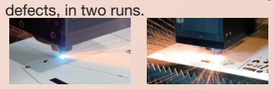
Reflects data from on-site onto control unit. Achieves easy nesting, high quality processing of protected sheet metal, offcut cutting by easy operation of NC display.

Easy nesting

Allows for rectangular nesting at the laser's NC control to meet urgent needs for additional parts.

Double cut function

Allows high quality processing of poor quality material and protected sheet metal, which often causes cutting defects, in two runs.


1st Cut: Surface removal

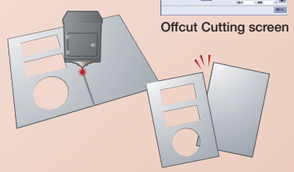
2nd Cut: Main processing


Sample using the double-cut function

Offcut Cutting

Easily cut offcuts into several pieces by using the Offcut Cutting screen.


Offcut Cutting screen

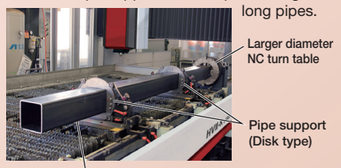


Achievement of high value added processing

Large diameter NC turn table (*3), high precision positioning function (*3), Brilliantcut (*4) achieve expansion of processable range and high value added processing.

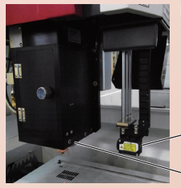
Larger diameter NC turn table (option)

Capable to chuck square pipe of max. 150mm. Pipe support enables processing of long pipes.



High precision positioning function (option)

Positions the hole processed by punch press. Combined processing of laser and punch press is achieved.



*3: Optional *4: Equipped with ML45CF-R

Optional Features

Model name		HV2-R		
		ML20XF	ML32XP	ML45CF-R
Processing Machine	f127mm (f5.0") lens	√		
	f254mm (f10.0") lens	–	√	
	Magnetic damage reduction mechanism	√		
	Processing lens monitor	√		Standard
	Fine pierce	√ (*1) (*2) (*3)		
	Oil spray	√ (*1) (*3)		
	Beam optimaization unit	–		Standard
	High pressure Gas NC control	√		Standard
	High pressure Air specification	√ (Including above)		Standard
	X aixs work clamp	√		
	Processing table (work support specification)	√		
	NC turn table	√ (*1)		
	Larger diameter NC turn table	√ (*1)		
	Pipe support for NC turn table	√		
	Pipe support for NC turn table (Disk type)	√		
	Pilot pin	√		
	High precision positioning function	√ (*3)		
	Chip conveyor	√ (*2)		
	Foot switch (for work clamp)	√		
Control systems	Network connection unit	Standard		
	Network down load function	√		
	Barcode reader	√		
	Addition of external I/O	√		
Solution	Cam Magic LA (For LASER CAD/CAM)	√		
	Linked nesting	√		
	Linked DXF conversion	√		
	Linked e-mail notification additional features	√		
	Alarm notification	√		
	Production management support	√		

*1: When NC turn table or larger diameter NC turn table is installed, oil spray function and fine pierce cannot be installed at the same time.
*2: When Fine pierce is installed, Chip conveyor cannot be installed at the same time.
*3: When High precision positioning function is installed, Fine pierce and oil spray function cannot be installed at the same time.

Processing capability

Resonator	Materials	Assist gas	Thickness (mm) 2 4 6 8 10 12 14 16 18 20 22 24 26
ML45CF-R	Mild Steel (SS400)	Oxygen	
	Stainless steel (SUS304)	Nitrogen	
		High pressure Nitrogen	When using f190.5mm (f7.5") lens / When using f254mm (f10") lens*
	Aluminum alloy (A5052)	Air	
		High-pressure air	
		High pressure Nitrogen	
ML32XP	Mild Steel (SS400)	Oxygen	
	Stainless steel (SUS304)	Nitrogen	
		High pressure Nitrogen*	When using f190.5mm (f7.5") lens / When using f254mm (f10") lens*
	Aluminum alloy (A5052)	Air	
		High-pressure air*	
		High pressure Nitrogen*	When using f190.5mm (f7.5") lens / When using f254mm (f10") lens*
ML20XF	Mild Steel (SS400)	Oxygen	
	Stainless steel (SUS304)	Nitrogen	
		High pressure Nitrogen*	
	Aluminum alloy (A5052)	Air	
		High-pressure air*	
		High pressure Nitrogen*	

*The above are processing capabilities based on special conditions. The acceptance criteria are as stated in the specifications.
*The actual performance/quality may vary depending on the surface condition and deviation in the material composition even if materials are of the same specifications.
*Variations in processing performance /quality may occur depending on the party geometry.
*Regarding mild steel (SS400) with a thickness over t19mm, capacities listed in this catalog are based on LS material (steel plate for laser cutting) of Chubu Steel Plate Co.,Ltd.
*Optional