



for a greener tomorrow



**MITSUBISHI
ELECTRIC**

Changes for the Better

FACTORY AUTOMATION

eX-F Series 2-Dimensional Fiber Laser Processing Systems



eX-F

GLOBAL IMPACT OF MITSUBISHI ELECTRIC



Through our vision "Changes for the better", Mitsubishi Electric paves the path to a brighter future.

Changes for the Better

We bring together the best minds to create the best technologies. At Mitsubishi Electric, we understand that technology is the driving force of change in our lives. In order to bring greater comfort to daily life, maximize the efficiency of businesses and keep things running across society, we integrate technology and innovation to make changes for the better.

Mitsubishi electric is involved in many areas including the following business sectors.

Energy and Electric Systems

Wide range of power and electrical products from generators to large-scale displays

Electronic Devices

Wide portfolio of cutting-edge semiconductor devices for systems and products

Home Appliance

Reliable consumer products like air conditioners and home entertainment systems

Information and Communication Systems

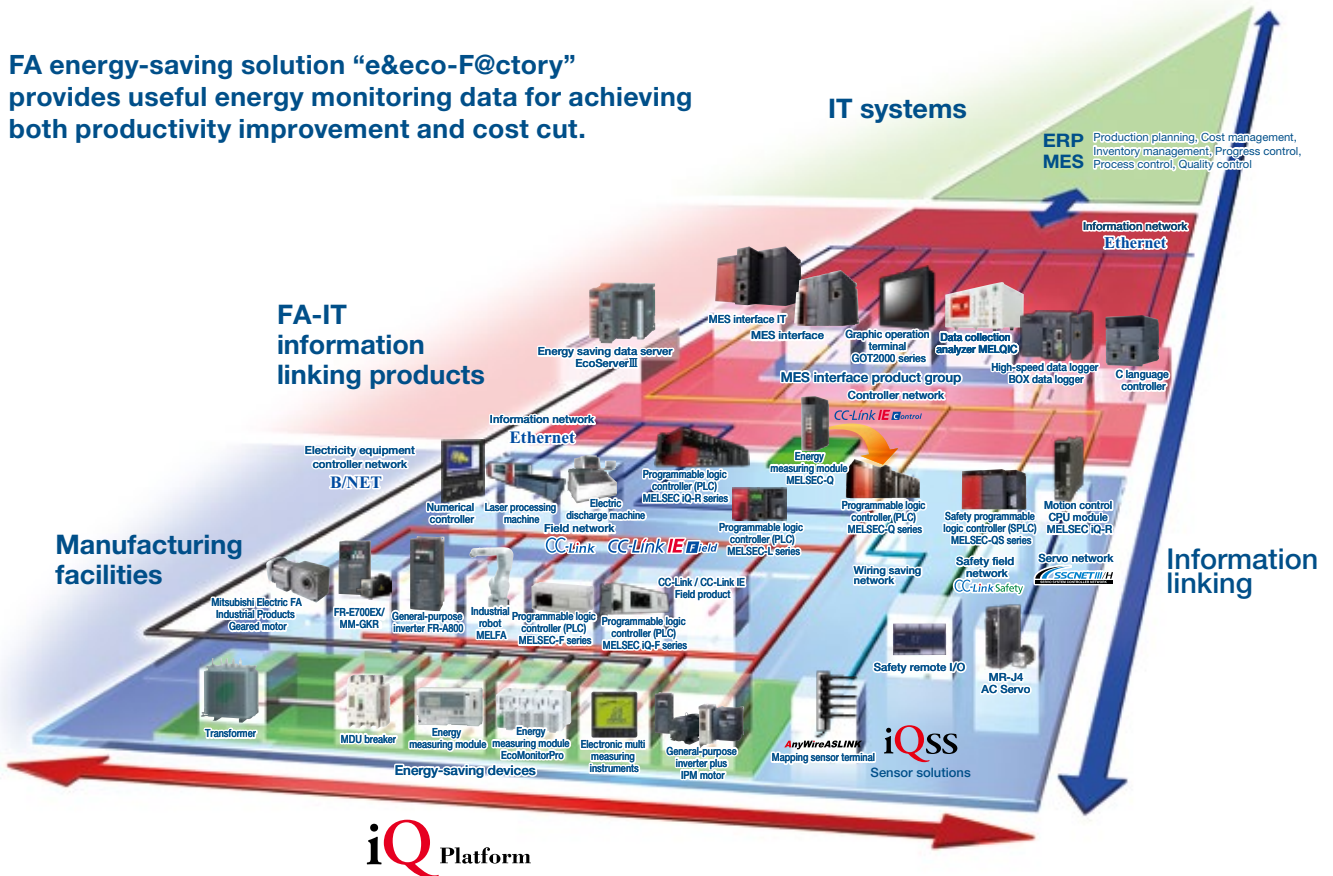
Commercial and consumer-centric equipment, products and systems

Industrial Automation Systems

Maximized productivity and efficiency with cutting-edge automation technology

Mitsubishi Electric continues challenge of being only FA supplier delivering highest satisfaction to our customers.

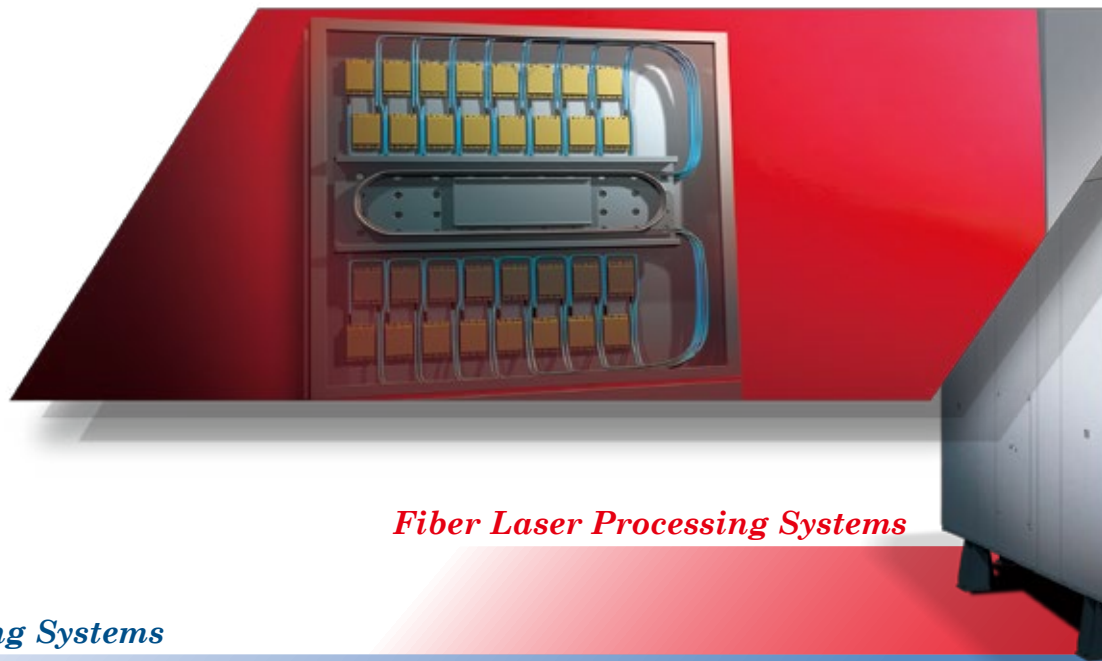
FA energy-saving solution “e&eco-F@ctory” provides useful energy monitoring data for achieving both productivity improvement and cost cut.



As the world's leading general electric device manufacturer, Mitsubishi Electric Corporation is engaged in a broad range of businesses from home electronics to space equipment. We are globally operating in the following five business domains: Energy and Electric Systems, Industrial Automation Systems, Information and Communication Systems, Electronic Devices and Home Appliances. For over ninety years since we started manufacturing the general-purpose motors, Mitsubishi Electric FA systems business sector has been supporting the manufacturing of not only Japan, China and other Asian countries but also the countries of the world. Through the years of our accumulation and advancement in

the FA and drive system controls, mechatronics and production technologies, we are expanding the diversity of our product lineup one after another ranging from the controllers, drive units and mechatronics products to power distribution control devices. In addition to such products and units of the factory automation, we are quick in providing solutions such as “e-F@ctory” and “iQ Platform” to innovate the manufacturing scene. From now on also, Mitsubishi Electric as the comprehensive FA supplier is delivering the products that meet our customer needs throughout the world.

Fusion of eX and fiber laser leads evolutionary advancement in perform



Fiber Laser Processing Systems

CO₂ Laser Processing Systems



*1986
L series*

*1994
LB series*

*1995
LX series*

*2001
LV series*

*2008
LV PLUS series*

*2011
eX series*

ance

Fast

Combination with fiber laser achieves higher performance during high-speed processing

Flexible

Flexible operation maximizes fiber laser performance

Fiber

Fine

Mitsubishi Electric X fiber laser achieves the ultimate in ecology



**2015
eX-F PLUS series**

*Additional window is optional.



**2015
eX PLUS series**

Excellent

Outstanding productivity for Thin & Thick Plates

eX

Ecology

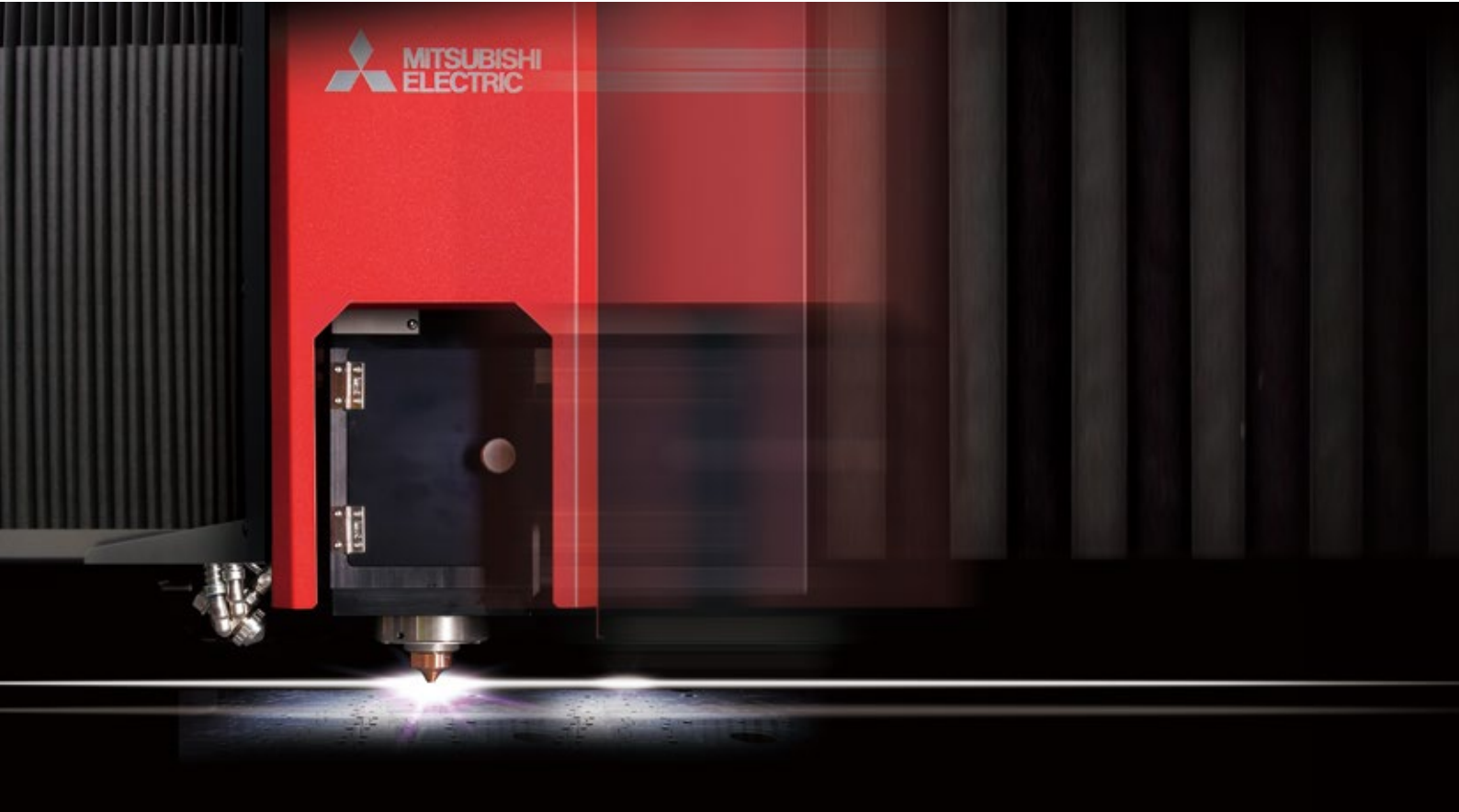
Eco mode and oscillator optimization has realized dramatic energy saving and CO₂ reduction.

Easy to use

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

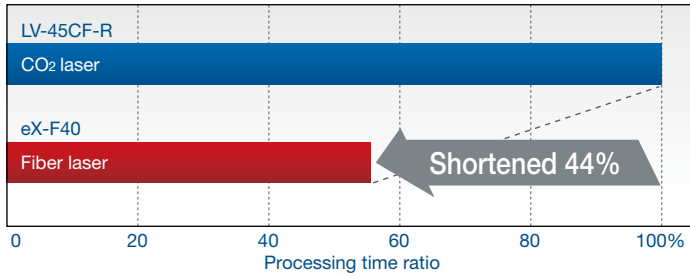
Fast × Excellent

Towards the realm of high-speed thick-plate processing

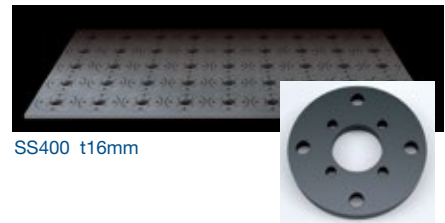


Productivity for Thin & Thick Plates has improved outstandingly

Medium/Thick-plate processing

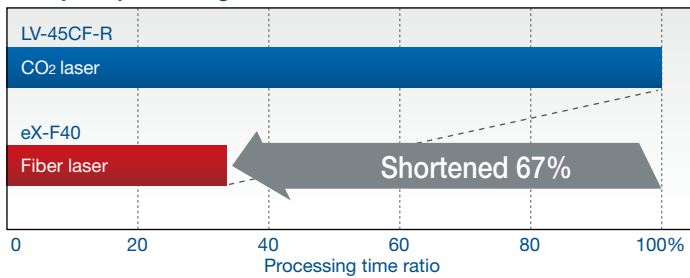


Control technologies and application technologies optimized for mid & thick plates doubled the productivity.

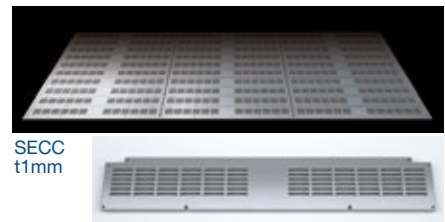


SS400 t16mm

Thin-plate processing



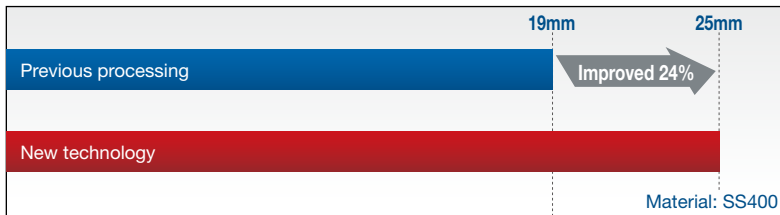
Productivity has been improved by 3 times owing to high beam convergence of fiber laser and the latest control technologies.



SECC t1mm

Combination with fiber laser has realized wide range of processing for thin to thick plates. Mitsubishi's original oscillator high-speed control function achieved higher performance of high-speed processing.

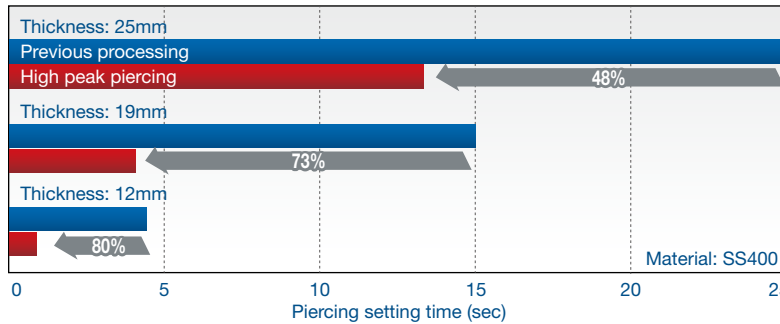
Technologies Supporting Thick-plate Processing



Increased plate thickness

Applying the application technologies developed for CO₂ laser processing machine to fiber laser, high-speed and high quality of thick plate processing has been achieved.

*When thick mild steel cutting function (option) is used.



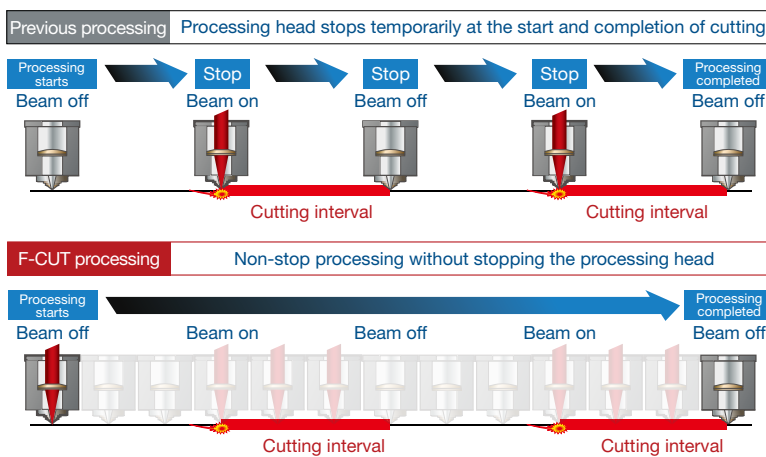
Reduction in piercing time of mid & thick mild steel

Piercing time has been reduced by high-speed control of oscillator, application of high peak pulse condition and optimum control of focal position.

*When high peak pierce (option) is used.



Technologies Supporting Thin-plate Processing



F-CUT® - It's now possible to increase the speed even more

High-speed oscillator and control device communications enable the beam to be turned on/off without stopping the axis.



MHC-L reduces the beam on/off timing

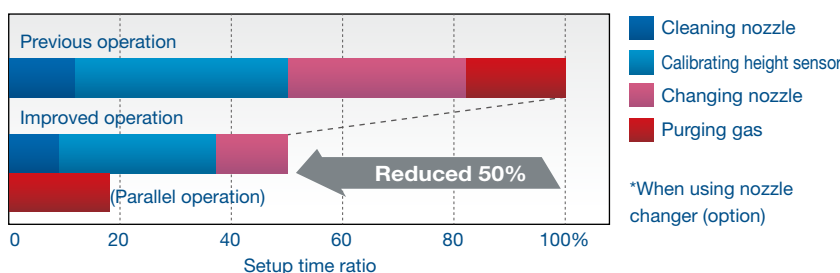
(Mitsubishi Electric High-speed Laser Control)

Mitsubishi Electric's original system is utilized to maximize the high-speed processing performance of the fiber laser.

- Faster communication between control system and oscillator

- Beam on/off timing is controlled in one-microsecond (1μsec) units (1/1,000,000).

Technologies Supporting Higher Productivity

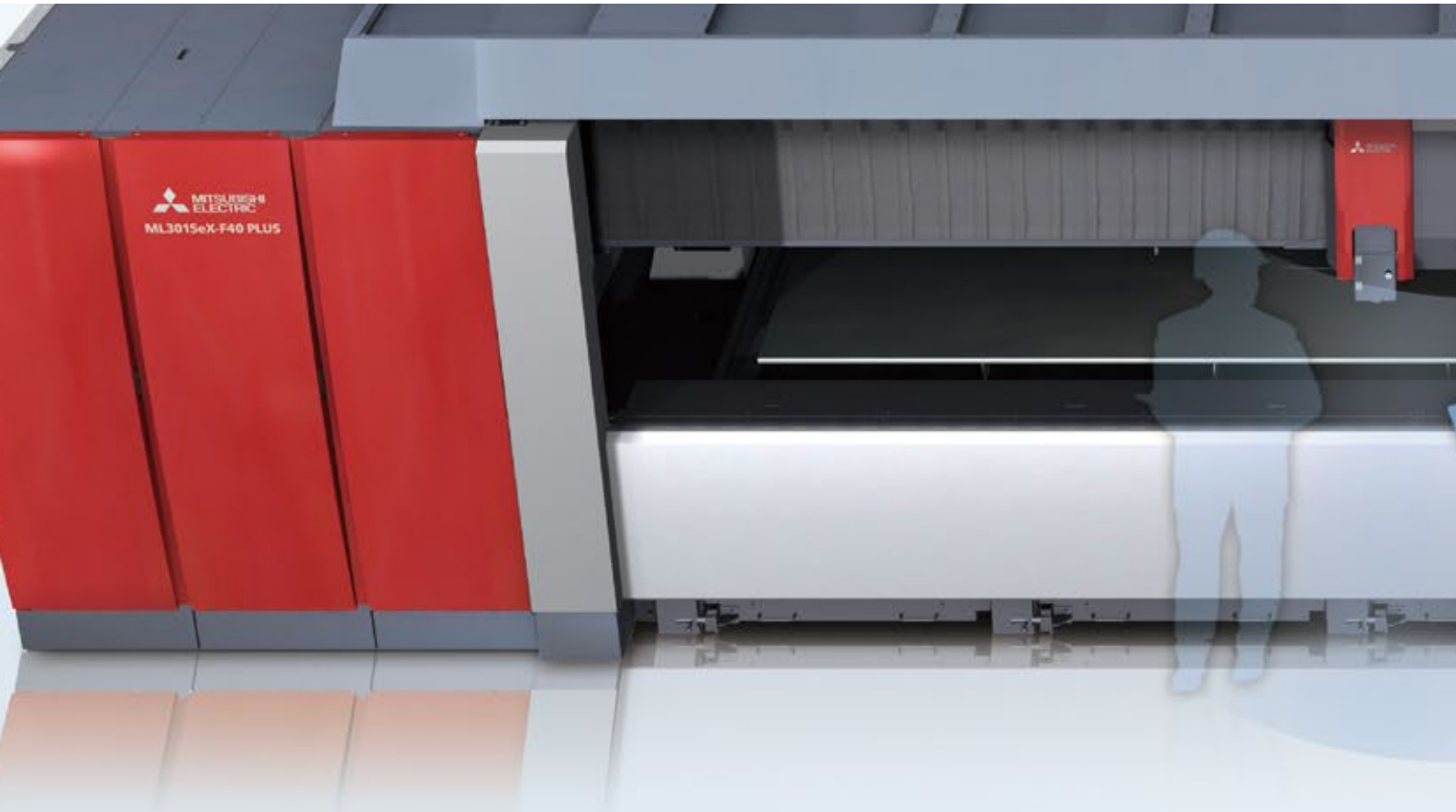


Non-actual processing time

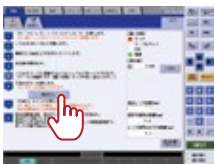
High-speed of each operation before processing and parallel operation improves total productivity.

Flexibility × Easy to use

Easily apply to various tasks



Operation ease × Reliable operation



Press the FOCUS button on the screen



Press the START button on the processing machine

Automatic focusing

Processing head developed in-house enables the automatic focusing function to be provided as standard equipment.



Simple nesting

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



Step 1: Read barcode on instruction sheet



Step 2: Press the START button on the processing machine



2-action Processing

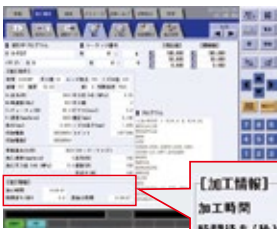
2-action processing improves operability.



Simple program editor

Allows the change of program and processing condition number easily while checking the shape on the graphic screen.

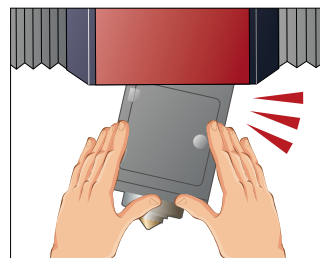
Excellent front door and operation screen with sophisticated usability.



Displays the remaining processing time

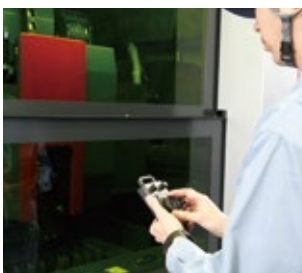
Processing time display

Equipped with processing time estimation function. Supports production plan by visualizing the processing time before processing.



Magnetic damage reduction function

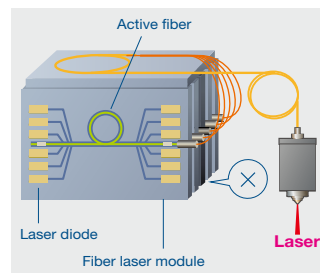
Protects the head and eliminates the need for nozzle centering in the event of a crash. Allows quick recovery.



Active control

Corrects the processing condition by a handle operation while looking at the processing.

*Additional window is optional.



Hot reserve function

Even if a module failure occurs, continuous operation is possible with the remaining module.

Fine × Ecology

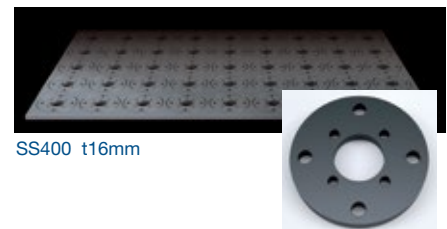
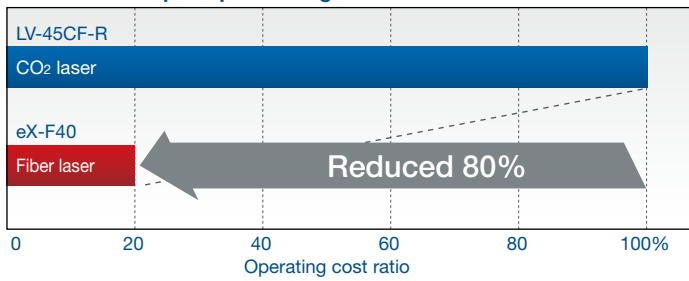
Smart ecology



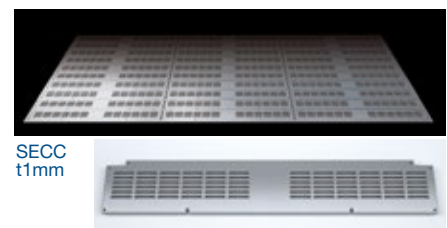
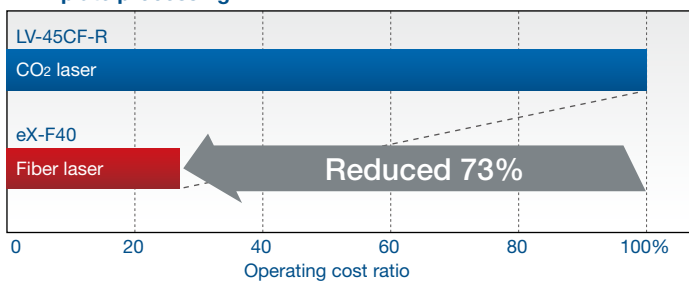
*Additional window is optional.

Integrated fiber laser reduces operating cost

Medium/Thick-plate processing

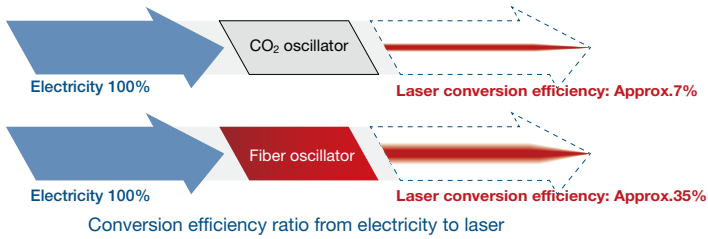


Thin-plate processing



Combination of Mitsubishi's control device, drive unit and fiber laser has realized 高次元 ecology.

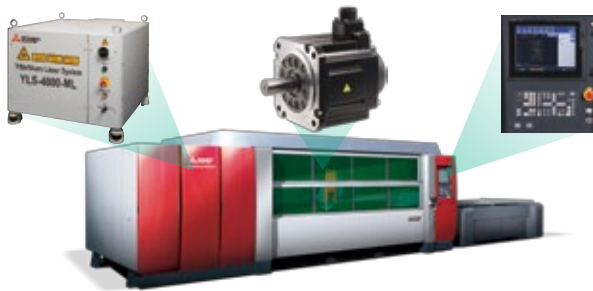
High-efficiency fiber laser oscillator



High laser conversion efficiency achieves electric power savings

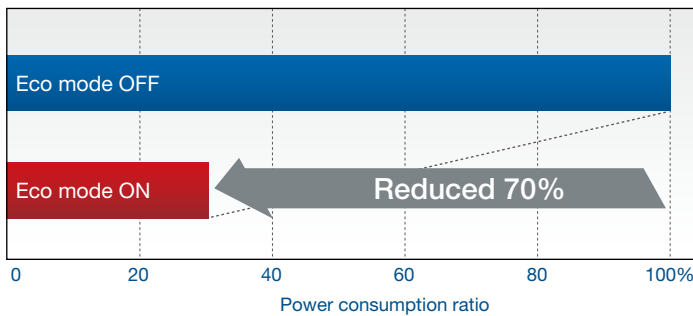
Compared to CO₂ lasers, fiber lasers with high laser conversion efficiency consume less electricity.

Power-saving CNC and drive unit



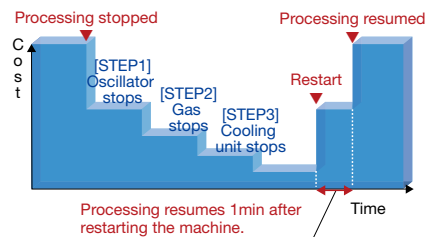
Operating cost reduced owing to energy-saving CNC and drive unit

Energy-savings realized using Mitsubishi Electric CNC and drive unit best matched for the fiber-laser oscillator.



Eco mode

Cost during standby has been reduced up to 70% owing to Eco mode, which automatically turns off each operation in stages after processing stops.



*Time required to resume operation varies depending on the equipment and usage conditions.

Visualization



Electricity consumption monitor



Gas consumption monitor

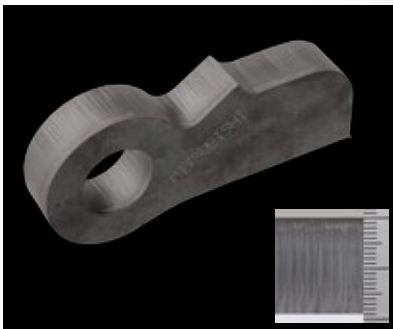
Electricity/Gas consumption monitor

Electricity and gas consumption can be easily checked on the operating screen. Visualization supports energy savings.

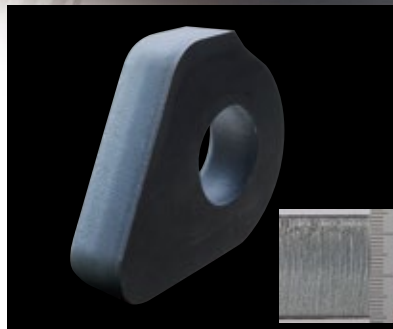
Processing performance



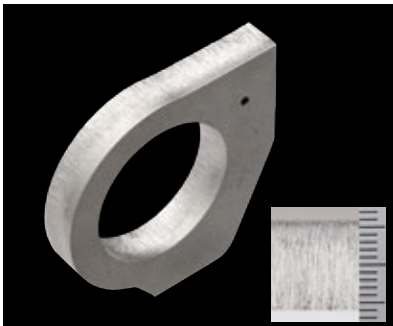
Thick plate



Material/Thickness:
Mild steel (SS400) t19mm



Material/Thickness:
Mild steel (SS400) t25mm
*When using Thick Mild Steel Cutting
Enhancement Function (option) is used.



Material/Thickness:
Stainless steel (SUS304) t12mm



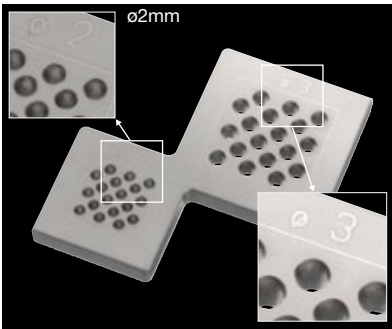
Material/Thickness:
Aluminum alloy (SUS304) t10mm

Processing movies can be viewed.



Thin plate Material/Thickness: Stainless steel (SUS304) t0.8mm

Medium to thick plate



Material/Thickness:
Stainless steel (SUS304) t6mm



Material/Thickness:
Mild steel (SS400) t6mm



Material/Thickness:
Mild steel (SS400) t12mm

Highly reflective material



Material/Thickness:
Stainless steel (SUS304) t1.0mm,
Copper (C1100) t1.0mm,
Brass (C2801) t1.0mm

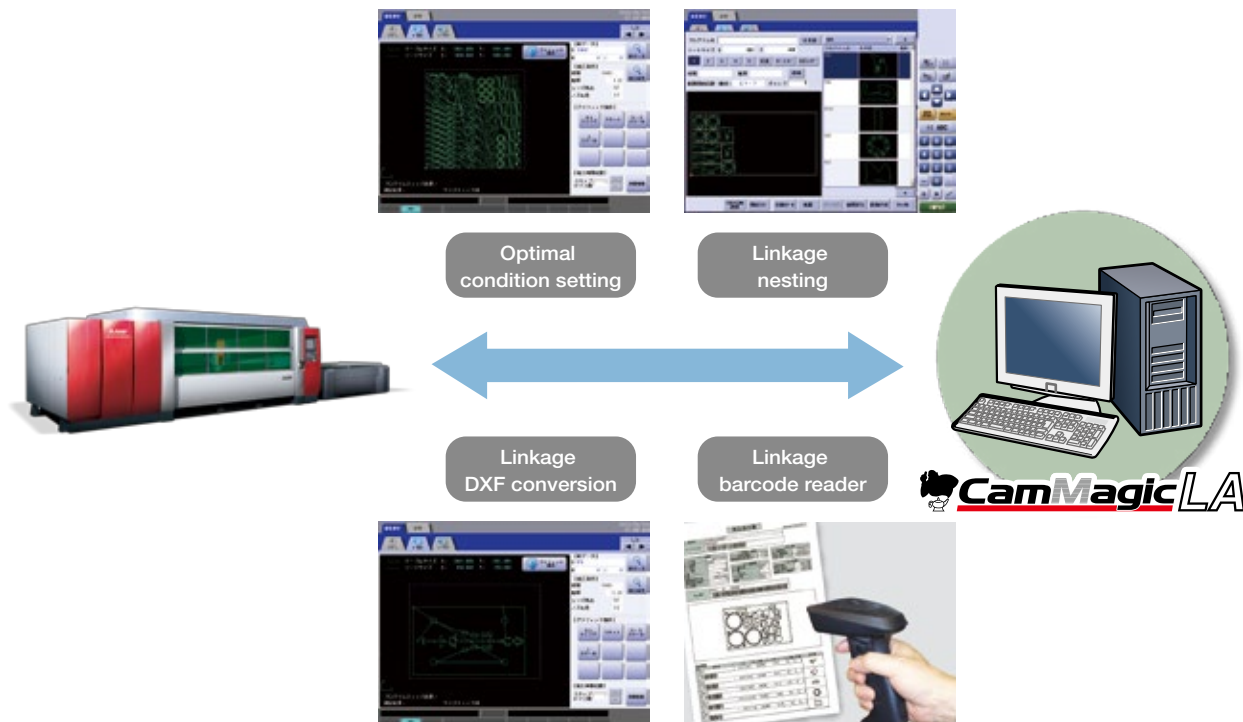


Material/Thickness:
Brass (C2801) t5mm



Material/Thickness:
Copper (C1100) t5mm

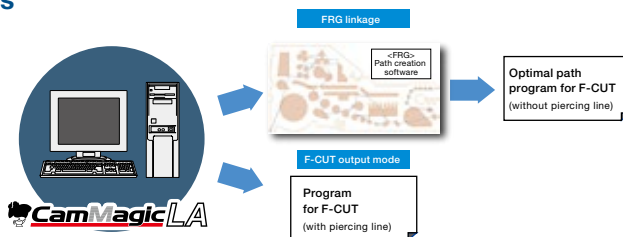
Laser Processing Systems Solutions



CAD/CAM for 2-dimensional laser systems

CamMagic LAFRG

CAD/CAM for 2-dimensional laser systems that is expert in processing system and exerts the processing performance at the maximum level. Processing machine linkage functions improve productivity. Material registration, NC data creation, etc. can be performed using by one-click operation. Program creation function for F-CUT is also provided as an option of CamMagic LA.



*FRG is a software application for optimal path creation when using F-CUT. Refer to the options pages for details.

二次元加工機用ソフトウェア

CamMagic SMOPlus [SpaceClaim SMOPlus]

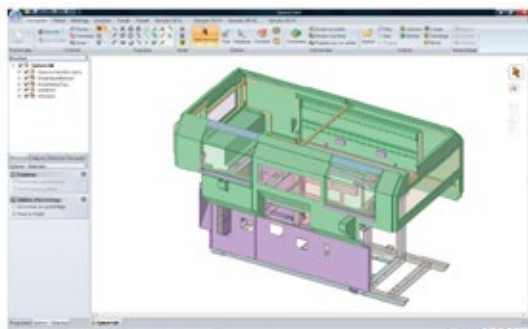
汎用CADで作成された三次元製品モデルを形状情報のみで板金展開します。展開されたデータをDXF形式でCamMagic LAに転送することで、NCデータを作成することができます。

NC-Changer

NCデータを異なるメーカーのNCデータに変換します。
(「株式会社ネオ」社 製品)

ベクトル名人

フォントやBMPデータの輪郭をベクトル変換し、DXFデータとして出力します。
(「株式会社ネオ」社 製品)



レーザ用生産支援ソフトウェア

BANKIN Navigator

作業進捗状況を監視することにより「現場の見える化」を推進し、無駄を排除した生産性の向上が可能です。

[注文登録] 注文情報を登録管理できます (CSVファイルからインポートも可能)。生産負荷状況から割込や平準化の調整ができます。

[まとめ加工] 板厚、材質および納期情報からネスティングを行うので納期に応じた製品を材料の無駄なく加工できます。

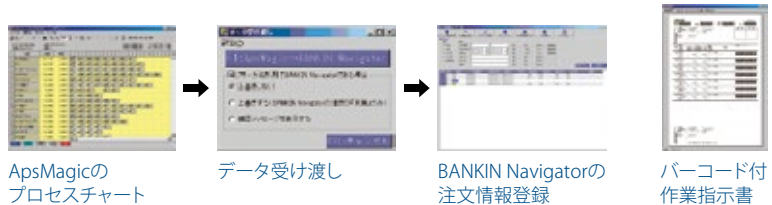
[加工進捗／実績収集] 加工進捗状況と加工実績時間をリアルタイムに把握できます。また、加工完了個数および材料在庫数の管理ができます。

上記以外にもメール通報機能、稼働実績グラフ機能など豊富な機能があります。



ApsMagicIII

生産計画において起こり得る工程負荷のバラツキを平準化し、作業現場に適した作業日程計画の立案をサポートします。また、切断工程はBANKIN Navigatorと連動することで、進捗と在庫管理を行うことができます。



加工機CAD/CAM連携 (外付)

CAD/CAM連携機能を内蔵していない加工機において加工機横に設置した連携用のパソコンとCAD/CAM (CamMagic LAなど) を連携させることで作業効率を向上することができます。

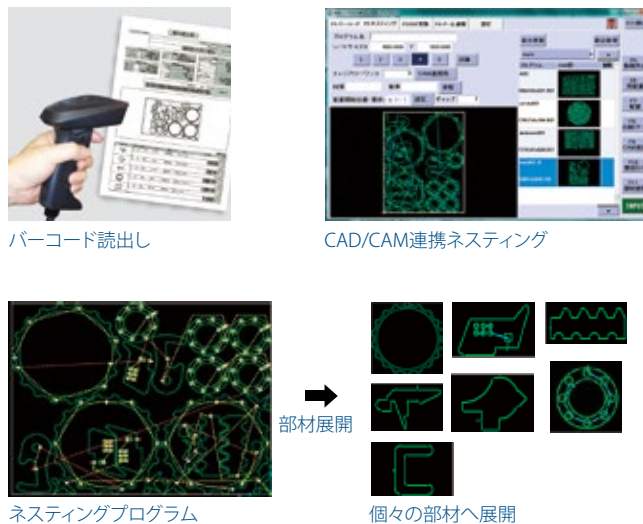
[連携バーコード読出し]

バーコードリーダーで加工指示書のバーコードを読み取ると、指定された場所 (注1) からNCプログラムを加工機の運転エリアに転送して運転サーチします。

(注1)：加工機内のハードディスク、ネットワークドライブ、連携したCAD/CAM/パソコンから選択)

[連携ネスティング] 部材と個数を設定すると、LAN接続されたCAD/CAMで歩留りの良いネスティングプログラムの生成を行ない、加工機に転送して運転サーチします。

[部材展開] ネスティングされたプログラムは構成している個々の部材に展開することができ、追加で加工したい各部材の個数を設定できます。



連携DXF変換

加工現場で入力したDXFファイルから、LAN接続されたCAD/CAMでNCプログラムを生成し、加工機に転送して運転サーチできます。

連携メール通報拡張機能

加工機の稼働状況をメール通知する際、メール送信条件の設定ができます。(送信時間帯、送信するアラームの設定、送信しないアラームの設定、加工完了のメール送信の設定、メール送信先の複数指定)

Laser Processing Systems

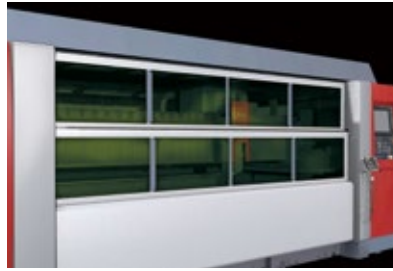
Options

Processing system



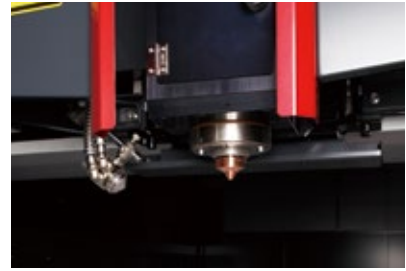
Nozzle changer

These features reduce setup time and support system automation while maximizing productivity.



Additional window

Additional window for front door.



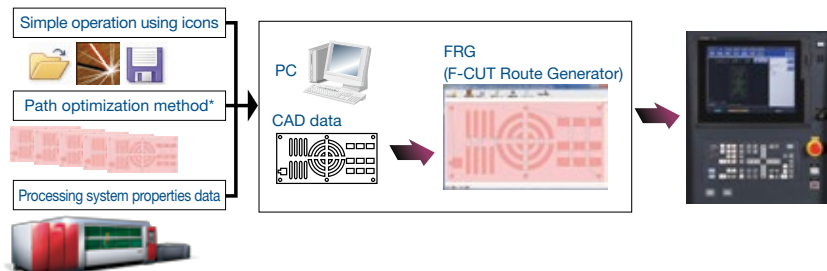
Fine piercing

Reduces spatter adhesion when piercing during stainless-steel processing.



High-Peak Piercing

Reduces piercing time for mild steel processing of t12mm or thicker.



Software FRG (F-CUT Route Generator)

Automatically creates the optimal NC program for F-CUT in a short time.

*Selects the path with the shortest processing time from various processing paths.

Options

Processing system
Nozzle changer
Workpiece lifter
High-Accuracy Positioning Function
X/Y-axis workpiece clamp
Thick Mild Steel Cutting Enhancement Function
High-Peak Piercing
Fine piercing
Additional window
Chip conveyor

Control equipment
Network download function
FRG(F-CUT Route Generator)
Software
Solutions
CamMagic LA (CAD/CAM exclusively for lasers)/Linkage Nesting/ Linkage DXF conversion/Linkage E-mail notification/ RemoteMagic (Alarm notification)/ BANKIN Navigator (Production management support)/ F-CUT Route Generator (FRG)/CamMagic SMOPlus

Specifications/Layout

Processing capability

Model	Material	Assist gas	Thickness (mm)															
			0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	
eX-F40	Mild steel (SS400)	Oxygen	[Bar chart showing capability up to 28mm]															
	Stainless steel (SUS304)	Nitrogen	[Bar chart showing capability up to 22mm]															
	Aluminum alloy (A5052)	Nitrogen	[Bar chart showing capability up to 18mm]															
	Copper (C1100)	Oxygen	[Bar chart showing capability up to 8mm]															
	Brass (C2801)	Nitrogen	[Bar chart showing capability up to 12mm]															

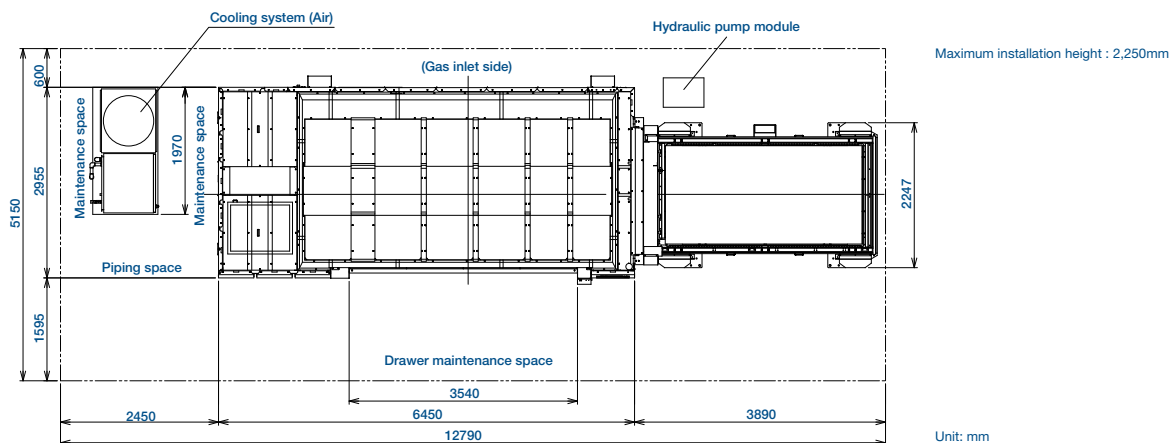
*The above are processing capabilities based on special conditions. The acceptance criteria are as stated in the specifications. * Optional
 *The actual performance/quality may vary depending on the surface condition and deviation in the material composition even if materials are of the same specifications.
 *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 the LS material (steel plate for laser cutting) of Chubu Steel Plate Co., Ltd.

Specifications

Model		ML3015eX-F40
Drive system	Flying optic (3-axis beam movement)	
Control system	X,Y,Z simultaneous 3-axis control (Z-axis height sensing control is possible)	
Processing system		
Workpiece dimensions (mm)	3,050×1,525	
Pallet load weight (kg)	950	
Workpiece support height (mm)	880	
Stroke	X-axis (mm)	3,100
	Y-axis (mm)	1,565
	Z-axis (mm)	150
Rapid feed rate XY-axis (m/min)	Max. 140 (combined)	
Positioning accuracy	XY-axis (m/min)	0.05/500
	Z-axis (mm)	0.1/100
Repeatability XY-axis (mm)	±0.01	
Processing head	Auto-focus preset processing head	

Oscillator	
Rated power (W)	4,000
Cooling system	
Cooling method	Air
	Inverter type
Power consumption	
Processing devices (including oscillator and cooling system)	48kVA
Weight	
Processing machine main body (including oscillator)	Approx. 8,900kg
Pallet changer	Approx. 2,100kg
Cooling system (Air)	Approx. 800kg

Layout



Laser Processing Systems

Laser Cell System

Laser cell system improves productivity. Meets onsite needs.

Automation achieves high productivity, minimum operator intervention and shorter delivery times.

Optimal for continuous processing of thick plates

Pallet changer/Stocking system PCL Series



PCLを動画で
ご覧ください。



- **Easy to operate, improves work efficiency and requires minimum intervention.**
 - Barcode reader simplifies data input.
 - Workpiece supports can be installed to suit the optimum pitch for microjointless cutting.
 - LD/ULD station (option) enables access from three directions.
- **Troubleshooting reduces downtime**
 - Content-rich troubleshooting guides
- **Small size simplifies locating installation space**
 - Ceiling height restriction eased

Model	30PCL-eX-F[6]	30PCL-eX-F[10]	30PCL-eX-F[15]
Applicable laser processing machine	ML3015eX-F40		
Equipment height (mm)	2,920	3,840	5,030
Number of pallets	6	10	15
Material setting position (mm)	715mm above the floor (Free bearing height)		
Fixed table with free bearings	Standard equipment (fixed position)		
Material clamp position	Standard: 2 locations on Y-axis of each pallet (manual)		
Work support intervals	Standard: 75mm (options: 25 and 50mm)		

Optimal for continuous processing of thin and thick plate

Sheet/Pallet changer SCX Series



SCXを動画で
ご覧ください。



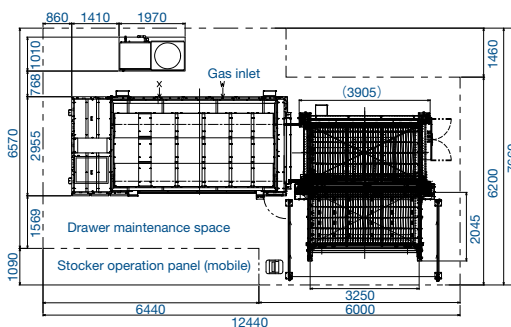
- **Easy to operate, improves work efficiency and requires minimum intervention.**
 - Barcode reader simplifies data input
 - Comes standard with automatic clamps (SC pallet: 2 on Y-axis) and users may choose to increase X-axis clamps
 - LD/ULD station (option) allows access from 3 directions.
- **Troubleshooting reduces downtime**
 - Content-rich troubleshooting guides
- **Requires small floor space**
 - Horizontal 2-pallet changer offers a compact automation system.
- **Small size simplifies locating installation space**
 - Shorter pallet changing time Previous: 110sec ⇒ Approx. 45sec (Reduced 60%)
 - Shorter workpiece preparation Previous: 200sec ⇒ About 150sec (Reduced 25%)
- **Easy role change enables fee work setting**
 - Users can freely allocate different roles to the material/product pallets (M)

Model	30SCX-eX-F[2P4M] <small>Exclusively for changing sheet</small>	30SCX-eX-F[4P4M]	30SCX-eX-F[4P6M]	
Applicable laser processing machine	ML3015eX-F40			
Equipment height (mm)	4,910	5,270	6,040	
Processing pallet (for changing sheets) *Denoted by P	Number of pallets	2		
	Standard sheet size (mm)	914×1,829 (3'×6'), 1,000×2,000, 1,219×1,219 (4'×4')		
	Loadable sheet thickness (mm)	1,219×2,438 (4'×8'), 1,525×3,050 (5'×10')		
	Loadable sheet thickness (mm)	0.8~12		
	Maximum loadable weight (kg)	450 (t12 1,525×3,050)		
	Materials clamp	Standard: 2 on Y axis (automatic)		
Processing pallet (for changing sheets) *Denoted by P	Workpiece support intervals	75mm		
	Number of pallets	-	2	2
	Maximum sheet size (mm)	-	t25 1,525×3,050	-
	Maximum loadable weight (kg)	-	930	-
	Materials setting position (mm)	-	Approx. 715mm above the floor (Free bearing height)	-
	Fixed table with free bearings	-	Standard (fixed position)	-
Materials/ Products pallet *Denoted by M	Materials clamp	Standard : 2 on Y-axis (manual)		
	Workpiece support intervals	Standard : 75mm (options:25 and 50mm)		
	Number of pallets	4	4	6
	Maximum loadable weight (kg)	2,000		
Loadable height (mm)	160 max. (skid height :100)			

Notes:

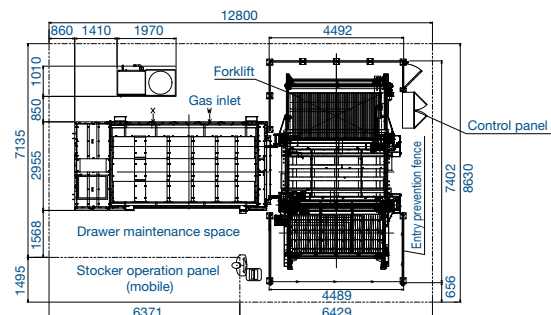
1. Materials that scratch easily such as stainless steel may become scarred when loading/unloading. Please load these materials directly onto the processing pallet.
2. Always make sure to use micro-joints for the sheet changer.

Layout



30PCL-eX-F

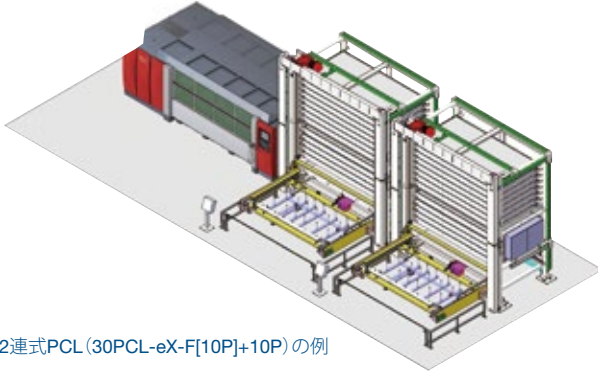
Layout



30SCX-eX-F

さらなる生産性向上を実現するシステム

2連式セルシステム (PCL、SCX対応)



2連式PCL (30PCL-eX-F[10P]+10P) の例

- お客様のニーズへフレキシブルな対応
 - ・PCLシリーズを2連式にすることが可能
 - ・SCXシリーズに材料棚を連結することも可能
- 省スペースで多種類の素材をストック可能 (SCX)
- スケジュール運転を長期連続化
- 外段取りのためにステーションを追加することが可能

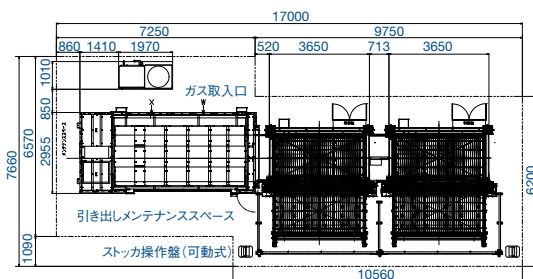
●PCLシリーズの場合

形式	30PCL-eX-F[10P]+10P
仕様	板厚 Max 25mm
	パレット構成 パレットチェンジ用加工パレット 20枚

●SCXシリーズの場合

形式	30SCX-eX-F[4P6M]+12M
仕様	板厚 シートチェンジ部 0.8mm - 12mm パレットチェンジ部 Max 25mm
	パレット構成 素材パレット 12枚、製品パレット 6枚 シートチェンジ加工パレット 2枚 パレットチェンジ加工パレット 2枚
	素材パレット積載重量 2,000kg/枚

配置図



30PCL-eX-F[10P]+10P

自動倉庫システム (コンパクトリバーシステム)

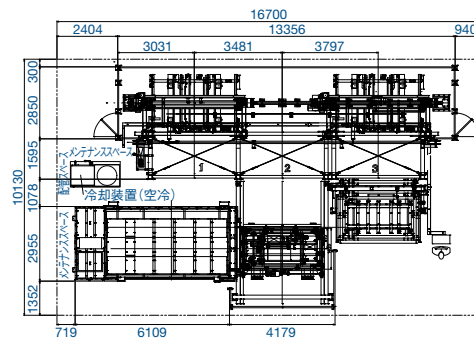


- 将来拡張性のレーザFMS。顧客レイアウトに合せた配置
- レーザ+APCにLULシステム (FSC) 後付け可能
- 将来レーザの更新ができる。レーザ入れ替え可能
- 多品種少量生産だから段取りいらずのFMS運転
- 素材段取り運転。他の加工機の素材段取り

形式	FSC03015eX-F フレキシブルシートチェンジシステム
仕様	シートサイズMax. 5'x10' 最大搬送重量920kg
シートサイズ	Max 1,525x3,050mm Min 914x914mm
板厚	0.8mm - 25mm
材質	SS, SPCC SUS, AL
素材重量	920kg / sheet Max 1,525x3,050x25mm

形式	River Compact510板金コンパクトスタックークレーンシステム
仕様	シートサイズ 5'x10' 積載重量 3,000kg/パレット
総棚数	12段x3列x1行-9-1=26/パレット (スキッド含み積載)

配置図



設置面積 3015FMSの例 15.9mx9.9m 158㎡

生産計画を支援する豊富なソフトウェア

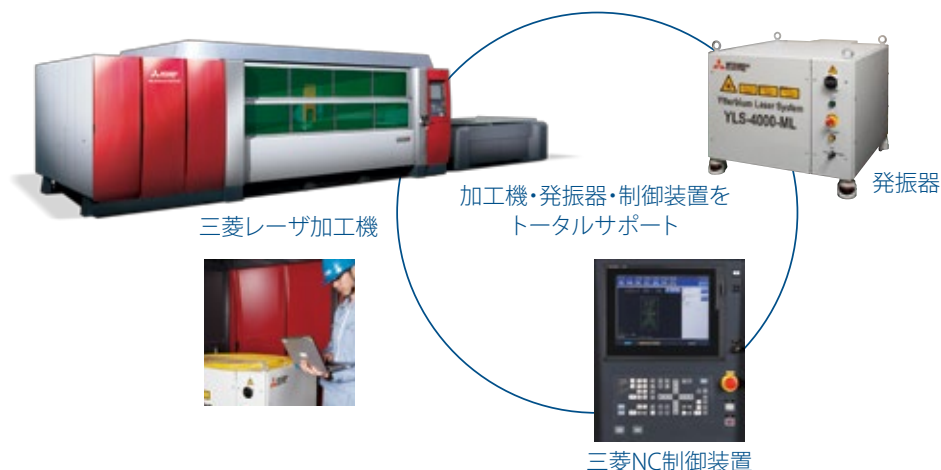
「現場の見える化」のためのBANKIN Navigator、作業日程計画の立案をサポートするApsMagicIIIなど、レーザ加工生産を支援するソフトウェアも充実。詳しくはP14をご覧ください。

仕様などについては、予告なく変更する場合がありますので、事前にお問い合わせください。

Laser Processing Systems

サポートシステム

最新のテクノロジーから、安心のメンテナンスまで、総合メーカーとしてのトータルサポートシステム
総合メーカーならではの安心アフターサービスをご提供いたします。



アフターサービス体制

三菱レーザのアフターサービスは、よりお客様に密着したサービスの提供を図るため、昭和54年に三菱電機株式会社より分離独立した菱電工機エンジニアリング株式会社（略称RKE）が担っています。RKEレーザ事業部では、レーザ加工機専任のカスタマーエンジニアを育成し、システム全体の「迅速に的確な信頼されるサービス」の展開を目指し、努力を続けています。

RKE業務内容

- ・据付調整と操作説明
- ・オンコールによる修理業務
- ・納入後1ヵ月無償点検
- ・消耗・保守部品の販売
- ・電話・FAXIによる技術相談
- ・保守点検
- ・移設工事
- ・メンテナンス契約

レーザサービス拠点



メンテナンス契約(24時間365日お客様サポート)

レーザ加工機を安定かつ安心に稼働させるためには、計画的な点検と消耗品や長期劣化部品の予防交換が必要です。そこで、故障を未然に防ぎ、さらに偶発的な故障時の修理にも対応できる各種メンテナンス契約を提供させていただきます。またメンテナンス契約ユーザー様には限定で、熟練エンジニアがサポートする24時間365日電話受付サービスを実施しております。



レーザ発振器3年保証

レーザ加工機を自社で開発、製造してきた実績と高度なメンテナンス技術を活かし、発振器の保証期間をお引き渡し後3年間対応いたします。

※システム製品も含まれます。

※消耗品(光学部品等)・保守部品の販売、交換工事は除きます。



プレミアムメンテナンスプラン ライト

レーザ加工機の長期安定稼働のために、2年目のメーカー無償点検^{*1}を追加しました。

*1: メーカー点検時に発生した消耗・保守部品は有償となります。1回目は無償点検、2回目は無償加工技術説明の計2回です。無償加工技術説明は無償点検に変更可能です。

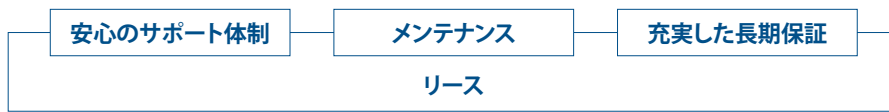
当社従来機プラン

1年目(メーカー保証期間)	2年目~(有償契約点検期間)	
↑ 1ヵ月点検		
1年目(メーカー保証期間)	2年目(メーカー無償点検 ^{*1})	3年目~(有償契約点検期間)

eX-Fシリーズプラン(プレミアムメンテナンスプラン ライト)

三菱ファイバレーザメンテナンスパッケージリース

最先端の三菱レーザ加工機と三菱電機クレジットオリジナルのサービスで
ビジネスの新たな扉を開きます。



Point 1

リース期間限定
最大7年間長期保証

リース期間限定で長期保証する安心のサポート体制。

Point 2

リース期間中の
メンテナンスサービス付

メンテナンスは菱電工機エンジニアリング株式会社が
実施します。

長期保証における具体例

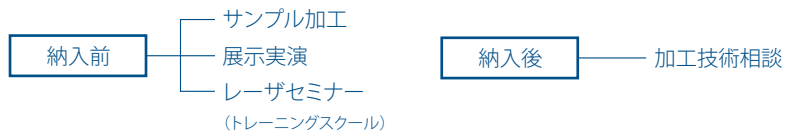
- 突発的に発振器が破損した。 ●ワークからの反射光が発振器に戻って発振器が破損した。
- 加工ヘッドがワークにぶつかって破損した。 ●冷却水が凍結して冷却ポンプが破損した。
- 1次電源に落雷し、電源電圧が上昇し、NC装置が故障した。

※消耗品や摩耗・老朽化による故障は保証の対象にはなりません。

FCC・メカトロソリューションセンター

三菱電機ではお客様のお近くでサポートできるよう、
名古屋製作所内FCC (FAコミュニケーションセンター)
の他に、東日本メカトロソリューションセンター、
西日本メカトロソリューションセンターを設置し、お客様
のニーズにお応えしております。

業務内容



FAコミュニケーションセンター (FCC) (名古屋製作所内)

- 交通機関
- ・JR中央線:大曾根駅(南口)下車 徒歩10分
- ・地下鉄名城線:大曾根駅下車 徒歩10分
- ・名鉄瀬戸線:大曾根駅下車 徒歩10分
- 業務時間 毎週月曜～金曜(祝日は除きます) AM9:00～PM5:00
- 所在地 〒461-8670 名古屋市東区矢田南5-1-14
- 電話 (052) 721-2501 FAX (052) 711-3796



東日本メカトロソリューションセンター

- 交通機関
- ・JR埼京線、武蔵野線:武蔵浦和駅下車 西口改札 徒歩6分
- 業務時間:毎週月曜～金曜(祝日は除きます) AM9:00～PM5:30
- 所在地 〒336-0027 さいたま市南区沼影1-18-6
- 電話 (048) 710-5750 FAX (048) 710-5625



西日本メカトロソリューションセンター

- 交通機関
- ・JR東海道線(神戸線):尼崎駅下車 徒歩5分
- 業務時間:毎週月曜～金曜(祝日は除きます) AM9:00～PM5:30
- 所在地 〒660-0807 尼崎市長洲西通1-26-1
- 電話 (06) 4868-8656 FAX (06) 4868-8762

Overseas Support

Service bases are established around the world to provide customer support.



Americas



AMERICA
 MC Machinery Systems, Inc.
 1500 Michael Drive Suite C Wood Dale, Illinois 60191, U.S.A.
 対応言語 English/Japanese
 TEL (sales) 1-630-616-5920 EDM
 1-630-616-2970 Laser
 (service) 1-630-860-9816 EDM
 1-630-616-5900 Laser
 1-630-616-2965 Laser
 HP <http://www.mcmachinery.com/>



BRAZIL
 MC Machinery Systems do Brasil Ltda
 Rua Amápa, 191-Vila Invernada Sao Paulo 03191-160, Brazil
 対応言語 English/Portuguese/Japanese
 TEL 55-11-2966-3600 FAX 55-11-2966-3620
 HP <http://www.mcmachinery.com.br/>

Asia



KOREA
 MITSUBISHI ELECTRIC AUTOMATION KOREA CO.,LTD.
 1480-6, Gayang-dong, Gangseo-gu, Seoul 157-200, Korea
 対応言語 Korean/Japanese
 TEL 82-2-3660-9574 EDM Laser Laser-Drilling
 FAX 82-2-3663-0475
 HP <http://www.mitsubishi-automation.co.kr/>

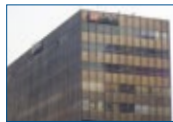


TAIWAN
 SHIN WU MACHINERY TRADING CO.,LTD.
 No.122, WU-KUNG 2ND, ROAD, WU KU DIST., NEW TAPEI CITY, TAIWAN, R.O.C.
 対応言語 Chinese/English
 TEL 886-2-2299-2355 EDM Laser Laser-Drilling
 FAX 886-2-2299-0288
 HP <http://www.shinwu.com.tw/>



SINGAPORE
 MITSUBISHI ELECTRIC ASIA PTE, LTD.
 307 Alexandra Road, Mitsubishi Electric Building, Singapore 159 943
 対応言語 Chinese/English
 TEL 65-6473-2308 EDM Laser
 FAX 65-6476-7439
 HP <http://www.mitsubishielectric.com.sg/>

Asia



INDONESIA
 PT. MITSUBISHI ELECTRIC INDONESIA
 Gedung Jaya 11th Floor, JL. M.H. Thamrin No.12, Jakarta Pusat 10 340, Indonesia
 対応言語 Indonesian/English
 TEL 62-21-3192-6461 EDM Laser
 FAX 62-213-1923-942



THAILAND
 MITSUBISHI ELECTRIC AUTOMATION (THAILAND) CO.,LTD.
 Bang-Chan Industrial Estate No.111 Soi Serithai 54, T.Kannayao, A.Kannayao, Bangkok 10230, Thailand
 対応言語 Thai/English/Japanese
 TEL 66-2-517-1326 EDM Laser Laser-Drilling
 FAX 66-2-919-8717
 HP <http://www.meath-co.com/>

China



CHINA
 MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD.
 No.1386 Hongqiao Road, Mitsubishi Electric Automation Center, S hanghai, China
 対応言語 Chinese/Japanese
 TEL 86-21-2322-3030 EDM Laser Laser-Drilling
 FAX 86-21-2322-3000
 HP <http://www.meach.com>

Europe



GERMANY
 MITSUBISHI ELECTRIC EUROPE B.V. - German Branch
 Carl-Hausch-Strasse 8, D-40880 Ratingen, Germany
 対応言語 German/English
 TEL 49-2102-486-0 EDM Laser
 49-1801-486-600 (Free Dial) Laser-Drilling
 FAX 49-2102-486-6630
 HP <http://www.mitsubishi-edm.de/>
 ヨーロッパ全域、中東およびアジアの一部地域に対応します。詳細はお問い合わせ下さい。

India



INDIA
 MC Craftsman Machinery Pvt. Ltd.
 124, Sangothipalayam Road, Arasur Post, Coimbatore - 641 407 India
 対応言語 English
 TEL 91-422-6472741 EDM Laser
 HP <http://www.mccm.in/>

Notes: Machine models may differ according to country and region. Please contact a Mitsubishi Electric representative for details. Please contact a Japanese Mitsubishi Electric representative if overseas is needed in advanced for indirect export.

EDM : Electrical Discharge Machines
 Laser : Laser Processing Machines
 Laser-Drilling : Laser Drilling Machines

Engineers answer technical questions covering everything from machining to training and after-sale service.



Application

Application engineers are available to help optimize your machining processes through technical consultations via telephone, e-mail or fax.



Show room

Industrial mechatronics products of Mitsubishi Electric such as laser processors and EDMs are exhibited. Veteran engineers welcome visitors and explain the benefits of our products.



After-sales service

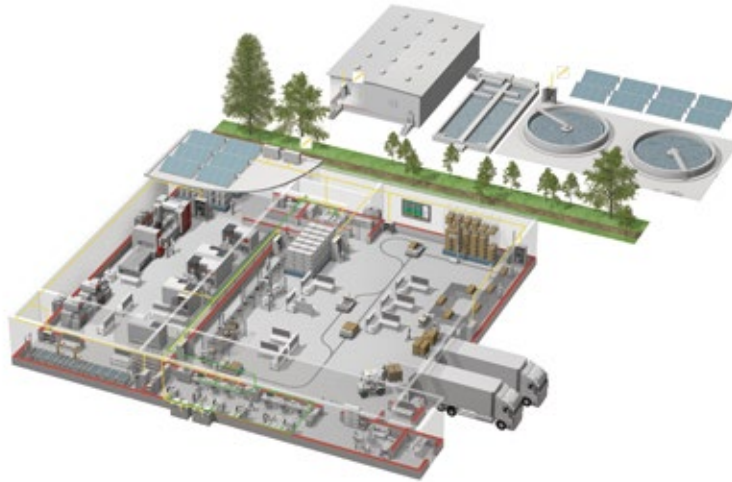
We provide after-sales service for machine repair and adjustment by an experienced staff, including OEM replacement and accessory parts.



Training

We provide laser trainings from basic operation to advanced programming and setup in support of all levels of laser operators.

YOUR SOLUTION PARTNER



Mitsubishi Electric is supplying wide ranging automation equipment from graphic operation terminal and programmable logic controller through CNC and electric discharge machine.

Brand of trust

Our brand name “Mitsubishi” has been used as part of approximately the 45 corporation names in the financial, commercial and industrial areas. At present, “Mitsubishi” is globally renowned as a symbol of high quality. Mitsubishi Electric Corporation is engaged in the business sectors of space development, transportation, semi-conductor, energy system, information and communication processing, audio visual device, home appliance, construction, energy management and automation system with our 237 factories and laboratories over 121 countries.

What is the reason why Mitsubishi Electric automation solution is reliable? Since we check our products by using them for the first time at our factories, they are undeniably highly credible, efficient and easy-to-use automation systems.

Mitsubishi Electric as one of the world’s leading corporations, boasting of its sales volume of 4 trillion yen (exceeding 40 billion dollars) and employing over 100 thousand staff, not only provides the best product but also the top-level service and support to our customers.



Low-voltage circuit breaker, Magnetic motor starter



High-voltage circuit breaker, High-voltage magnetic contactor



Energy-saving support device, Energy monitoring module



Programmable logic controller (PLC), Graphic operation terminal (HMI)



AC servo, Three-phase motor, IPM motor, Inverter, Geared motor



Numerical controller (CNC)



Industrial robot



Electric discharge machine, Laser processing machine, Electron beam machine



Transformer for power distribution



Pressurized ventilation fan, Uninterruptible power supply (UPS)

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
NAGOYA WORKS: 1-14, YADA-MINAMI, 5-CHOME, HIGASHI-KU, NAGOYA 461-8670, JAPAN

-
- * Not all the models are supported in all the countries and regions.
 - * The machine specifications differ according to the countries and regions. Please check with your dealer.
 - * The processing data provided in this brochure is for reference only.