



FORZA

4 PRO

V250828

Datasheet
Model F4XXPXX



FORZA 4 PRO

CO2 laser cutting and engraving machine

CUTTING / MARKING / PERFORATION

The FORZA 4 PRO, in its 60W and 80W versions, is a laser cutting and engraving machine designed to excel in industrial environments that demand continuous production, maximum precision, and adaptability.

Designed to work on a wide range of non-metallic materials, it combines high-precision technology with reliable performance, capable of maintaining consistent results even during intensive use.

Main Features

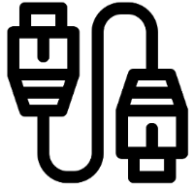
FEATURES	DETAIL
Application	Cutting/Engraving on non-metallic materials
Nominal working area	1.97ft x 1.31ft 600mm x 400mm
Laser power rating	60W – 80W
Maximum cutting thickness in MDF ⁽¹⁾	1/4in 6mm
	15/32in 9mm
Energy consumption	800W – 930W
Bed type	Honeycomb
Maximum XY translation speed	X: 3.3ft/s 1000mm/s
	Y: 1.6ft/s 500mm/s
Cutting precision ⁽²⁾	± 0.1mm

1. This is the maximum limit at which a burr-free and clean cut can be obtained. Up to this thickness, cutting can be performed continuously.
2. Cutting precision is measured on a 1/32in (0.7mm) stainless steel sheet, considering the machine's repeatability and accuracy. A precision of 0.1mm means that when cutting a 3.937in (100.0mm) plate, the actual measurement may be 3.94in(100.1mm) or 3.933in(99.9mm). If the material thickness increases, the error may become greater due to material properties and cut width.



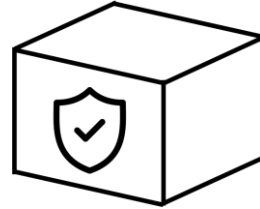
Special Features

Automatic Feeding



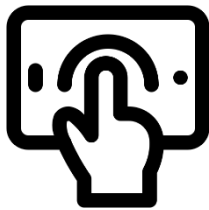
It allows different types of connection, either via USB cable, Ethernet, or as an additional upgrade via Wi-Fi. This makes it easy and simple to load designs compatible with the controller.

Protection cover



It includes a protective cover for laser cutting. This ensures safety in the environment and prevents contamination from the smoke produced by the cutting process.

HMI Touch Screen



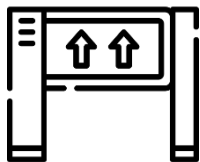
It has a built-in touch screen as a control interface between the user and the machine. The control is intuitive and user-friendly.

Anti-vibration mechanism



The machine's longest axis of movement (Y axis) uses a rack mechanism, which allows for smooth motion transmission without vibration for optimal and precise work.

Lifting system



The machine has a bed lifting system that allows its height to be adjusted vertically to optimize material positioning and improve work quality.

Included air pump



It incorporates a low-vibration, low-noise pump with high airflow to efficiently remove chips generated during production and provide a better finish.

General Specifications

SPECIFICATION	DETAIL
Model	FORZA 4 PRO F4XXPXX
Laser Type/Technology	Co2 Laser 10.6nm
Nominal fiber laser power	60W - 80W
Fiber laser power range	1 a 100%
Output power stability	± 10%
Laser working frequency	4 a 5000Hz
Laser source protection level	IP54
Laser source model	MYJG 60W – ZYE Laser MYJG 80W – ZYE Laser
CO2 gas excitation type	Sealed glass tube
Working modes	CUTTING / MARKING / PERFORATION
Focusing system	Focus by lens
Support gases for laser cutting	Air (Integrated pump)
Mechanical protection system	Limit switch detectors
Cutting precision ⁽¹⁾	±0.1mm
XY motion repeatability	±0.01mm
XY motion accuracy	±0.01mm
Nominal working range	1.97ft x 1.31ft 600mm x 400mm
Z displacement	9.1in 230mm

1. Cutting accuracy considers the machine's repeatability and accuracy. A 0.1 mm accuracy means that when cutting a 100.0 mm plate, it can measure either 100.1 mm or 99.9 mm. As the material thickness increases, the error can be greater due to the nature of the materials and the width of the cut.

XY axis motion system	Rack and Pinion
Z axis motion system	Worm screw drive
Drive mechanism	Servo motors
Smoke protection system	Enclosed camera
Smoke extraction system	External motors
Laser source power	0.6kW
Cooler power rating	0.6kW
Fume extractor power rating	0.55kW
Air pump power rating	0.04kW
Motion and control system power	0.1kW
Peak machine power	1.9kW
Minimum power for electrical system design ⁽²⁾	1.55kW
Average energy consumption ⁽³⁾	930Wh
Operating voltage	Single-phase 110 - 120V 50Hz-60Hz
Line current	15.7A @ 110VAC 1ph
	14.4A @ 120VAC 1ph

2. The minimum power requirement for electrical sizing is calculated based on the typical power ratings of the laser source and the chiller, plus half the power of the fume extractor and the machine's actuators.
3. The average consumption is estimated at 60% of the peak consumption, as not all components remain powered during operation. The on/off cycles of systems such as the chiller and the laser source reduce this value. For calculating hourly electrical consumption, use the average consumption figure.

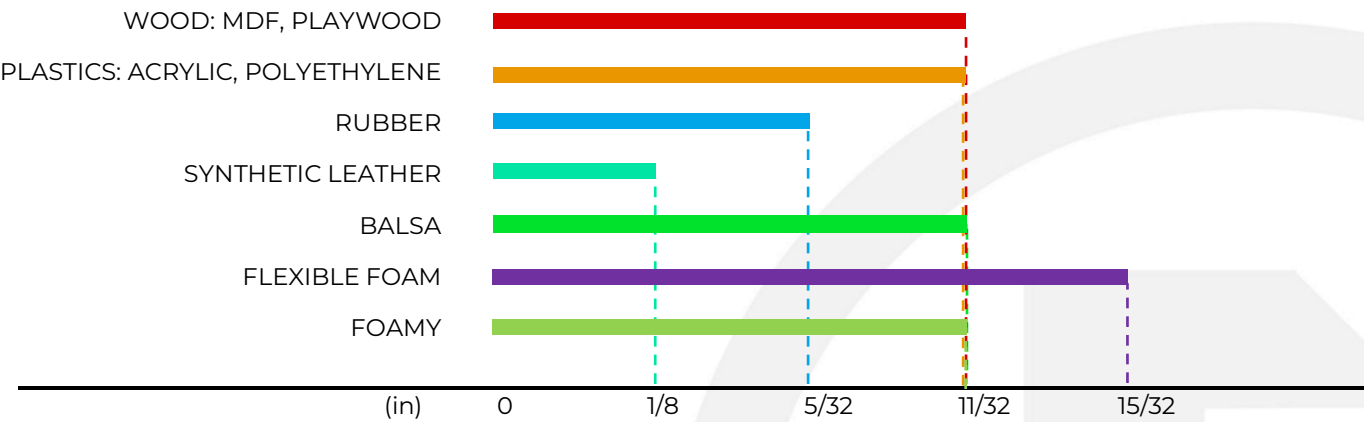
Conductor wire gauge to the thermal-magnetic circuit breaker (MCCB) ⁽⁴⁾	Up to 140°F 60°C (TW, UF)	Up to 194°F 90°C (THHW, THHN)	Voltage
	3 x 12AWG	3 x 14AWG	120VAC 1ph
Recommended MCCB and grounding conductor	MCCB	PE Conductor (Copper)	Voltage
	20A	12AWG	120VAC 1ph
Required Voltage Regulator ⁽⁵⁾	5000 VA		
Controller	RUIDA RDC		
Communication Type	USB, ETHERNET, WIFI (optional)		
Compatible Design Formats	DSP, PLT, BMP, DXF, AI		
Control Interface	HMI touchscreen		
PC Operating Software ⁽⁶⁾	RDworks		
Software Language	English and Spanish		
PC Control Interface	Via touchscreen and manual control		
Cooling Method	Water-cooled		
Chiller Tank Capacity	2.4gal 9L		
Airflow Delivered by Pump	7.93 gal/min 30 L/min		
Equipment Weight	0.147ton 147kg		
Shipping Weight	0.162ton 162kg		
Equipment Dimensions	2.7ft x 4.66ft x 3.1ft 820mm x 1420mm x 940mm		
Shipping Dimensions	2.8ft x 4.7ft x 3.1ft 840mm x 1440mm x 940mm		
Relative Humidity	< 90%		
Operating Ambient Temperature	20 - 28 °C		
Storage Temperature	10 - 40 °C		
Certifications	CE, RoHS, FCC		

4. Cable gauge sizing was determined based on Table 310-15(b)(16) of the NOM-001-SEDE standard, for maximum conductor temperatures of 60 °C and 90 °C, respectively, assuming conduit installation. For open-air cable installation, a smaller gauge than the one specified in this document may be used, subject to prior consultation with the FORZA Laser technical department.
5. For equipment installation, it must be connected to a voltage regulator of at least 5000 VA. This regulator is not included with the machine.
6. An additional computer (not included with the machine) is required to install the necessary software for operating the equipment.

Applicable Materials

CUTTING AND ENGRAVING MATERIALS		ENGRAVING MATERIALS	
Wood	Balsa	Anodized Aluminum	Granite
Acrylic	Flexible Foam	Stone	Bone
Polyethylene	Foamy	Marble	Bamboo
Rubber	Fabric	Glass	Wood
Synthetic Leather	Paper	Plastics	Tagua

Cutting Thicknesses by Material



MATERIAL	NOMINAL THICKNESS 60W		NOMINAL THICKNESS 80W	
	in	mm	in	mm
Wood: mdf, playwood	1/4	6	11/32	9
Plastics: acrylic, polyethylene	1/4	6	11/32	9
Rubber	1/8	3	5/32	4
Synthetic leather	5/64	2	1/8	3
Balsa	1/4	6	11/32	9
Flexible foam	3/8	10	15/32	12
Foamy	1/4	6	11/32	9
Fabric: Polyester, Nylon, Cotton	Various thicknesses		Various thicknesses	
Paper	Various thicknesses		Various thicknesses	

NOTA: The machine must not be used with materials that emit harmful gases to health or that may damage the machine. For example: PVC, fiberglass, resins, polycarbonate, epoxy, ABS.

Packing List:

- 1 x FORZA 4 PRO machine 60W – 80W 
- 1 x Assembly Kit for Cable Trays and Rails 
- 1 x Laser Safety Glasses with Case 
- 2 x Waste collection cart set 
- 6 x Machine leveling feet 
- 1 x HMI touchscreen display 
- 1 x FORZA welcome sign 

- TOOLBOX -

- 1 x Plastic Tool Box 
- 2 x 6" Clamps 
- 1 x Masking Tape 
- 1 x Metric Allen Key Set 
- 1 x Plastic Funnel 
- 1 x Fabric Cleaning Cloth 
- 1 x Pack of Lens Cleaning Wipes 
- 1 x Lens Removal Tools 

- CONSUMABLES -

- 1 x CO2 Laser lens set 

- PERIPHERALS -

- 1 x Automatic Cooler (Chiller) 
- 3 x Industrial Fume Extractors 550W 
- 1 x Automatic Feeding System 

- LICENSES -

- 1 x Software License
- 1 x **FORZA Vectors** license - 1 year
- 1 x **FORZA Academy** full license - 1 year
- 1 x **Super 7 SUPPORT** license - 4 years

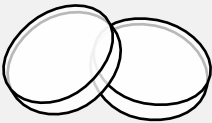
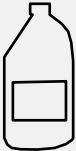
- POWER CABLES AND TRAYS -

- 1 x Gas Extraction Tube/Hose 2m x 6" 
- 1 x FORZA 4 PRO Power Cable 
- 1 x USB to USB Cable 
- 1 x Ethernet Network Cable 
- 2 x PU Hoses for CO2 Tube Cooling 

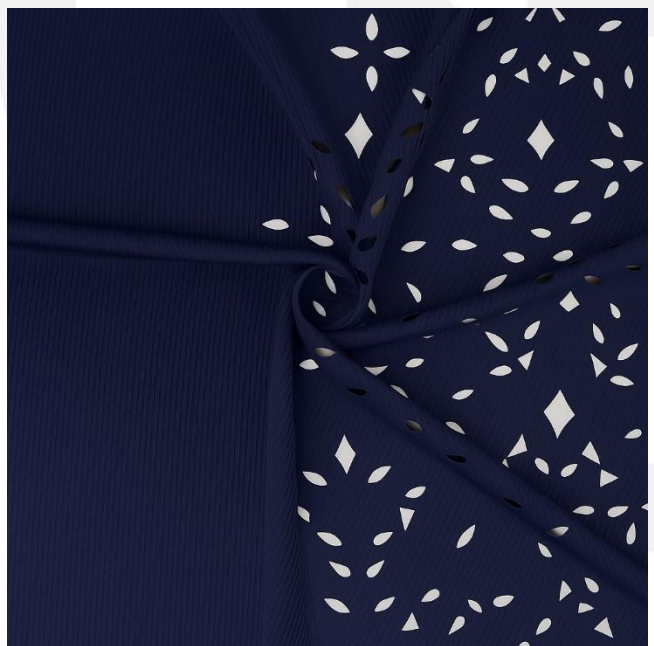
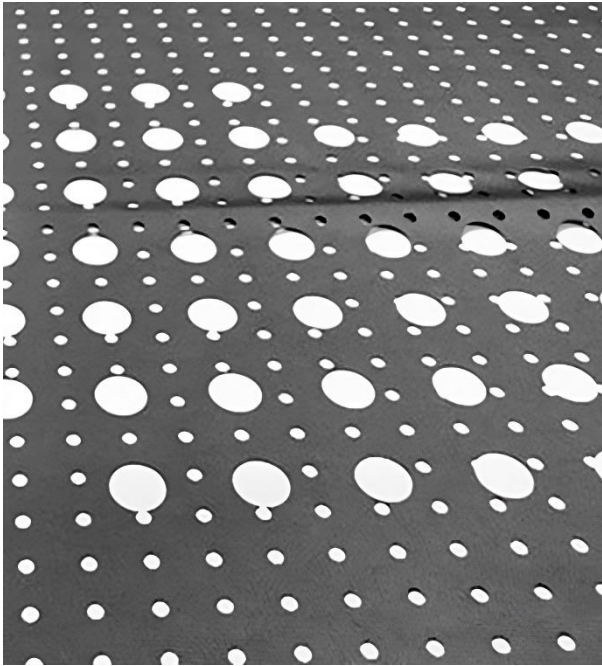
* The reference cables are coated with TW type insulation

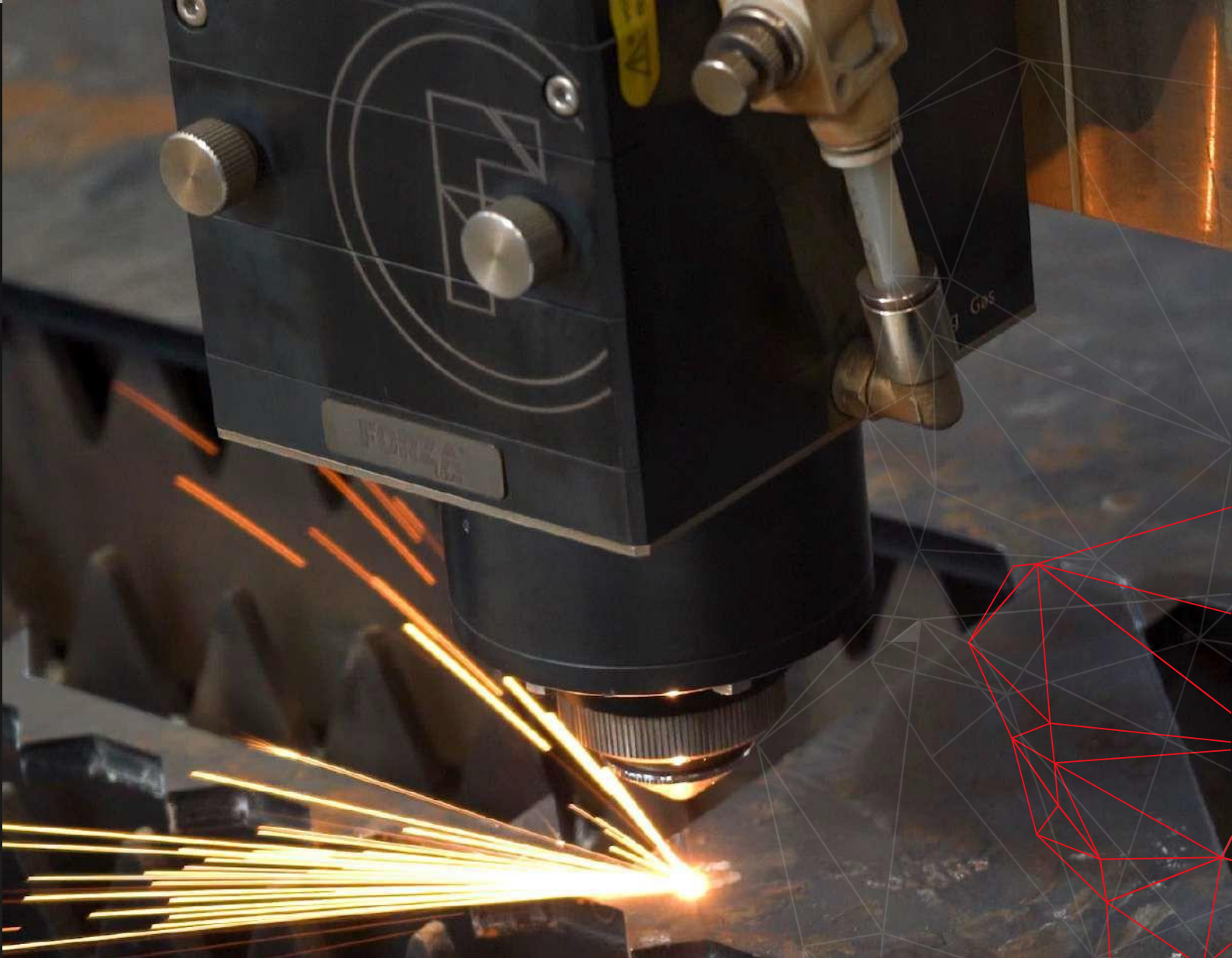
Transport symbols:  (Package),  (Inside the package),  (Installed on the machine).

Consumables:

IMAGE	ITEM	MODEL	DIMENTIONS	LIFETIME
	CO2 Laser lens	CO-LDXXFXXX	Diameter (D) and Focal Length (F) vary by model	200 hours
	Distilled water	XXXX	2.4gal / 9L	2 months
	Blue grease for pinions	XXXX	Lithium grease	6.21 miles 10 000 meters

Manufactured Parts:





At FORZA Laser, laser specialists, our team has everything you need to take your business to the next level.

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