



FORZA

Ranger

V250226

Datasheet
Model N1530P15



FORZA

Ranger

Industrial CNC laser cutting machine for metal plates

Cutting / Marking / Perforation

The FORZA Ranger laser cutter represents the latest generation of our mixed line of metal plates machinery with all the upgrades requested by our customers from previous models.

With enhanced cutting speed, acceleration, and robustness, it is capable of processing full-sizes 5ftx10ft (1500mmx3000mm) plates up to 3/4in (19mm).

Main Features

FEATURES	DETAIL
Application	Plates cutting
Nominal working area	1500mm x 3000mm 4.9ft x 9.8ft
Total plate workspace	1525mm x 3050mm 5ft x 10ft
Laser power rating	1500W
Nominal cutting thickness (ASTM A36) ⁽¹⁾	10mm 3/8in
Maximum cutting limit (ASTM A36) ⁽²⁾	13mm 1/2in
Maximum acceleration	1.0G 32.0ft/s ²
Maximum XY travel speed	100 m/min 5.5 ft/s
Cutting precision ⁽³⁾	± 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. It is not recommended to size the machine with this power if the intention is to work permanently with thicknesses exceeding the nominal limit. As the thickness increases beyond the nominal value, the cut may exhibit more pronounced lines and possible burrs. Additionally, piercing may become unstable at maximum thicknesses, requiring meticulous operator control.
3. Cutting precision is measured on a 0.7mm stainless steel sheet, considering the machine's repeatability and accuracy. A precision of 0.1mm means that when cutting a 100.0mm plate, the actual measurement may be 100.1mm or 99.9mm. If the material thickness increases, the error may become greater due to material properties and cut width.



Special Features

Smart Focus Technology



Automatic laser head adjustment for working on uneven surfaces. The head maintains a constant distance, even if the plate is warped.

Marking Technology



It is not only for cutting; it also features a marking function, making it ideal for engraving lines, numbers, and letters for post-processing applications.

Gravity Cut



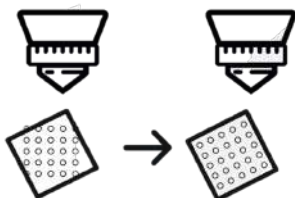
You can save up to 60% of time when cutting rectangular and circular patterns by taking advantage of the movement inertia.

FORZA Play software



Specialized Spanish and English software for cutting, user-friendly, with anti-collision alarm system and maintenance notices

Find edge system.



Automatically detects the edges to position the drawings along the contours and optimizes material usage, which can reduce waste by up to 40%.

Automatic Gas Control



The machine automatically exchanges and selects the gas it needs to cut depending on the material, whether oxygen or nitrogen.

General Specifications

SPECIFICATION	DETAIL
Model	FORZA Ranger – N1530P15
Laser Type/Technology	Fiber Laser 1064nm ± 30nm
Laser beam diameter in the QBH	20um
Nominal power of Fiber laser	1500W
Fiber laser working power range	5 a 100% (±0.5%)
Output Power Stability	± 1.5W
Laser working frequency	4 a 5000Hz
Source protection level	IP54
Laser Source Model	MFSC-1500W Max Photonics
Working Modes	CUTTING / MARKING /PERFORATION
Focusing system	SMART FOCUS TECHNOLOGY ⁽¹⁾
Auxiliar gas type for cutting	O2, N2 or Air
Proportional oxygen control	Analog control 10 bar 145 psi (Airtac)
Laser head model	OSPRI - LC40
Focus range	-10mm ~ +10mm -0.4in ~ +0.4in
Max focusing speed	100mm/s 3.9in/s
Protection system	Prevention and detection of impacts
Pre-loaded cutting profiles	Yes ⁽²⁾
Laser cutting width	0.1mm ~ 1.5mm 0.004in ~ +0.06in ⁽³⁾

1. The focusing system incorporates an internal servo motor that moves the lens, along with a capacitive sensor that maintains the distance between the laser head and the plate during cutting.
2. Cutting parameters are available on the library.forzalaser.com platform, where customers can download them for free. A local backup is also stored on the machine for quick access.
3. The cutting width is directly proportional to the material thickness; as thickness increases, so does the cutting width. The type of assist gas also plays a role, with oxygen producing a wider cut line.
4. Cutting precision is 0.1mm for thicknesses up to 0.7mm. As material thickness increases, precision may be affected due to the widening of the cut line, reaching up to 0.5mm on 1/2-inch plates

Cutting precision	Thickness - dependent ⁽⁴⁾
Cutting angle	<2° ⁽⁵⁾
Repeatability	±0.05mm
Motion Accuracy	±0.02mm
Nominal working area	1500mm x 3000mm 4.9ft x 9.8ft
Total plate space per unit	1525 mm x 3050mm 5ftx10ft
Max Z axis travel	80 mm 3.15in
Max cutting speed	30 m/min 1.64ft/s
Max travel speed	100 m/min 5.5ft/s
Max XY acceleration	1.0G 32.0ft/s²
XY motion system	Rack / Pinion
Z motion system	Screwball
Servo motor power (XYZ)	X: 750W
	Yx2: 850W
	Z: 400W
Servo motor brand	Innovance
Lubrication system	Automatic by working path
Wireless Control	WiFi remote controller
Fume Extraction System	External exhaust fan
Max plate load capacity	700kg 1543lb ⁽⁶⁾

5. *The cut angle depends on the thickness material and the type of assist gas used. Thicker materials can result in greater cut angles, and oxygen may increase the cut angle.*
6. *The maximum plate weight is for a full 5ft x 10ft, 3/4-inch ASTM A36 steel plate, which must be evenly distributed*
7. *The minimum power sizing for electrical configuration is calculated based on typical power consumption of the laser source and chiller, along with half the power of the fume extractor and machine actuators.*

Laser source power	5.5 kW		
Chiller power	2.7 kW		
Fume Extractor Power	1.5 kW		
Motion & control system power	5 kW		
Peak machine power	14.7 kW		
Minimum required power ⁽⁷⁾	11.45 kW		
Average energy consumption ⁽⁸⁾	6.87 kWh		
Operating voltage	Single phase: 220V (50-60Hz)		
	3 phase: 220/250/380/440/480V (50-60Hz)		
Minimum line current	57.8A @ 220VAC 1ph		
	33.4A @ 220VAC 3ph		
	29.4A @ 250VAC 3ph		
	19.3A @ 380VAC 3ph		
	16.7A @ 440VAC 3ph		
	15.3A @ 480VAC 3ph		
Required cable gauge for breaker panel. ⁽⁹⁾	Up to 60°C 140°F (TW,UF)	Up to 90°C 194°F (THHW,THHNF)	Voltage
	2 x 4AWG	2 x 6AWG	220VAC 1ph
	3 x 8AWG	3 x 10AWG	220VAC 3ph
	3 x 10AWG	3 x 12AWG	250VAC 3ph
	3 x 12AWG	3 x 14AWG	380VAC 3ph
	3 x 12AWG	3 x 16AWG	440VAC 3ph
	3 x 12AWG	3 x 16AWG	480VAC 3ph
	+1 x 10AWG Ground		
Recommended machine breaker	60A @ 220VAC 1ph		
	35A @ 220VAC 3ph		
	30A @ 250VAC 3ph		
	20A @ 380VAC 3ph		
	20A @ 440VAC 3ph		
	20A @ 480VAC 3ph		

8. Average power consumption is estimated at 60% of the measured power. Not all components operate simultaneously; the intermittent activation of systems such as the chiller, motors, and laser source results in lower actual consumption

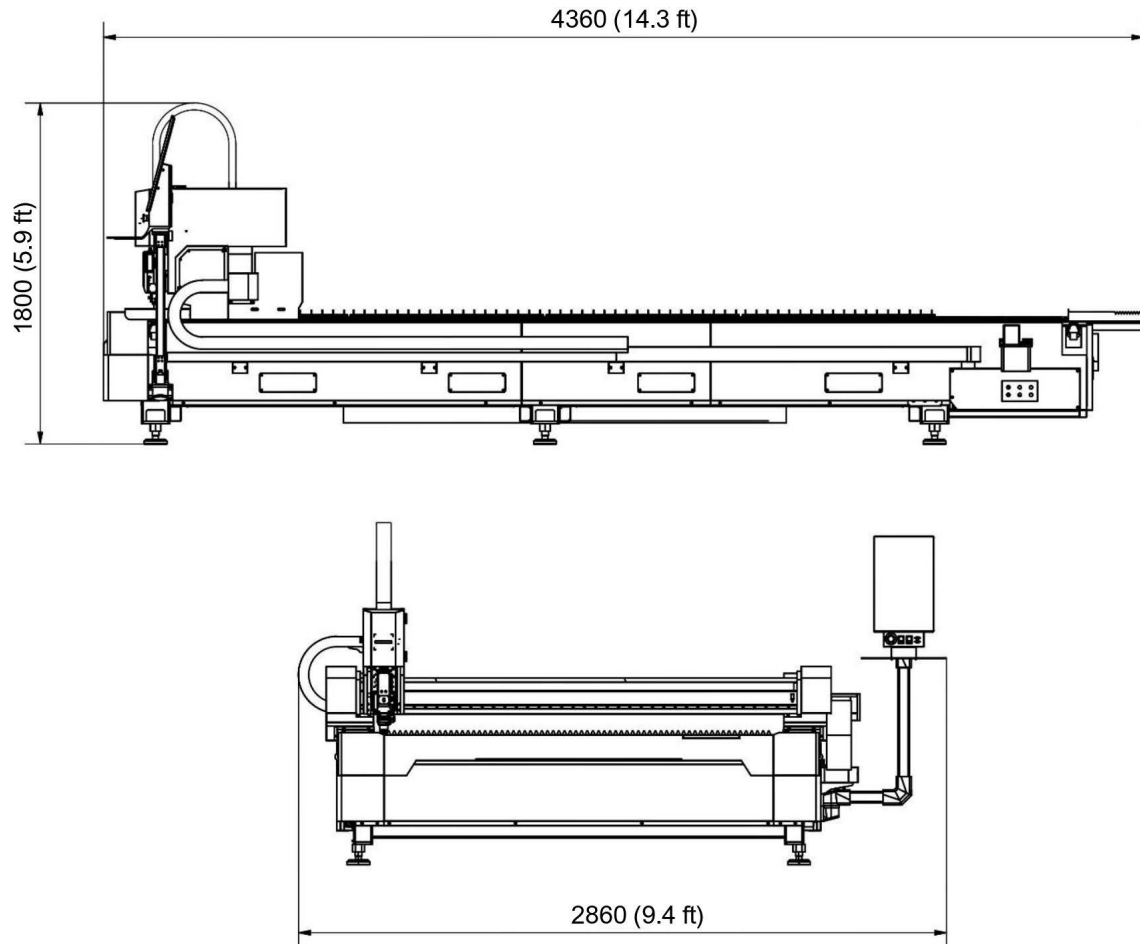
9. The cable gauge sizing was done based on NEC 310-16 for maximum conductor temperatures of 60°C and 90°C, considering conduit installation. If installing cables exposed to open air, a smaller gauge may be used upon consultation with FORZA Laser's technical department.

Power cable length ⁽¹⁰⁾	10 m 32.8ft
Air supply for rotor	6bar 87psi
Communication interface	RJ45, WIFI, USB 3.0
Compatible design formats	AI, DXF, PLT, LXD, G
Software	FORZA PLAY
Software Language	Spanish and English
PC control interface	By screen and by manual control
Cooling method	Water-cooled
Chiller tank capacity	13L 3.5gal
Gas connection diameter	8mm O2 and 8mm N2 hose (Nylon)
Max gas pressure at laser head	25bar 362.6psi
Max air/N2 input pressure	20bar 290psi
Max O2 input pressure	10bar 145psi
Recommended N2 input pressure	≤16bar 232psi
Recommended O2 input pressure	6bar 87psi ⁽¹¹⁾
Nat machine weight	1590kg 3505lb
Gross machine weight	1690kg 3726lb
Machine dimensions	4360 x 2860 x 1800 mm 14.3 x 9.4 x 6.9 ft
Machine dimensions for transport	4245 x 2320 x 1250mm 13.9 x 8 x 4.1 ft
Resistance floor resistance	6.5 Kg/cm2 92.5 lbf/in2
Relative humidity	< 85%
Working temperature	2 – 35°C 35.6 – 95°F
Storage temperature	8 – 30°C 46.4 – 86°F
Certifications	CE, RoHS

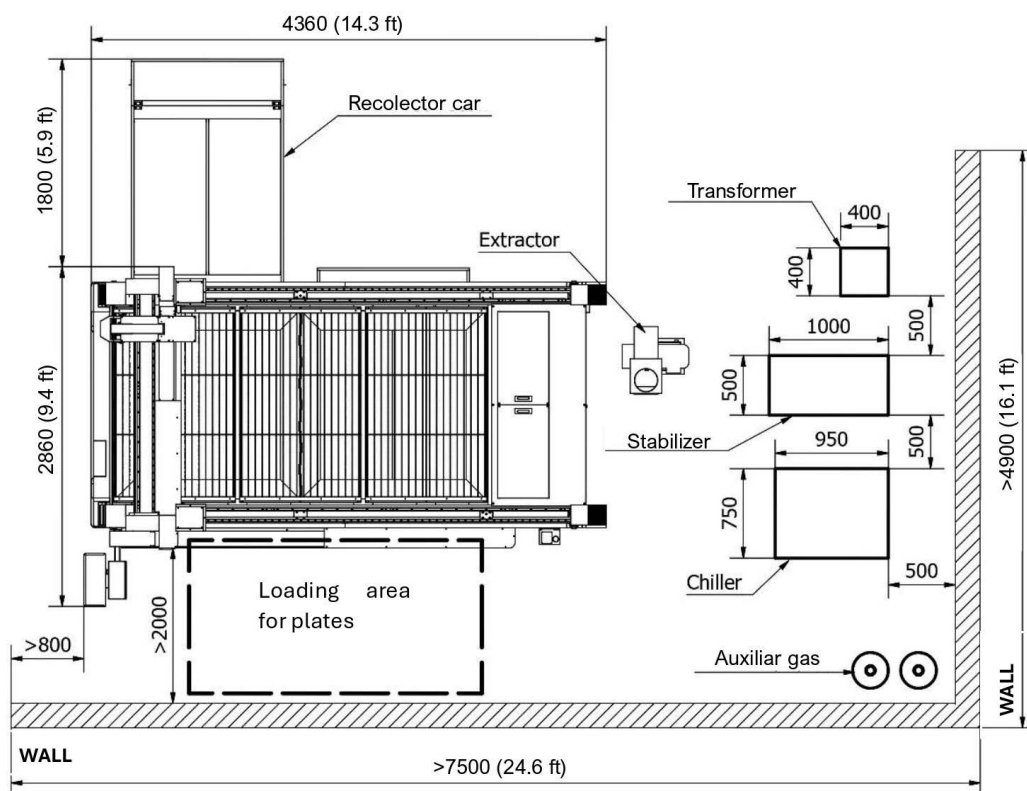
10. The power cable length is measured from the breaker to the transformer.

11. The specified pressure is measured at the tank gauge output; from this pressure, the valves are calibrated

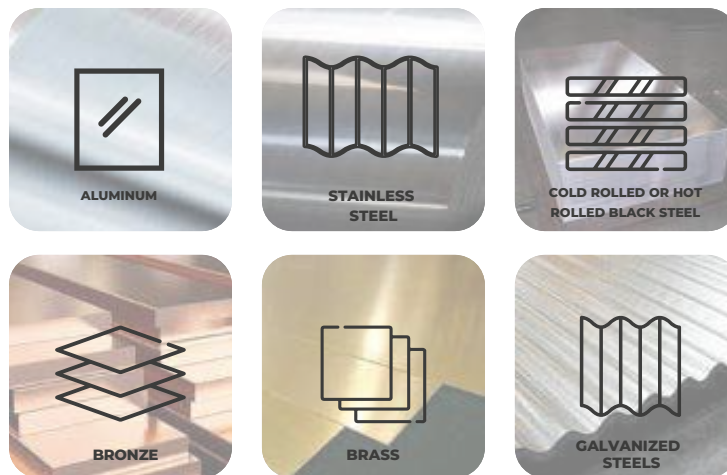
Machine dimensions



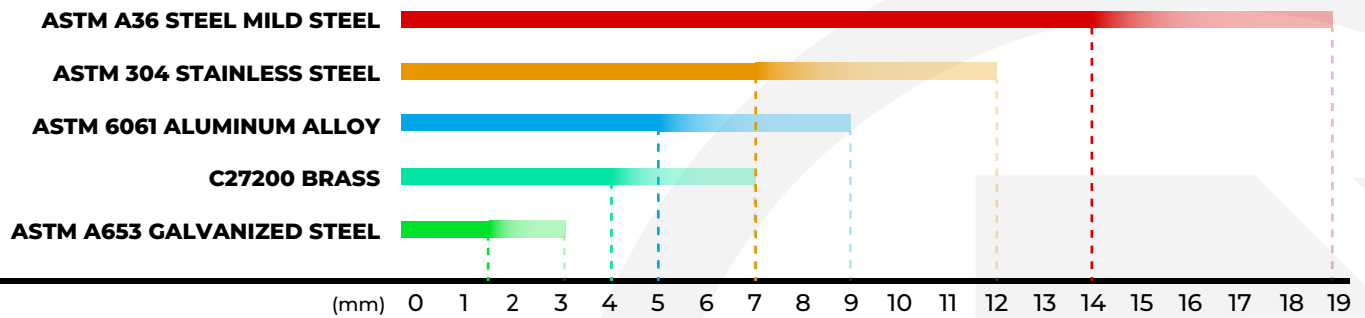
Space required



Applicable materials
















Cutting thicknesses by material


















MATERIAL	Ideal thickness ¹			Maximum thickness ²		
	mm	in	Gauge	mm	in	Gauge
ASTM A36 MILD STEEL	10	3/8	-	13	1/2	-
ASTM 304 STAINLESS STEEL	4	5/32	8	6	1/4	4
ASTM 6061 ALUMINUM ALLOY	3	1/8	10	5	13/64	6
C27200 BRASS	2	5/64	14	4	5/32	8
ASTM A653 GALVANIZED STEEL	1.25	3/64	18	2	5/64	14

1. The ideal thickness refers to the thickness that can be cut with a completely clean edge and without burrs.
2. The maximum thickness is the upper cutting limit. Beyond the ideal thickness, cut lines may appear as thickness increases. It is not recommended to measure the machine based on the maximum thickness. Cutting at the maximum thickness also restricts the geometries that can be processed due to material temperature effects.

Packing List:

- 1 x FORZA RANGER 1500W main machine (1) 
- 1 x LC40 Laser Head. 
- 1 x Wireless remote control. 
- 1 x MFSC Power Supply– 1500W Max Photonic 
- 1 x Wireless Keyboard and Mouse. 
- 1 x Laser Protective Glasses with Case. 
- 2 x Waste collection cart. 
- 6 x Machine leveling feet. 
- 1 x Screen support structure kit (2 pieces) 
- 1 x Gutter and tracks assembly kit (4 pieces) 
- 49 x Support swords 
- 1 x Monitor screen 
- 1 x Industrial CPU 









-POWER CABLES AND TRAYS-

- 1 x Monitor Power Cable 
- 1 x Gas extraction tube/hose x 4.8m x10" 
- 2 x PU cooling hoses [C-H] 10m x 8mm 
- 2 x PU cooling hoses [C-F] 10m x 19mm 
- 1 x Voltage regulator for monitor 
- 5m x Cable 2x4 AWG + 1x10AWG, B-E (T:Ring-Spade)@220V1ph 
- 5mxCable 3x8 AWG + 1x10AWG, B-T (T:Ring-Spade) @250v3ph 
- 5mxCable 3x10 AWG + 1x10AWG, B-T (T:Ring-Spade) @250v3ph 
- 5mxCable 3x12 AWG + 1x10AWG, B-E (T:Ring-Spade @380v3ph 
- 5mxCable 3x12 AWG + 1x10AWG, B-T (T:Ring-Spade @440v3ph 
- 5mxCable 3x12 AWG + 1x10AWG, B-T (T:Ring-Spade) @480v3ph 
- 2mxCable 3x12 AWG + 1x10 AWG T-E (T:Ring-Ring) @220...480v3ph 
- 10mxCable 3x4 AWG + 1x10 AWG, E-M (T:Ring-Spade) @1ph 
- 10m x Cable 4x12 AWG + 1x10 AWG, E-M (T:Ring-Spade) @3ph 
- 15m x Cable 4x12 AWG, MX (T:Ring-Spade) 






-LICENSES-

- 1 x FORZA Play Lifetime Software License
- 1 x License by FORZA Vectors 1 year.
- 1 x Full License FORZA Academy 1 year.
- 1 x License from Super 7 Support 4 years.


















-PERIPHERALS-

- 1 x Voltage stabilizer 220V-1hp / 30 KVA.@1ph - (2) 
- 1 x Voltage stabilizer 380V-3hp / 30 KVA.@3ph - (2) 
- 1 x 1.5kW automatic chiller.(2) 
- 1 x Industrial exhaust fan 1.5 kW(3) 
- 1 x 30KVA Transformer [220V - 380V] @220v3ph. (3) 
- 1 x 30KVA Transformer [250V - 380V] @250v3ph. (3) 
- 1 x 30KVA Transformer [440V - 380V] @440v3ph. (3) 
- 1 x 30KVA Transformer [480V - 380V] @480v3ph. (3) 

-CONSUMABLES-

- 1 x Top protective lens. 
- 9 x Bottom protective lenses. 
- 16 x Cutting nozzles, multiple sizes 
- 1 x Capacitive ceramic sensor base. 
- 1 x Liter ISO 68 Oi. 

-TOOLBOX-

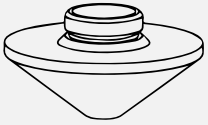


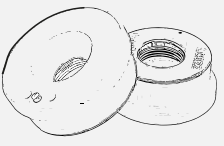
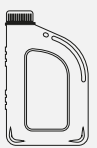
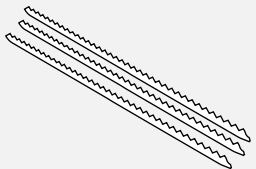



- 1 x Plastic toolbox. 
- 1 x Scotch Tape. 
- 1 x Masking Tape 
- 1 x Metric allen key set. 
- 1 x4 pcs Screwdriver Set. 
- 1 x Set of door and switch keys. 
- 1 x Adjustable pipe wrench. 
- 1 x Cotton swabs and cleaners. 
- 1 x Bag of 6mm bolts and anchors 
- 1 x Branding poster 
- 1 x WiFi module 
- 1 x Electrical terminals set 
- 1 x Service terminals set 
- 10 x 3/8" expansion bolts 
- 30 x Screws + Fischer plug 
- 1 x QBH Protector 
- 2x10" Clamps for flexible pipe 

T: Transformer B: Breaker, E: Stabilizer, M: Machine, F: Laser Source, C: Chiller, H: Head, X: Exhaust, G: Ground)
*The reference cables are with TW type coating

Transport symbols:  (Package);  (Inside a package);  (Installed on the machine)

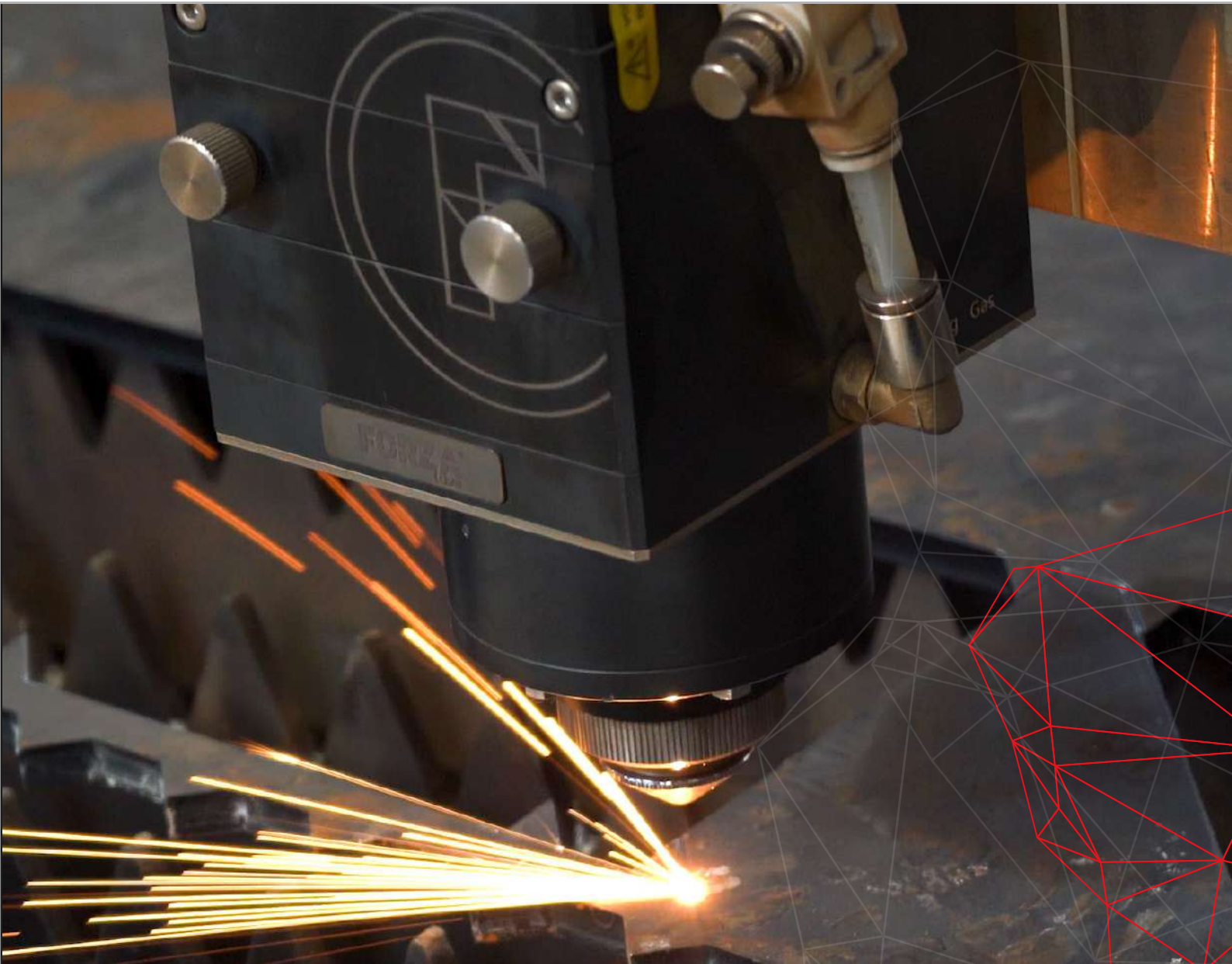
Package	Dimensions	Net Weight	Gross Weight
 (1)	W: 2320mm H: 1250mm L:4245mm W: 7.6ft H: 4.1ft L: 13.9ft	1590kg 3505lb	1690kg 3726lb
 (2)	W: 1020mm H: 1050mm L: 1200mm W: 3.3ft H: 3.4ft L:3.9ft	150kg 331lb	175kg 386lb
 (3)	W: 1020mm H: 800mm L: 1200mm W: 3.3ft H: 2.6ft L: 3.9ft	150kg 331lb	175kg 386kg

Consumables:

Picture	Item	Model	Dimensions	Lifetime
	Cutting nozzle: single/double	xxxx	D:28mm M1x0.75 H:15mm	200 hours
	Bottom protective lens	CF-L30.0X5.0-4K	D:30mm T:5mm	200 hours
	Distilled water	xxxx	13 liter	2 months
	Capacitive ceramic sensor base	CF-BCD28M1L12	D(e):28mm	1000 hours
			D(j):24.5mm	
			M1x0.75	
			H:12mm	
	ISOVG68 lubricating oil	xxxx	1 liter	50 000 meters
	Support slats	xxxx	L:1600mm T:2mm	300 000 meters
	Blue grease for pinions	xxxx	Lithium grease	10 000 meters
	Second bottom protection lens	CF-L30.0X5.0-4K	D:30mm T:5mm	Not specified
	Top protective lens	CF-L21.5X2.0-4K	D:21.5mm T:2mm	Not specified

MANUFACTURED PARTS:





With Forza Laser, laser specialists, our team has everything you need to grow your own business to the fullest.

Find us on our social media



www.forzalaser.com

FORZA[®]
Laser