



FORZA

Ranger T

V250217

Datasheet
Model NT1530P15



FORZA

Ranger T

Industrial CNC laser cutting machine for metal sheets and tubes

Cutting / Marking / Perforation

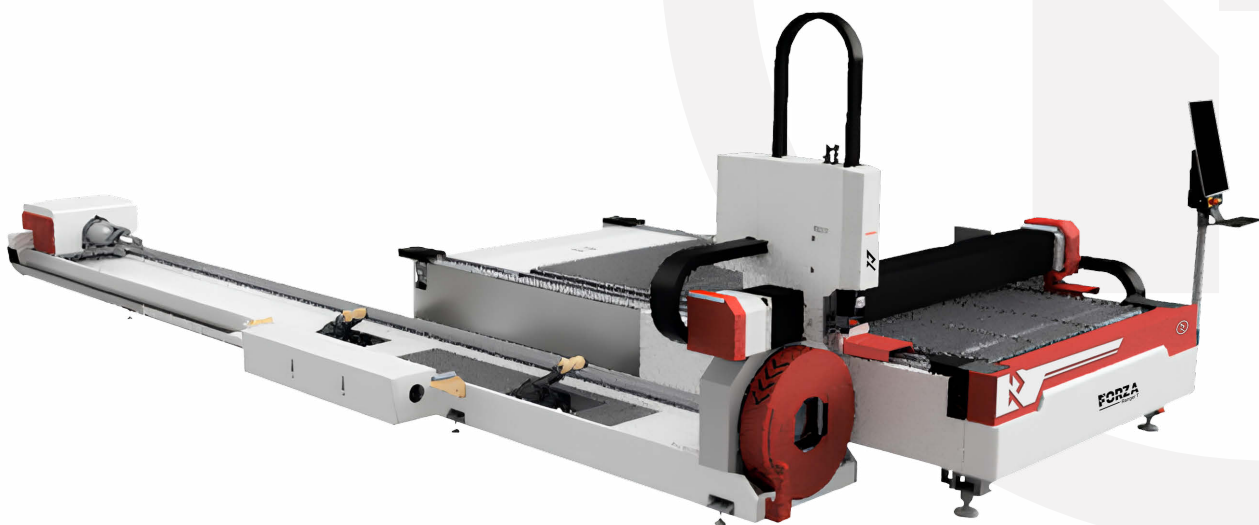
The FORZA RANGER T laser cutter is the latest generation of our mixed sheet and tube machinery line.

With higher cutting speed, acceleration, and robustness, it is capable of working with full 5ftx10ft sheets and tubes up to 220mm in diameter and 6 meters in length.

Main Features

FEATURES	DETAIL
Application	Sheets and tubes cutting
Standard sheet working area	1525mm x 3050mm 5ft x 10ft
Maximum length and diameter in tube	L:6000mm x D:220mm L:20ft x D:8.6in
Nominal laser power	1500W
Nominal cut thickness in ASTM A36 ¹	10mm 3/8in
Maximum cutting thickness ASTM A36 ²	13mm 1/2in
Maximum acceleration	1.0G 32.0ft/s ²
Maximum XY translation speed	100 m/min 5.5 ft/s
Cutting accuracy ³	± 0.1mm

1. It is the limit with which a clean, burr-free cut can be obtained; up to this thickness it can be cut permanently.
2. It is not recommended to size the machine with this power if you intend to work permanently with thicknesses greater than the nominal one, as the cut will begin to present more pronounced lines and possible burrs as it moves away from the nominal thickness. In addition, the piercing may be unstable at maximum thicknesses, so it must be carefully controlled by the operator.
3. The cutting accuracy is taken from a 0.7mm stainless steel plate, it considers the repeatability and accuracy of the machine. 0.1mm accuracy means that when cutting a 100.0mm plate it can measure 100.1mm or 99.9mm. If the thickness of the material increases the error may be greater due to the nature of the materials and the width of the cut.



Special Features

Smart Focus Technology



Automatic head for working on uneven surfaces, no matter if the plate is warped, the head will maintain a constant distance throughout the cut.

Marking Technology



It is not only for cutting, it also has a marking function, ideal for engraving lines for post-bending processing or engraving numbers and letters.

Gravity Cut



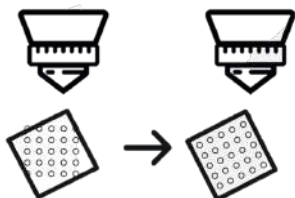
You can save up to 60% of time when cutting rectangular and circular patterns by taking advantage of the inertia of the movement.

Software FORZA Play.



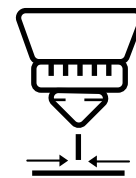
Specialized Spanish and English software for cutting, user-friendly, with anti-collision alarm system and maintenance notices.

Find edge system.



Detects edges to position drawings on contours and take advantage of the material, which can reduce waste by up to 40%.

Centering Technology



It refers to the process of aligning an object or component precisely in the center. This process is crucial for cutting tubes as it ensures the functionality and precision of the equipment.

General Specifications

SPECIFICATION	DETAIL
Model	FORZA RANGER T – NT1530P15
Laser Type/Laser Technology	Fiber Laser 1064nm ± 30nm
Laser diameter in the QBH	20um
Nominal power of Fiber laser	1500W
Fiber laser working power range	5 a 100% (±0.5%)
Stability at output power	± 1.5W
Laser working frequency	4 a 5000Hz
Source protection level	IP54
Source model for use	MFSC-3000W Max Photonics
Types of work	CUTTING / MARKING / PERFORATION
Focusing system	SMART FOCUS TECHNOLOGY ⁽¹⁾
Type of gas to use for cutting	O2, N2 or Air
Proportional oxygen regulation	Analog control 10 bar (Airtac)
Laser cutting head model	OSPRI - LC40
Focus range	-10mm ~ +10mm
Maximum focusing speed	100mm/s
Protection system	Prevention and detection of impacts
Pre-loaded cutting profiles creation	Yes ⁽²⁾
Laser cutting width	0.1mm ~ 1.5mm⁽³⁾
Cutting precision	Depending on the thickness⁽⁴⁾
Cutting angle	<2°⁽⁵⁾

- The focusing system incorporates an internal servomotor that moves the lens and in addition a capacitive sensor that maintains the distance between the head and the material during cutting*
- The parameters are available on the library.forzalaser.com platform and the customer can download them for free and a local backup is left on the machine for quick access.*
- The width of the cut is directly proportional to the thickness of the material; the greater the thickness, the greater the width of the cut. The type of auxiliar gas also has an impact; with oxygen the cut line is wider.*
- Cutting accuracy is 0.1mm for sheets with thickness up to 0.7mm. If the cutting thickness increases, the accuracy is affected by the cutting width up to 0.5mm for ½ inch sheets.*
- The angle of inclination depends on the thickness of the cutting material and also the type of gas being used, the greater the thickness the angle of inclination can be affected, oxygen can increase the angle of inclination of the cut.*

Repeatability	±0.05mm
Movement accuracy	±0.02mm
Nominal working area	1500mm x 3000mm 4.9ft x 9.8ft
Total sheet space per unit	1525 mm x 3050mm 5ft x 10ft
Tube working length	500mm a 6000mm 1.6ft x 20ft
Tube working diameter	20mm a 220mm 0.8in a 8.6in
Maximum displacement in Z	350 mm 13.8in
Maximum cutting speed	30 m/min 1.64ft/s
Maximum traslation speed	100 m/min 5.5ft/s
Maximum tube rotation speed	30rev/min
Maximum XY acceleration	1.0G 32.0ft/s²
XY motion system	Rack / Pinion
Z motion system	Screwball
XYZA servo motor power	X: 750W
	Yx2:850W
	Z:400W
	Ax2:1300W
Servo motor brand	Innovance
Lubrication system	Automatic by working path
Wireless Control	Wifi remote controller
Dust removal system	External exhaust fan
Maximum load	450kg⁽⁶⁾
Maximum laser source consumption	5.5 kW
Maximum chiller consumption	2.7 kW
Maximum exhaust fan consumption	1.5 kW

6. The maximum weight is a full 5ftx10ft sheet of 3/4in ASTM A36 steel, which must be distributed throughout the bed machine.

Movement and control system power	7 kW		
Peak power consumption	16.7 kW		
Minimum power for sizing ⁽⁷⁾	11.45 kW		
Average power consumption⁽⁸⁾	6.87 kWh		
Nominal voltage	Single-phase: 220V (50-60Hz)		
	Threephase: 220/250/380/440/480V(50-60Hz)		
Minimum current per line	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 wire gauge for breaker panel ⁽⁹⁾	Up to 60°C (TW,UF)	Up to 90°C (THHW,THNF)	Voltage
	2 x 4AWG	2 x 6AWG	220VAC 1ph
	3 x 8AWG	3 x 10AWG	220VAC 3ph
	3 x 10AWG	3 x 10AWG	250VAC 3ph
	3 x 12AWG	3 x 12AWG	380VAC 3ph
	3 x 12AWG	3 x 14AWG	440VAC 3ph
	3 x 12AWG	3 x 16AWG	480VAC 3ph
	+1 x 10AWG PE		
Recommended breaker for the machine	60A @ 220VAC 1ph		
	35A @ 220VAC 3ph		
	30A @ 250VAC 3ph		
	20A @ 380VAC 3ph		
	20A @ 440VAC 3ph		
	20A @ 480VAC 3ph		

7. The minimum power requirement for electrical sizing is calculated based on the typical power ratings of the laser source and chiller, along with half the power consumption of the exhaust system and machine actuators.
8. The average power consumption is estimated at 60% of the rated power for sizing purposes. Not all components remain active continuously during operation; the periodic activation and deactivation of systems such as the chiller, motors, and laser source contribute to a lower overall consumption.
9. The cable gauge sizing was done based on NEC 310-16 for maximum conductor temperatures of 60°C and 90°C respectively, where a conduit installation is considered. In case of an open-air cable installation, a smaller gauge than the one shown in this document could be used after consulting the FORZA Laser technical department.

Power cable length ⁽¹⁰⁾	10 m 32.8ft
Pneumatic supply required for rotor	6bar (tube inlet 8 mm)
Type of communication	RJ45, WIFI, USB 3.0
Supported design formats	AI, DXF, PLT, LXD, G
Software for use	FORZA PLAY
Software Language	Spanish and English
PC control interface	By screen and by manual control
Cooling method	Water-cooled
Chiller tank size	13L 4.43 gal
Gas connection diameter	8mm O2 and 8mm N2 hose (Nylon)
Maximum pressure allowed in the head	25bar 362.6 psi
Maximum air/N2 input pressure	20bar 290psi
Maximum O2 input pressure	10bar 145psi
Recommended N2 input pressure	≤ 16bar 232psi
Recommended O2 input pressure	6 bar⁽¹¹⁾
Equipment weight	3130kg
Weight of equipment for transport	3200kg
Machine dimensions	8476 x 3720 x 2257mm 27.8 x 12.2 x 7.4ft
Part A dimensions for transport ⁽¹²⁾	4200 x 2300 x 750mm 13.8 x 7.6 x 2.5ft
Part B dimensions for transport ⁽¹³⁾	8000 x 1100 x 750mm 26.3 x 3.6 x 2.5 ft
Resistance on the work floor	6.5 Kg/cm²
Relative humidity	< 85%
Working temperature	2 – 35° C
Storage temperature	8 – 30° C
Certifications	CE, RoHS

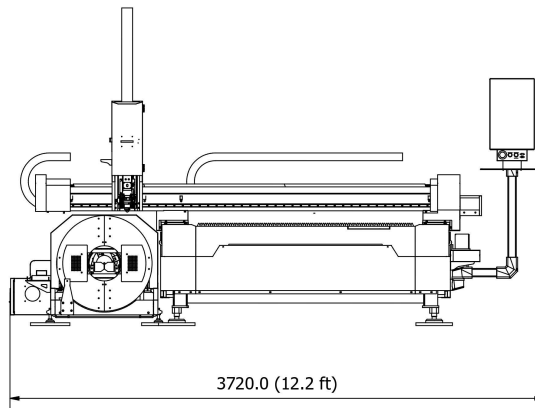
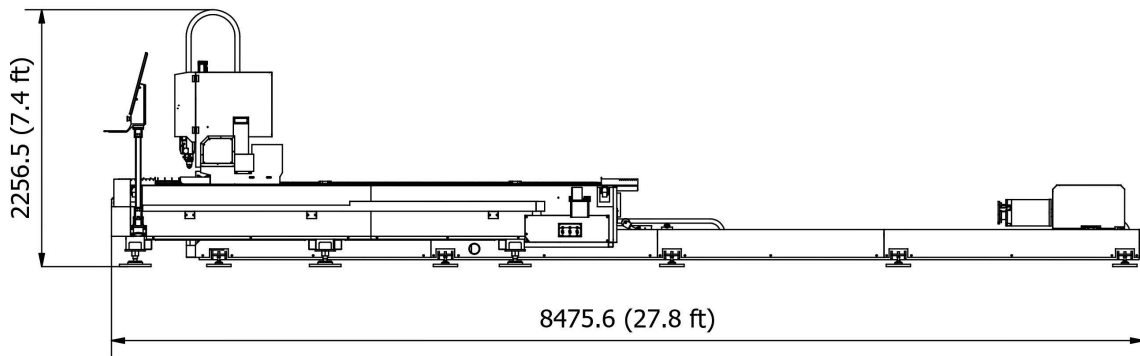
10. The power cable length is measured from the breaker to the transformer.

11. This pressure is measured at the tank gauge outlet, and valve calibration is performed based on this reference.

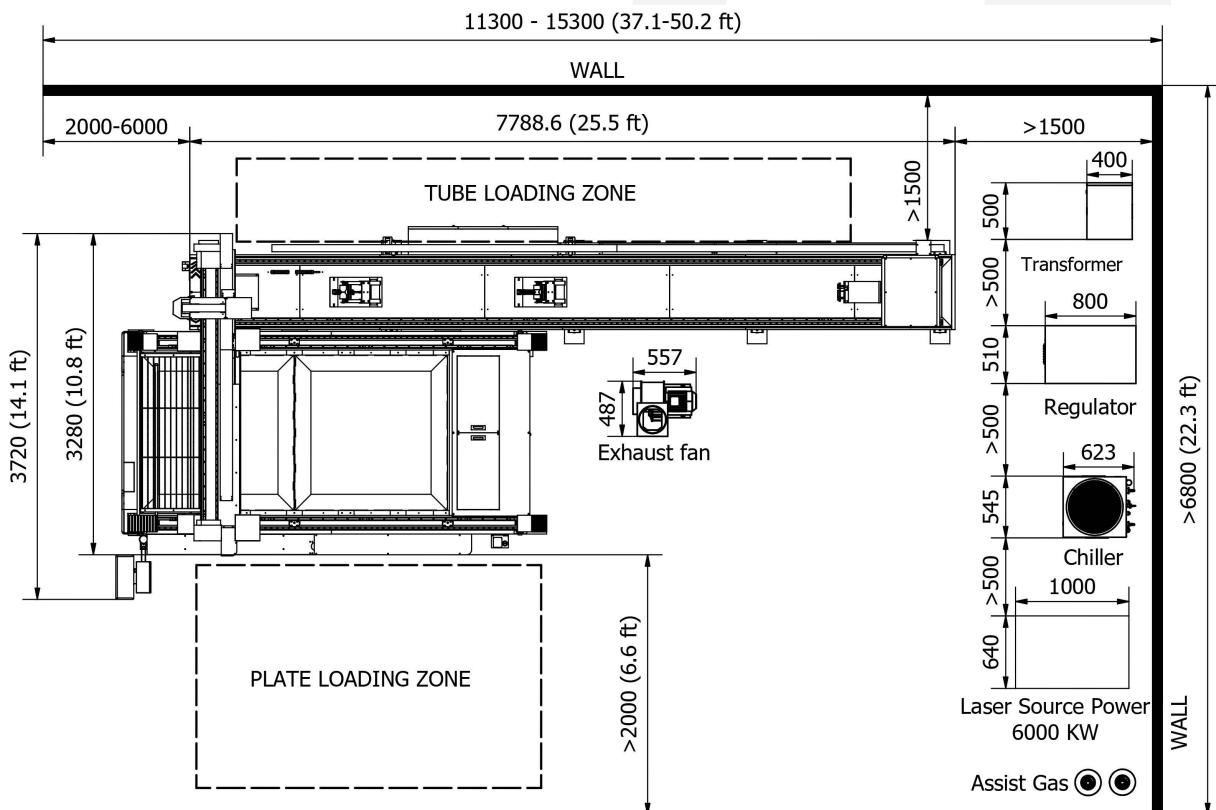
12. Part A consists of the cutting bed and peripheral components.

13. Part B comprises the structure supporting the tubes.

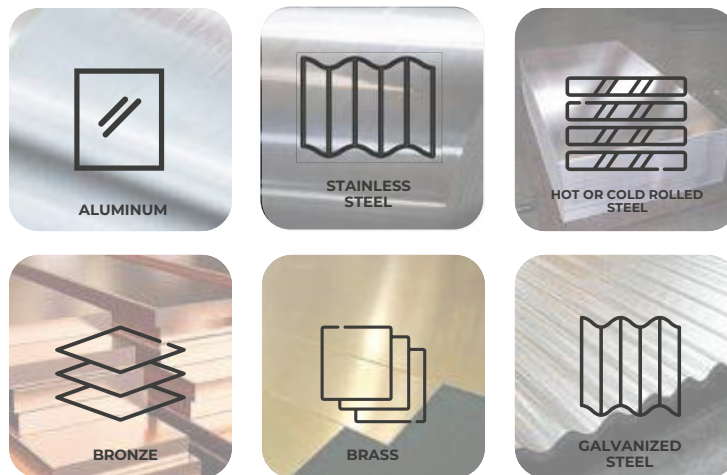
Machine dimensions *(Dimensions in mm)*



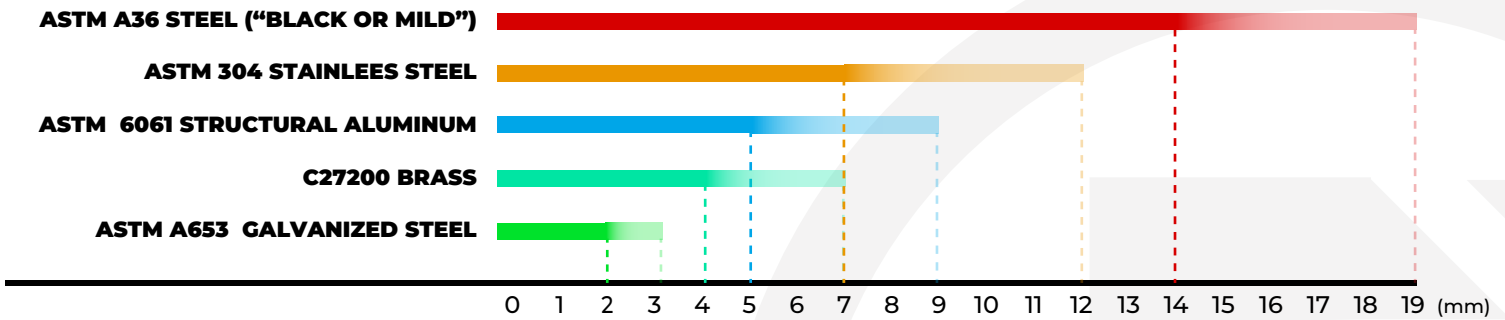
Space required *(Dimensions in mm)*



Working materials

















Cutting thickness by material












MATERIAL	Ideal thickness ¹	Maximum thickness ²
ASTM A36 STEEL ("Black or Mild")	10mm 3/8in	13mm 1/2in
ASTM 304 STAINLESS STEEL	4mm 5/32in	6mm 1/4in
ASTM 6061 STRUCTURAL ALUMINUM	3mm 1/8in	5mm 13/64in
C27200 BRASS	2mm 5/64in	4mm 5/32in
ASTM A653 GALVANIZED STEEL	1.25mm 3/64in	2mm 5/64in

1. The ideal thickness refers to the thickness that is cut with a completely clean edge and no burrs.
2. The maximum thickness is the limit that can be cut. From the ideal thickness, lines appear as the thickness increases. It is not recommended to size the machine to the maximum thickness. Cutting at limit thicknesses also restricts the geometries that can be cut due to the temperature of the material.

Packing List:

- ❑ 1 x FORZA RANGER T 1500W Machine. (1) 
- ❑ 1 x Rotary axis body. (2) 
- ❑ 1 x LC80 Laser cutting head 
- ❑ 1 x Laser source MFSC – 1500W Max Photonics 
- ❑ 1 x Wireless remote controller 
- ❑ 1 x Wireless keyboard and mouse 
- ❑ 1 x Laser safety glasses with case 
- ❑ 2 x Waste collection cars 
- ❑ 6 x Leveling feet 
- ❑ 1 x Screen support structure kit 
- ❑ 1 x Cable drag chains and trays assembly kit. 
- ❑ 49 x Support slats 
- ❑ 1 x Monitor screen 
- ❑ 1 x Industrial CPU 

- CABLES AND CONNECTORS -

- ❑ 1 x Flexible pipe for dust removal x4.8m x10". 
- ❑ 1 x Cable de alimentación del monitor. 
- ❑ 10 m x Canaleta metálica. 
- ❑ 2 x PU/Nylon hoses for cooling C-H, 10mx8mm. 
- ❑ 2 x PU/Nylon hoses for cooling C-F, 10mx19 mm. 
- ❑ 1xRegulador de voltaje para pantalla 
- ❑ 5m x Cable 2x4 AWG + 1x10AWG, B-E (T:Eye-Tip) @220v1ph 
- ❑ 5m x Cable 3x8 AWG + 1x10AWG, B-T (T:Eye-Tip) @220v3ph 
- ❑ 5m x Cable 3x10 AWG + 1x10AWG, B-T (T:Eye-Tip) @250v3ph 
- ❑ 5m x Cable 3x12 AWG + 1x10AWG, B-E (T:Eye-Tip) @380v3ph 
- ❑ 5m x Cable 3x12 AWG + 1x10AWG, B-T (T:Eye-Tip) @440v3ph 
- ❑ 5m x Cable 3x12 AWG + 1x10AWG, B-T (T:Eye-Tip) @480v3ph 
- ❑ 2m x Cable 4x12 AWG + 1x10 AWG,T-E(T:Eye-Eye)@220/440v3ph 
- ❑ 10m x Cable 3x4 AWG + 1x10 AWG, E-M (T:Eye-Tip)@1ph 
- ❑ 10m x Cable 4x12 AWG + 1x10 AWG, E-M (T:Eye-Tip)@3ph 
- ❑ 15m x Cable 4x12 AWG, M-X (T:Eye-Tip) 







-LICENSES-

- ❑ 1xFORZA Play Software lifetime license
- ❑ 1xFORZA Vectors 1 year license
- ❑ 1xFORZA Academy 1 year full license
- ❑ 1xSOPORTE Super 7 SUPPORT 4 years license






T: Transformer, B:Breaker, E:Stabilizr, M:Machine, F:Laser Source, C:Chiller, H:Head, X:Exhaust, G:Ground)
The reference cables are TW Type

Item	Dimensions	Net Weight	Gross Weight	CBM
 1	W: 2300mm H: 750mm L:4200mm	1700kg	1600kg	7.25
 2	W: 1100mm H: 750mm L:8000mm	1630kg	1700kg	6.60
 3	W: 820mm H: 900mm L:3000mm	350kg	400kg	2.21
 4	W: 1020mm H: 1050mm L:1200mm	150kg	175kg	1.28
 5	W: 1020mm H: 820mm L:1200mm	150kg	175kg	0.97


















-PERIPHERALS-

- ❑ 1 x Voltage stabilizer 200V-1ph/30 KVA.(4) 
- ❑ 1 x Voltage stabilizer 380V-3hp/ 30KVA.(4) 
- ❑ 1 x Automatic Chiller 3kW (4) 
- ❑ 1 x Industrial exhaust fan 1.5 kW. (5) 
- ❑ 1 x 30KVA Transformer [220V - 380V]. (3)-220v3ph 
- ❑ 1 x 30KVA Transformer [480V - 380V]. (3)-480v3ph 


-CONSUMABLES-

- ❑ 1xTop protective lens. 
- ❑ 9xBottom protective lens. 
- ❑ 16xCutting nozzles (different sizes) 
- ❑ 1xCeramic body for capacitive sensor. 
- ❑ 1xLiter ISO 68 Oil 

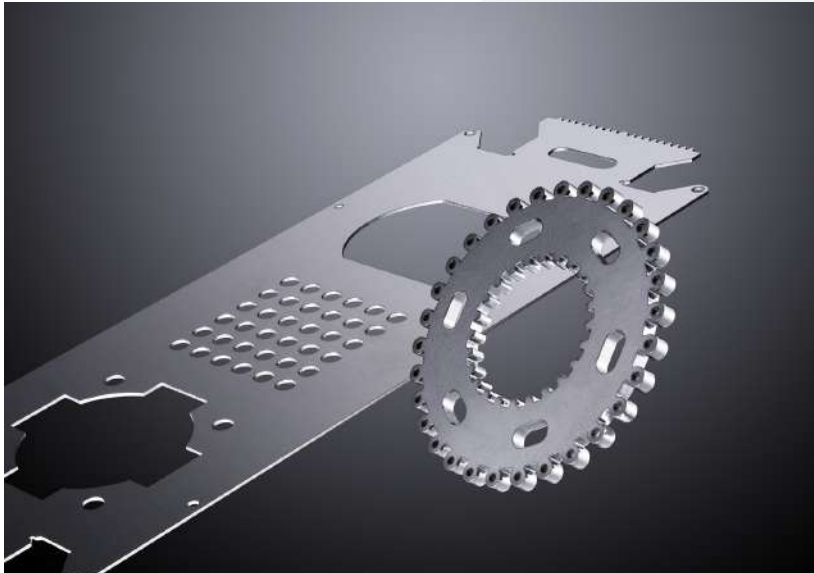
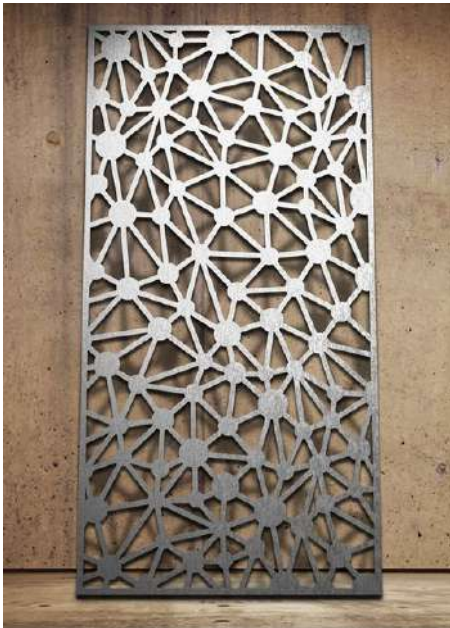
-TOOLBOX-

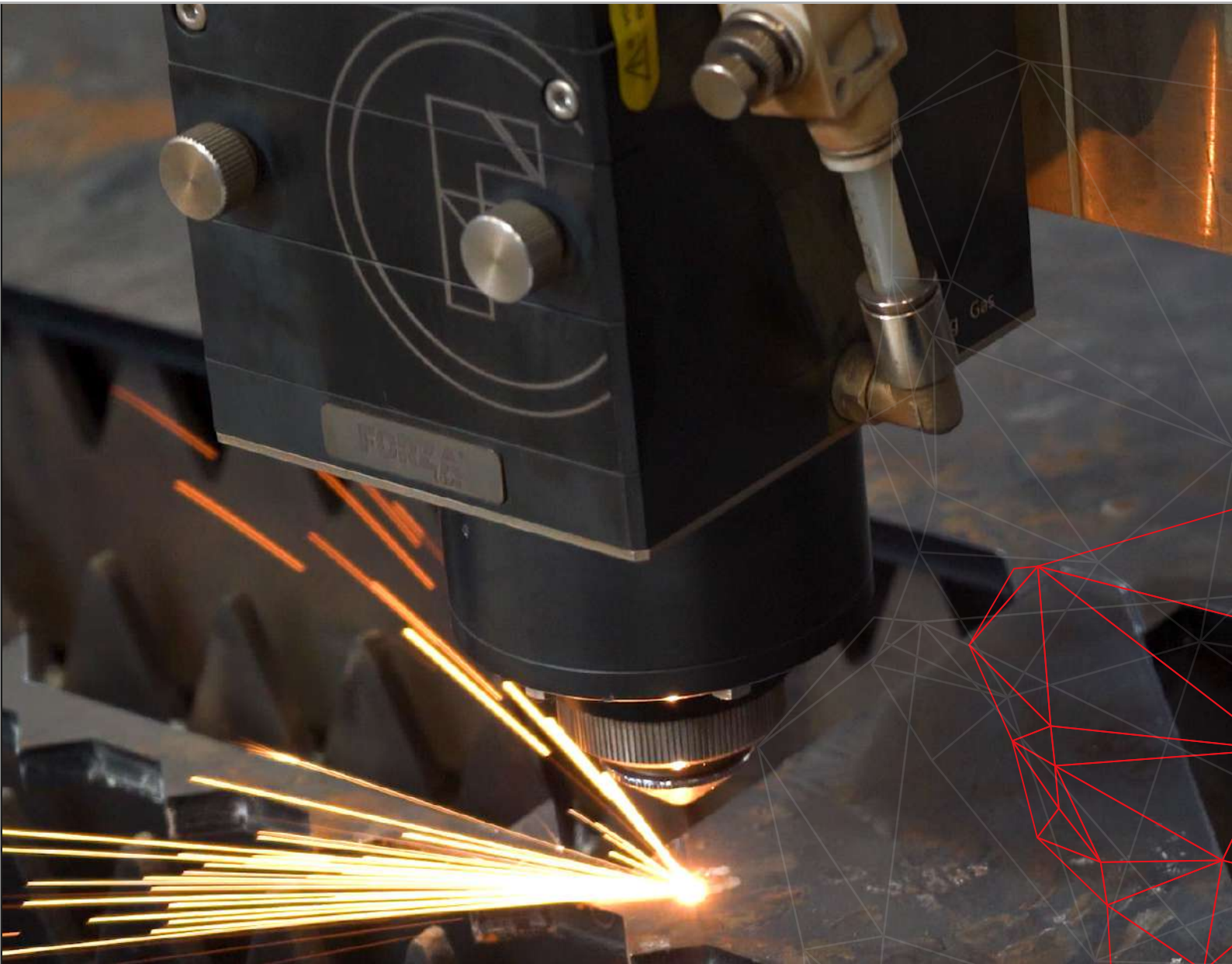
- ❑ 1 x Bag of 6mm bolts and dowels 
- ❑ 1 x Plastic toolbox. 
- ❑ 1 x Scotch tape. 
- ❑ 1 x Masking tape. 
- ❑ 1 x Metric allen key set. 
- ❑ 1 x 4pcs screwdriver set. 
- ❑ 1 x Doors and switch keys set. 
- ❑ 1 x Adjustable wrench 
- ❑ 1 x Cotton swabs andrags. 
- ❑ 1 x Branding poster 
- ❑ 1 x Wifi module 
- ❑ 1 x Electric terminals set 
- ❑ 1 x Terminal block set 
- ❑ 10 x 3/8" expansion olts 
- ❑ 30 x Screws + Fischer plug 
- ❑ 1 x QBH Protector 
- ❑ 2 x 10" Clamps for flexible tube. 

Consumables:

Photo	Article	Model	Dimensiones	Life time
	Cutting nozzle: simple/double	xxxx	D:28mm M11x0.75 H:15mm	200 hours
	Bottom protective lens	CF-L30.0X5.0-4K	D:30mm T:5mm	200 hours
	Distilled water	xxxx	13 liters 3.4 gallons	2 months
	Ceramic body for capacitive sensor	CF-BCD28M11T2	D(e):28mm	1000 hours
			D(f):24.5mm	
			M11x0.75	
			H:12mm	
	ISOVG68 lubricating oil	xxxx	1 liter	50 000 meters
	Support slats	xxxx	L:1600mm T:2mm	300 000 meters
	Lithium blue grease for rack and pinion	xxxx	1 jar	10 000 metros
	Second bottom protective 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 samples:





In Forza Laser, we are laser specialists, our team has everything you need to help your business reach its full potential.

Visit our social media channels



www.forzalaser.com

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Laser