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Digima D-1520 12 kW open-frame fibre laser, 1500x2000





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Fiber Laser D-1520 12000W

Fiber CNC Laser D-1520 12000W for precision metal cutting

D-1520 is a Fiber Laser D-1520 12000W designed for cutting sheet metal and metal components using CNC technology. The machine combines a compact design, a **1500 × 2000 mm**, laser source **Raycus 12000W** and a cutting head **Raytools BS12KCAT**.

This model is ideal for the production of sheet metal components, metalworking workshops, advertising companies, and the manufacture of guards, panels, enclosures and technical parts, as well as components made of carbon steel, stainless steel, aluminium, brass and copper.

The D-1520 12000 W is a practical fiber laser for companies that require precise, repeatable and fast metal cutting while maintaining compact machine dimensions.

Main machine photos



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Two main photos of the D-1520 laser



General view of the machine



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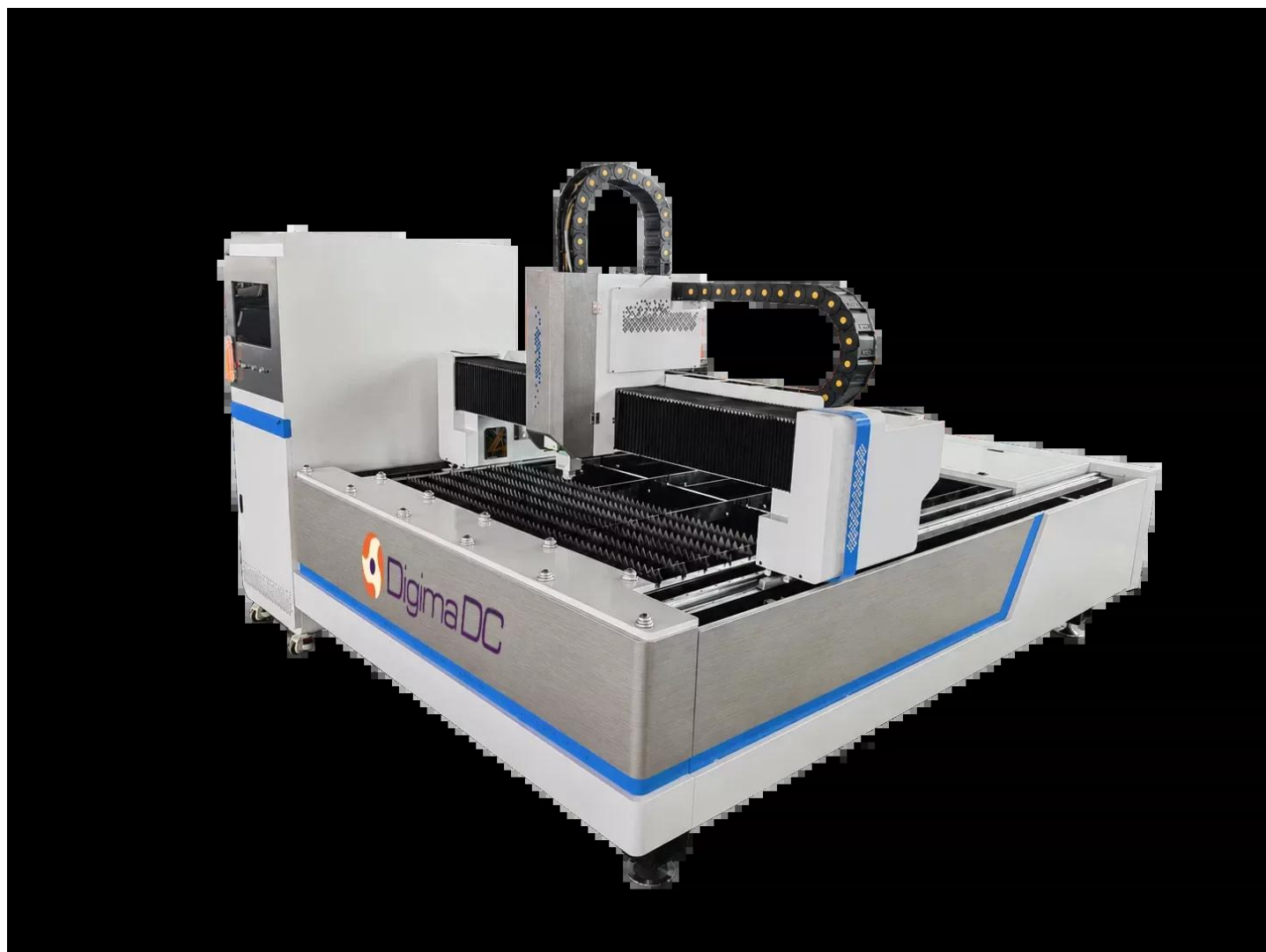


Additional laser view
Machine configuration

15 key machine components



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1. Machine Machine with a 2000 × 1500 mm working area, stable construction and high operating dynamics.



2. Laser source Raycus 12 kW laser source for efficient metal cutting.

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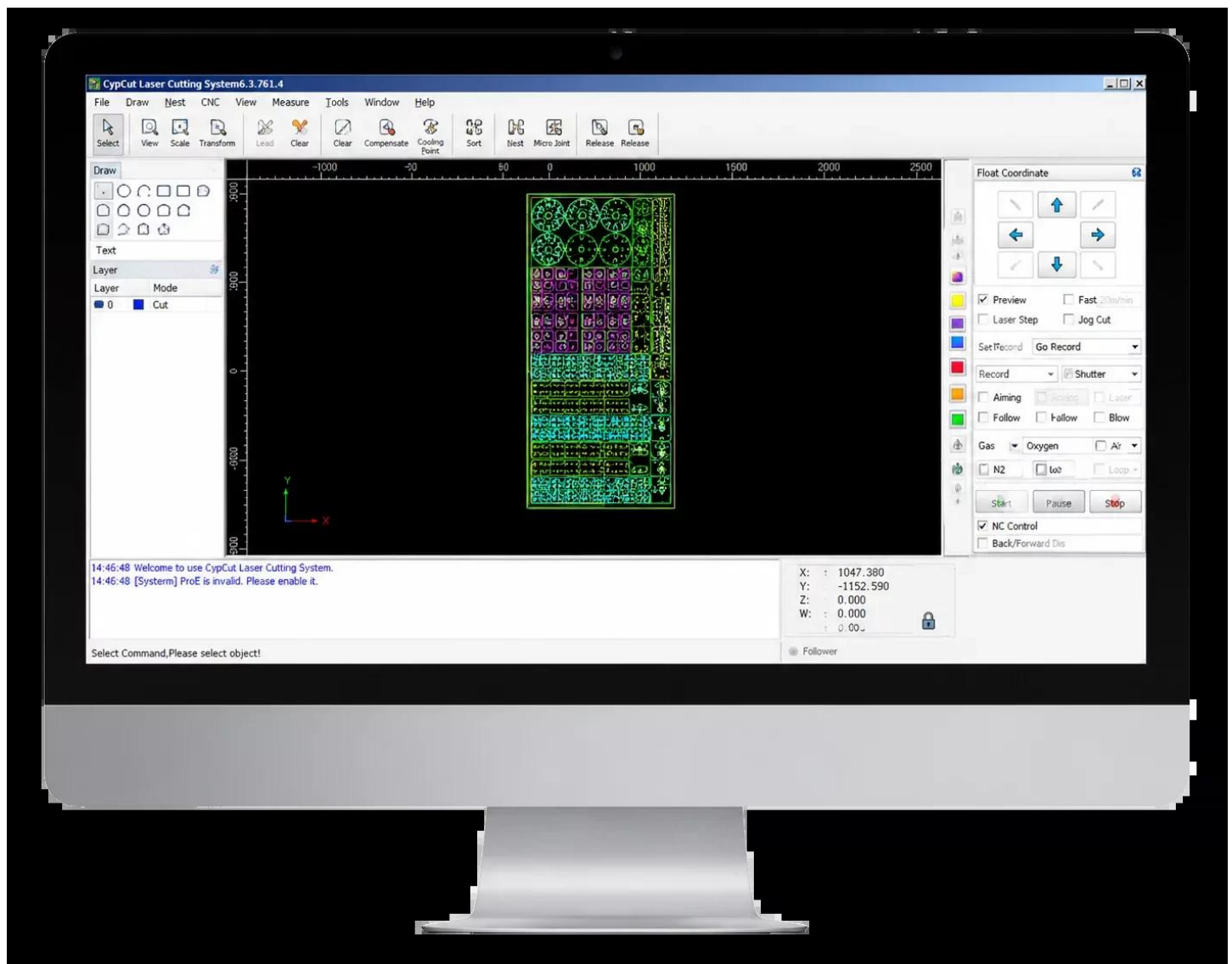
3. Laser head BS12KCAT head with lens protection, water cooling and automatic focal length adjustment.



4. Servo drive DELTA drives: X-axis 750 W, Y-axis 2 × 750 W and Z-axis 400 W.



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5. Control system Raytools XC3000S system for controlling the laser cutting process.



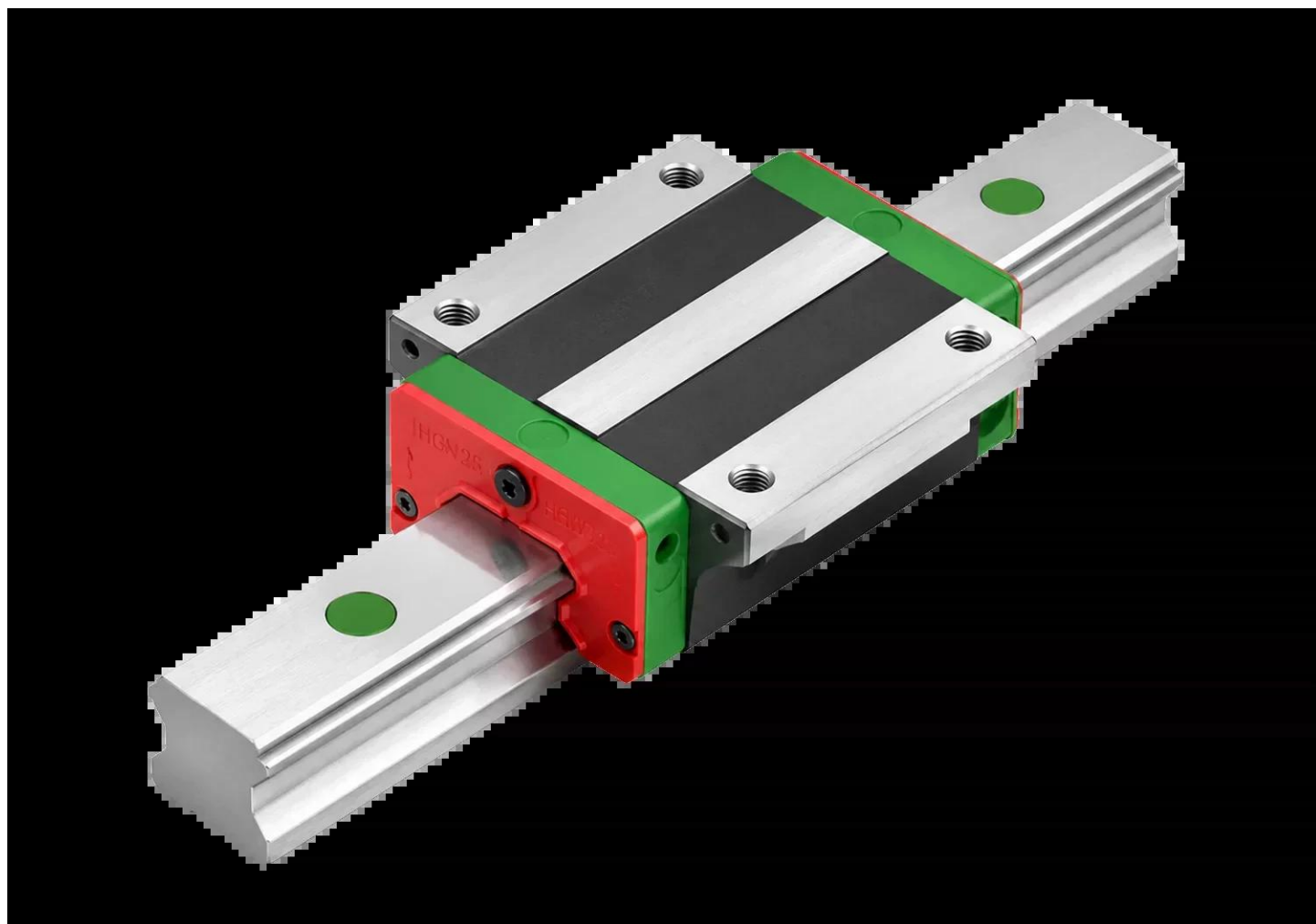
6. RackYYC rack made of hardened and ground steel — durable and precise.



7. TBI ball screwTBI component from Taiwan used in the precision motion system.



8. GearboxSHIMPO gearbox ensuring stable power transmission.

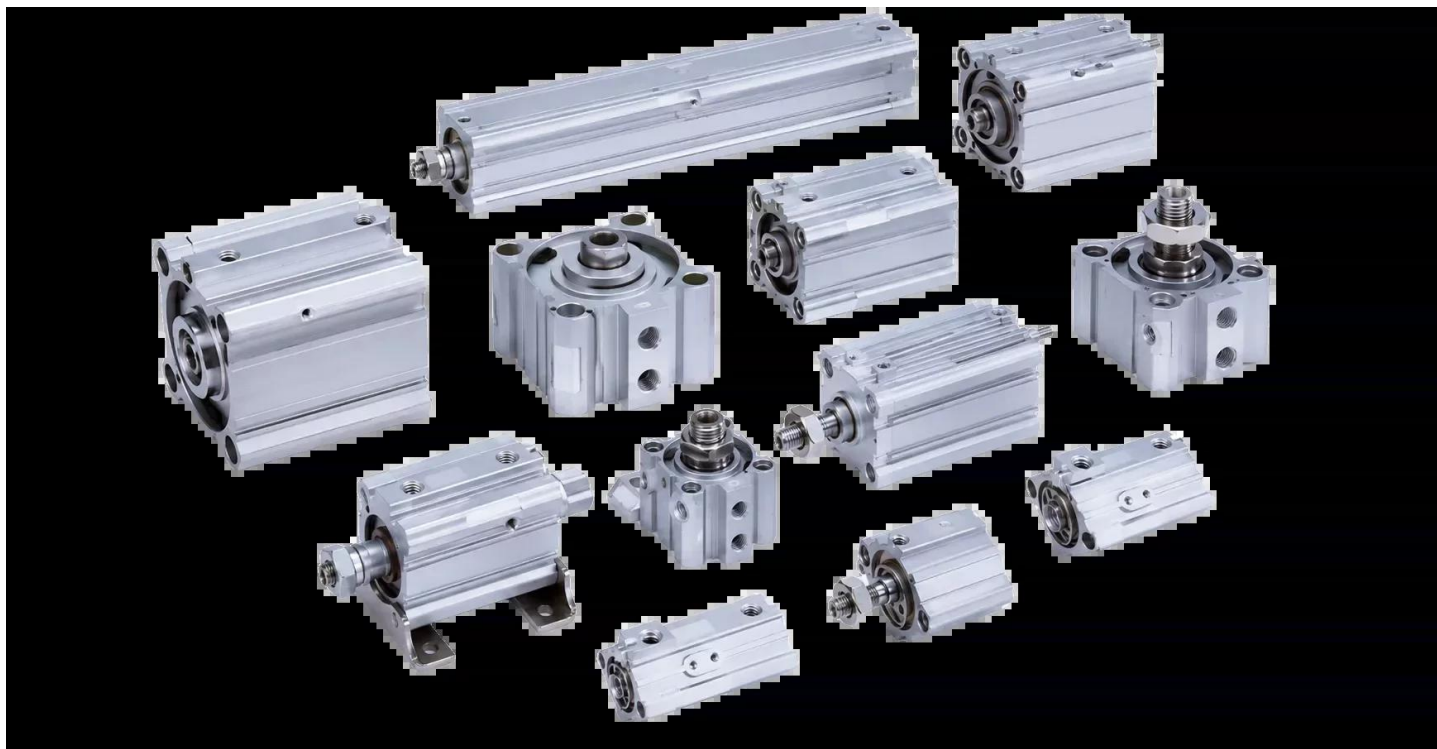


9. Linear guidewayHIWIN guideways for smooth and accurate axis movement.

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10. Electrical components DELIXI electrical components used in the control system.



11. Proportional gas valve SMC proportional valve for precise gas pressure control.



12. Machine bedBed subjected to heat treatment and an ageing process for structural stability.



13. Gantry beam Lightweight and rigid aluminium beam that improves dynamics and cutting quality.

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14. Water chiller HANLI / S&A chiller for stabilising the temperature of the laser source and head.



15. Lubrication system Automatic guideway lubrication with time and frequency adjustment. Optional equipment

Optional components available for purchase

The following components can be added to the laser configuration.



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Voltage stabiliser

Helps maintain stable power supply and smooth machine operation, especially in locations with voltage fluctuations.



Screw compressor with air tank

A solution for economical cutting of carbon and stainless steel using compressed air.



Extraction fan

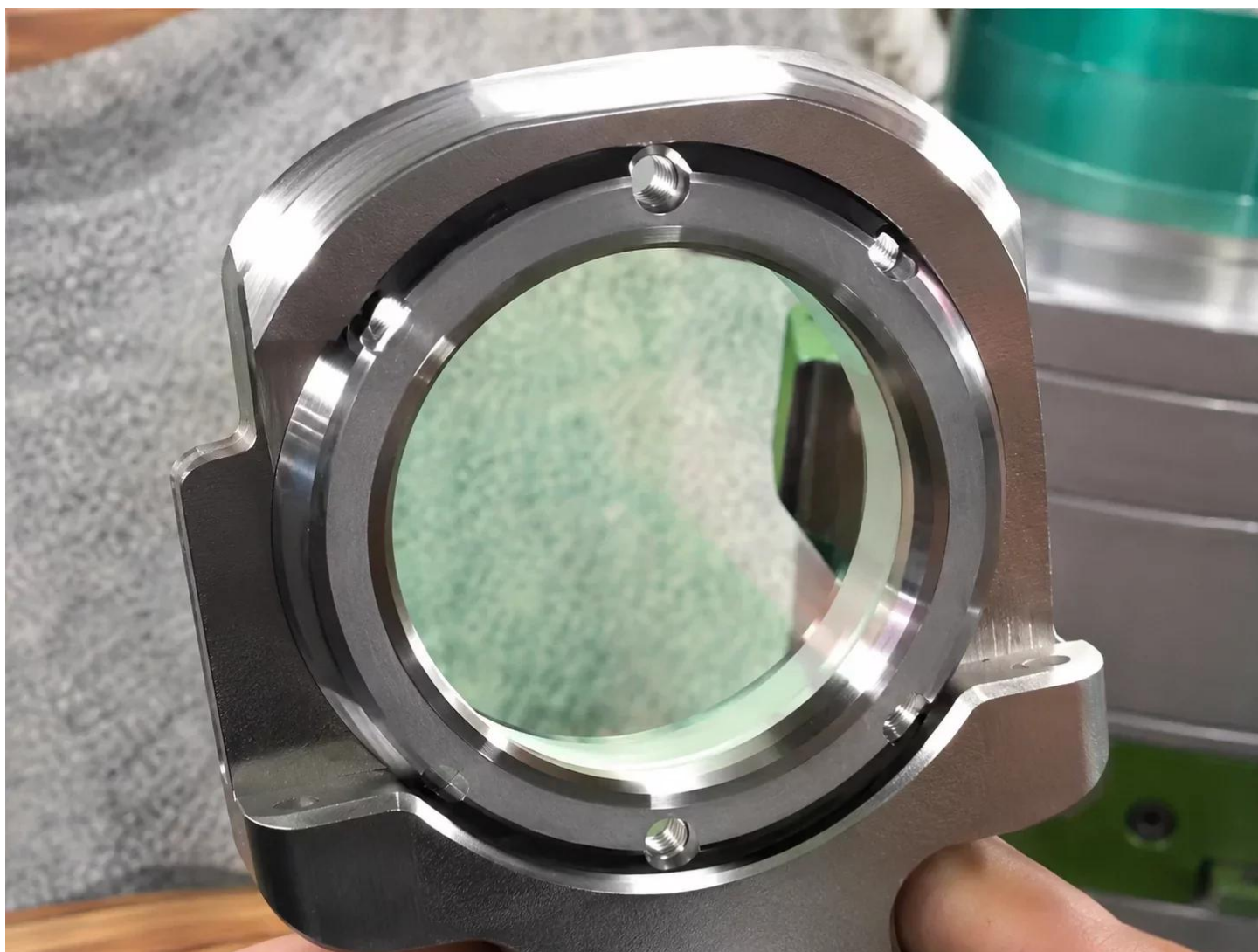
A simple and practical system for removing dust and fumes generated during laser cutting.

Consumables

Optional consumables for the laser

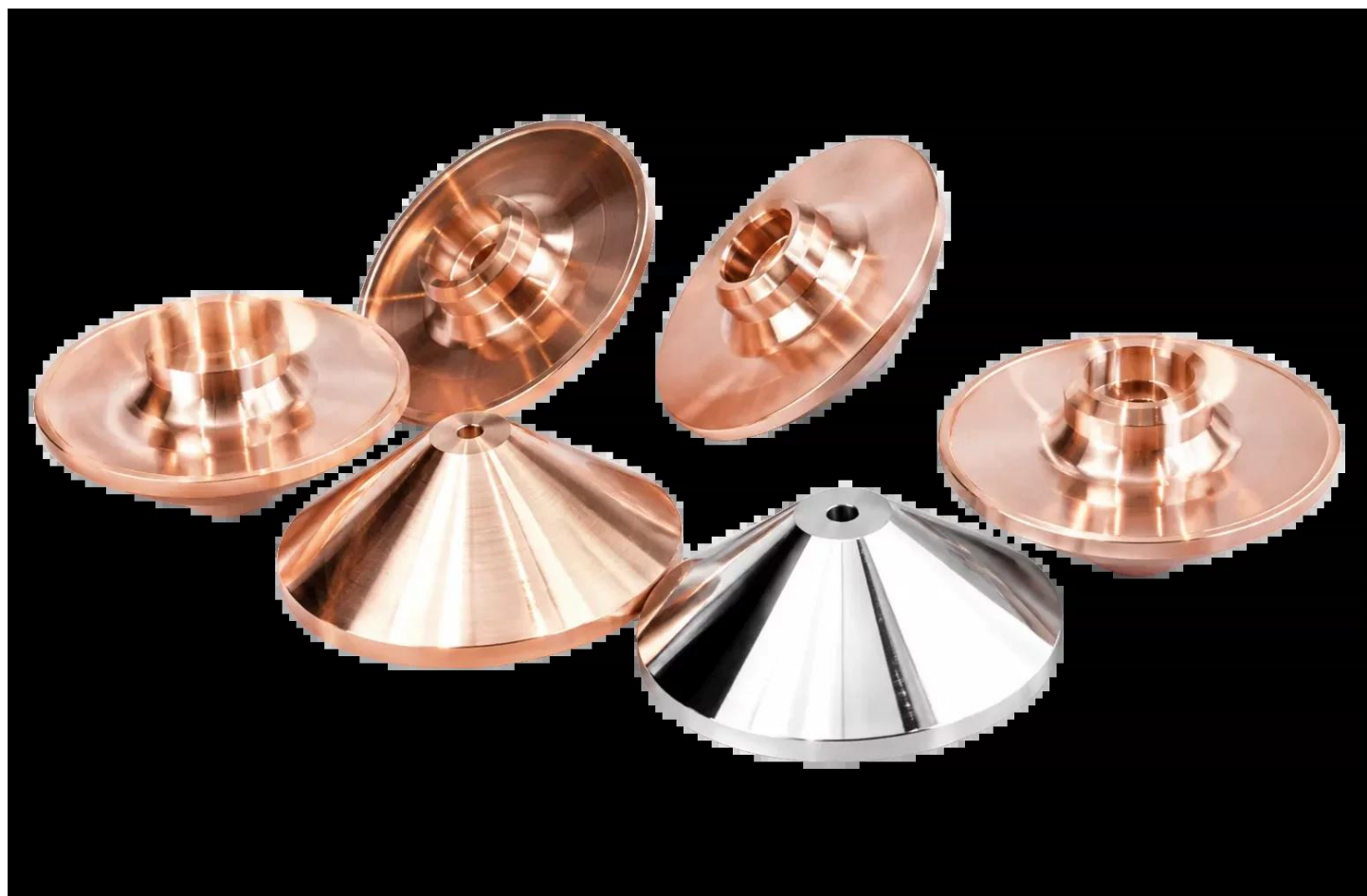
Consumable parts included in the set.

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Protective lens, 5 pcs. Service life: 300–500 hours. The set includes 5 pieces; keeping a larger stock is recommended.

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Cutting nozzle, 5 pcs. Service life: 300–500 hours. Cutting nozzles for the machine's daily operation.

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Ceramic ring, 1 pc.Service life: 4000–5000 hours. A component of the laser head.

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Focusing lens, 1 pc.Service life: 4000–5000 hours. Lens used to focus the laser beam.

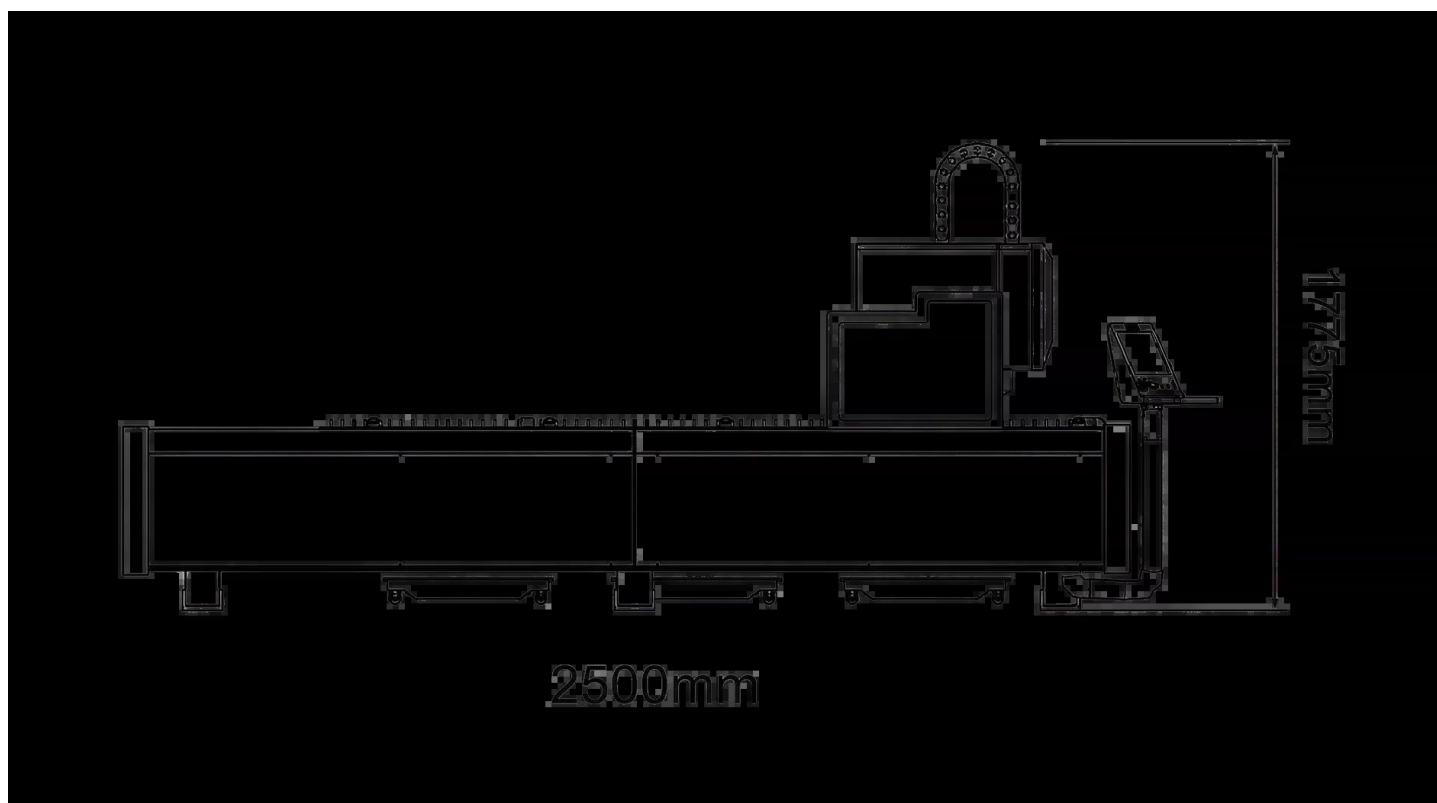
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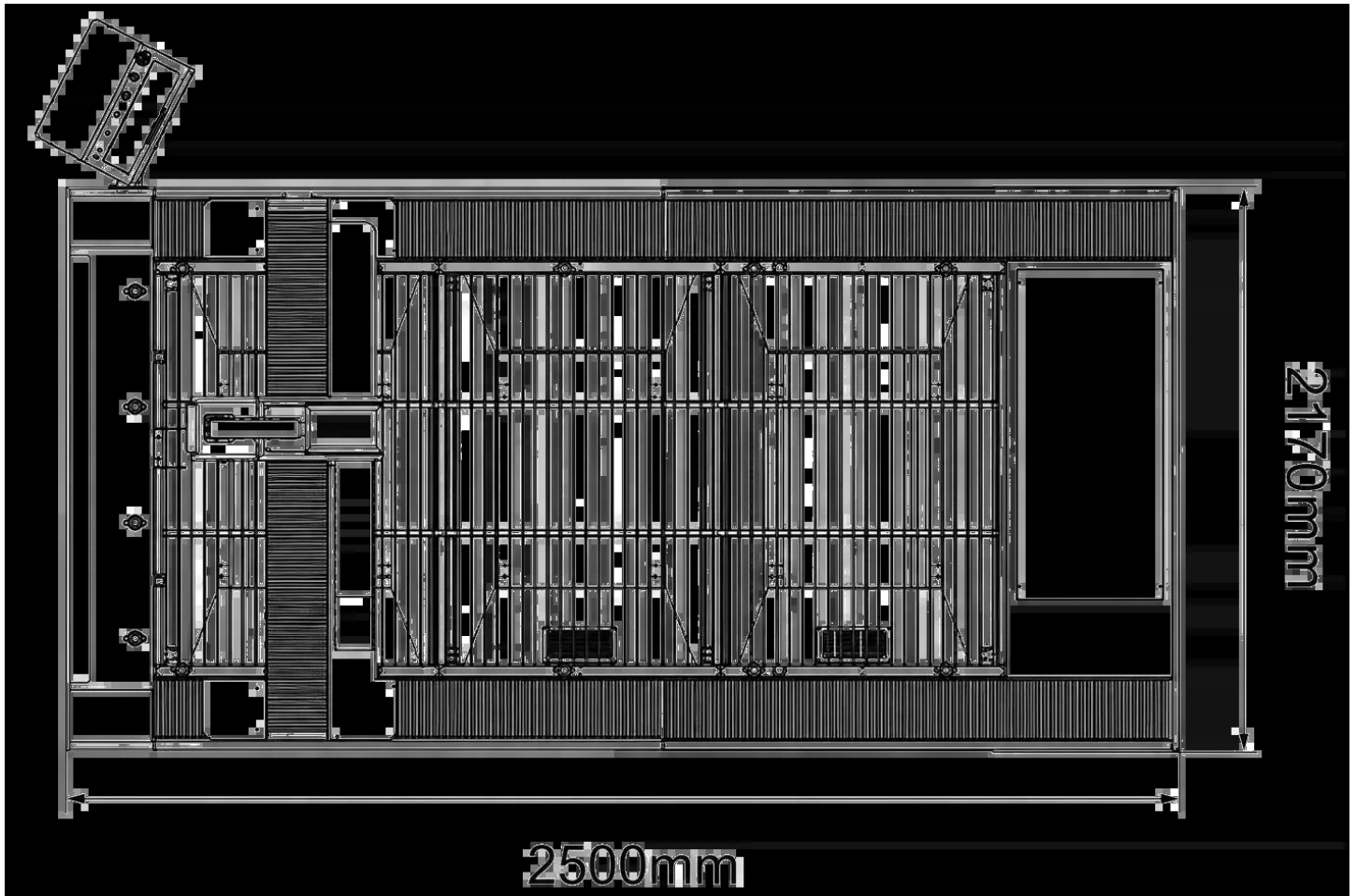
Collimating lens, 1 pc. Service life: 4000–5000 hours. Optical component of the laser system.
Technical drawings

Machine dimensions and technical drawing

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Machine dimension drawing Side and top views with the main dimensions of the D-1520 structure.



Additional technical image A diagram or technical detail showing the machine construction.
Cutting parameters

Cutting parameters for the D-1520 12000 W model

Carbon steel – CS

Cutting parameters for the 12000 W source.

Material thickness	12000 W cutting speed	Material
1 mm	50–60 m/min	Carbon steel
2 mm	45–50 m/min	Carbon steel
3 mm	40–45 m/min	Carbon steel
4 mm	30–35 m/min	Carbon steel
5 mm	20–28 m/min	Carbon steel
6 mm	16–20 m/min	Carbon steel
8 mm	12–15 m/min	Carbon steel



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Material thickness	12000 W cutting speed	Material
10 mm	8–9 m/min	Carbon steel
12 mm	5–6,5 m/min	Carbon steel
14 mm	3–3,2 m/min	Carbon steel
16 mm	2,8–3 m/min	Carbon steel
20 mm	2–2,3 m/min	Carbon steel
25 mm	1,1–1,3 m/min	Carbon steel
30 mm	0,9–1 m/min	Carbon steel
40 mm	0,3–0,35 m/min	Carbon steel

Stainless steel – SS

Cutting parameters for the 12000 W source.

Material thickness	12000 W cutting speed	Material
1 mm	50–60 m/min	Stainless steel
2 mm	45–50 m/min	Stainless steel
3 mm	40–45 m/min	Stainless steel
4 mm	30–40 m/min	Stainless steel
5 mm	25–30 m/min	Stainless steel
6 mm	15–20 m/min	Stainless steel
8 mm	12–15 m/min	Stainless steel
10 mm	8–10 m/min	Stainless steel
12 mm	5–6 m/min	Stainless steel
14 mm	3,5–4 m/min	Stainless steel
16 mm	2–2,5 m/min	Stainless steel
18 mm	1,3–1,5 m/min	Stainless steel
20 mm	1,2–1,4 m/min	Stainless steel
30 mm	0,25–0,3 m/min	Stainless steel
40 mm	0,15–0,2 m/min	Stainless steel

Aluminium – AL

Cutting parameters for the 12000 W source.

Material thickness	12000 W cutting speed	Material
1 mm	50–60 m/min	Aluminium
2 mm	35–40 m/min	Aluminium
3 mm	30–35 m/min	Aluminium



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Material thickness	12000 W cutting speed	Material
4 mm	25–30 m/min	Aluminium
5 mm	20–25 m/min	Aluminium
6 mm	14–18 m/min	Aluminium
8 mm	7–9 m/min	Aluminium
10 mm	5–7 m/min	Aluminium
12 mm	3–4 m/min	Aluminium
14 mm	1,8–2,8 m/min	Aluminium
16 mm	1,5–1,8 m/min	Aluminium
18 mm	1–1,5 m/min	Aluminium
20 mm	0,8–1,2 m/min	Aluminium
25 mm	0,5–0,7 m/min	Aluminium
30 mm	0,4–0,5 m/min	Aluminium
40 mm	0,25–0,3 m/min	Aluminium

Brass

Cutting parameters for the 12000 W source.

Material thickness	12000 W cutting speed	Material
1 mm	40–50 m/min	Brass
2 mm	35–45 m/min	Brass
3 mm	25–30 m/min	Brass
4 mm	20–25 m/min	Brass
5 mm	16–20 m/min	Brass
6 mm	12–15 m/min	Brass
8 mm	6–8 m/min	Brass
10 mm	4–5,5 m/min	Brass
12 mm	1,8–2 m/min	Brass
14 mm	1,2–1,4 m/min	Brass
16 mm	0,8–1 m/min	Brass

Copper

Cutting parameters for the 12000 W source.

Material thickness	12000 W cutting speed	Material
1 mm	30–35 m/min	Copper
2 mm	25–30 m/min	Copper



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Material thickness 12000 W cutting speed Material

3 mm	18–22 m/min	Copper
4 mm	12–15 m/min	Copper
5 mm	7–9 m/min	Copper
6 mm	5–6 m/min	Copper
8 mm	2,5–3 m/min	Copper
10 mm	1,2–1,5 m/min	Copper

Operating cost analysis – 12000 W version

Data for 12000 W power in the same operating cost analysis table format.

Item	Air / stainless steel	Oxygen O ₂ / stainless steel	Nitrogen N ₂ / stainless steel
Laser power	30 kW	30 kW	30 kW
Water chiller unit	12 kW	12 kW	12 kW
Main machine	10 kW	10 kW	10 kW
Extraction unit	3 kW	3 kW	3 kW
Total power	55 kW	55 kW	55 kW
Average energy consumption	55 × 80% = 44 kW	55 × 80% = 44 kW	55 × 80% = 44 kW
Gas consumption	200 l/h	30–50 l/h	150–220 l/h

The data are indicative and depend on the material type, sheet quality, assist gas, focus settings, nozzle, pressure and the required edge quality.

Technical parameters

D-1520 12000 W specification

Parameter	Value
Model	Fiber Laser D-1520 12000W
Working area	1500 × 2000 mm
Laser power	12000 W
Cutting head	BS12KCAT
Laser source	Raycus
Fiber source lifetime	Over 10,000 hours
Chiller	S&A / Hanli
Cutting thickness range	0,5–10 mm within the standard precision range
Assist gas for cutting	Standard version without an air source; optional screw compressor with air tank, oxygen or nitrogen
Maximum acceleration	1,5G



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Parameter	Value
Repositioning accuracy	Within $\pm 0,01$ mm
Lubrication system	Electric
Dust extraction	Standard version without an extraction unit; optional extraction fan
Positioning accuracy	$< \pm 0,02$ mm
Assist gases	Oxygen, nitrogen, compressed air
Repeatability	$\leq \pm 0,005$ mm
Maximum speed	60 m/min
Supported file formats	DXF / PLT / AI / LXD / GBX / NC code
Power supply voltage	380 V, 3 phases, 50/60 Hz
Warranty	2 years