KREXON®



K3015HM

Tube and Plate Laser Cutting Machine

Tube & Plate Cutting

K3015HM

Fiber Laser Cutting Machine



1	High-strength machine tool bed
2	Aircraft-grade aluminum beam
3	One machine, double the functionality, efficiency multiplied
4	Automatic following technology

*The image is for reference only; the appearance and dimensions are subject to the actual product from the factory.

Technical Parameters

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Item	Parameter			
	12kW	15KW	20kW	30kW
Work area (L*W) (mm)	3000*1500mm			
X-axis travel (mm)	1530mm			
Y-axis travel (mm)	3050mm			
Z-axis travel (mm)	400mm			
Tube length	500~6000mm			
Tube diameter	20~220mm			
X/Y axis positioning accuracy (mm)	±0.05mm			
X/Y axis repeated positioning accuracy (mm)	±0.02mm			
Maximum speed (m/min)	200m/min			
Maximum acceleration (G)	1.5G			
Dimensions (L*W*H) mm	9226x3470x2350mm			
Maximum load (KG)	3000KG			
Weight (KG)	6540	7070	7160	7650
Phase	Three-phase			
Power supply rated voltage (V)	380V			
Frequency (HZ)	50HZ			
Overall power supply protection level	IP54			

Note:

1. Workpiece accuracy depends on factors like type, pre-treatment, sheet size, and position.
2. Technical parameters are subject to change without notice. Final parameters are based on the order agreement.

Cutting Parameters

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Material	Thickness (mm)	12kW	15kW	20kW	30kW	Gas
		Cutting speed (m/min)				
Stainless steel	6	13-15	15-18	18-22	22-25	N2/air
	8	8-10	10-12	13-16	18-22	N2/air
	10	6.5-7.5	8-9	11-13	14-18	N2/air
	12	5-5.5	6-7	9-11	12-14	N2/air
	14	3-3.5	4-4.5	7-9	10-12	N2/air
	16	2-2.3	2.9-3.1	6-7	8-9	N2/air
	18	1.3-1.5	2.2-2.4	3.5-4.5	6-7	N2/air
	20	1.2-1.4	1.9-2.1	3.5-4.5	5-6	N2/air
	25	0.7-0.9	1.2-1.4	1.8-2.5	2.5-3	N2/air
	30	0.25-0.3	0.8-1	1.4-1.6	1.5-2	N2/air
	35	0.2-0.25	0.5-0.65	0.8- 1.2	1.2- 1.5	N2/air
	40	0.15-0.2	0.4-0.5	0.5-0.8	0.8-1.2	N2/air
	45	0.05-0.1	0.25-0.3	0.3-0.5	0.75-0.8	N2/air
	50	0.05-0.1	0.2-0.4	0.2-0.3	0.6-0.8	N2/air
	60			0. 15-0.2	0. 15-0.2	N2/air
	70			0. 1-0. 13	0. 1-0. 13	N2/air
	80				0.08-1.1	N2/air
	90				0.05-0.06	N2/air
Carbon steel	5	15-18	20-23	23-28	24-30	N2/Air
	6	10-13	17-19	18-20	25-28	N2/Air
	8	7-10	10-12	14-16	18-22	N2/Air
	10	6-6.5	7-8	9-12	14-17	N2/Air
	14	1.6-1.8(O2)	4.5-5.5	6-8	8-10	N2/Air
	16	1.5-1.6(O2)	3-3.5(O2)	5-6	7.5-8.5	N2/Air
	18	1.35-1.5(O2)	1.35-1.6(O2)	3.2-4	5.5-6.5	N2/Air
	20	1.3-1.4(O2)	1.3-1.5(O2)	2.7-3.2(O2)	5-5.5	N2/Air
	25	0.8-1(O2)	0.95-1.2(O2)	1.4- 2.6(O2)	3-3.5	N2/Air
	30	0.4-0.5	0.6-0.95	1.2- 2.2	1.3- 2.8	O2
	35	0.3-0.4	0.5-0.6	0.9- 1.8	1.0- 2.0	O2
	40	0.25-0.3	0.3-0.35	0.8-1.2	0.9- 1.8	O2
	50	0.18	0.2-0.25	0.3-0.7	0.8-1.2	O2
	60		0.18-0.2	0.17-0.22	0.5-0.6	O2
	70				0.2-0.3	O2
	80				0.12-0.15	O2

Note:

1. Due to variations in material carbon content, the cutting parameters table is for reference only and should be based on actual conditions.
2. Dark-colored areas in the table indicate that full-sheet processing is not possible and only sample cutting is allowed.

Cutting Parameters

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Material	Thickness (mm)	12kW	15kW	20kW	30kW	Gas
		Cutting speed (m/min)				
Brass	5	13- 16	13- 17	18-20	18-20	N2/air
	8	6.0-8.0	6-8.5	9.0-11	10-15	N2/air
	10	4.5-5.5	5-6.5	6.0- 8.5	7.0- 10	N2/air
	12	1.8-2	2-2.2	4.0-6.0	4.0-7.0	N2/air
	14	1.2-1.4	1.4-1.6	2.5-3.5	3.0-4.5	N2/air
	16	0.8-1.0	1.2-1.3	2.0-3.0	1.5-2.5	N2/air
	20	0.3-0.5	0.6-0.75	0.8-1.0	0.7-1.0	N2/air
	30			0.5- 0.6	0.4- 0.6	N2/air
Aluminum	5	15- 17	15-20	21-24	20-24	N2/air
	8	6.5- 9.0	9.0- 11	16-20	15-20	N2/air
	10	5.0-6.0	6.0-8.0	14- 16	8.0-13	N2/air
	16	1.3- 1.8	1.8-2.5	2.0-3.0	5.0-7.0	N2/air
	20	0.8- 1.2	0.8- 1.5	1.5-2.2	2.0-3.5	N2/air
	30	0.3-0.5	0.4-0.6	0.5-0.8	0.8-1.0	N2/air
	35	0.25-0.3	0.3-0.4	0.4- 0.6	0.6- 0.7	N2/air
	40	0.2-0.25	0.2-0.3	0.3- 0.5	0.4-0.6	N2/air
	50	0. 1-0.15	0.2-0.25	0.15-0.2	0.3-0.4	N2/air
	60			0.1-0.15	0.2-0.3	N2/air

Note:

1. Due to variations in material carbon content, the cutting parameters table is for reference only and should be based on actual conditions.
2. Dark-colored areas in the table indicate that full-sheet processing is not possible and only sample cutting is allowed.

Cost-Benefit Analysis

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Item		12kW			15kW			20kW			30kW		
		Air	O2	N2	Air	O2	N2	Air	O2	N2	Air	O2	N2
Peak power consumption	Laser source (kW)	32	32	32	46	46	46	57	57	57	90	90	90
	Chiller (kW)	11	11	11	21	21	21	21	21	21	29	29	29
	Air compressor (kW)	22			37			37			37		
	Machine tool host (kW)	20	20	20	20	20	20	20	20	20	20	20	20
	Dust removal (kW)	3	3	3	3	3	3	3	3	3	3	3	3
Consumables and gas consumption (CNY/H)		0.5	4.5	60.5	0.5	4.5	60.5	0.5	4.5	60.5	0.5	4.5	60.5
Total power(kW)		88	66	66	127	90	90	138	101	101	179	142	142
Total power consumption (kW/H)		52.8	39.6	39.6	76.2	54	54	82.8	60.6	60.6	107.4	85.2	85.2
Total operating cost (1RMB/kWH)		53.3	44.1	100.1	76.7	58.5	114.5	83.3	65.1	121.1	107.9	89.7	145.7

If the cutting auxiliary gas is dried compressed air, the cost includes air compressor electricity, machine power consumption, and consumables (protective lenses, cutting nozzles).

Note:

1. The electricity and gas prices are for reference only and may vary by region.
2. Auxiliary gas consumption varies with plate thickness; values are based on 16mm carbon steel for oxygen and 1mm stainless steel for nitrogen, for reference.

Configuration List

K3015HM

No.	Item	Qty	Brand
	Laser source		
1	Laser source	1	Max
	Laser cutting head		
1	Laser cutting head	1	BOCI
	Machine Tool & Host		
1	Transmission system	4	KREXON
2	Machine tool and accessory	1	KREXON
3	Bed burn-resistant component	1	Graphite plate
4	Reducer	3	Japan SHIMPO
5	Electrical and pneumatic systems	1	SCHNEIDER, France AVENTICS, Germany
6	AC servo motor and driver	4	Fuji Electric, Japan
7	Water cooler	1	Tongfei
	CNC cutting system		
1	CNC laser cutting system	1	FSCUT

Note:

1. This is KREXON's optimized configuration. Changes in brand or configuration may cause irreversible effects.
2. The warranty period for the entire machine (excluding consumables, non-force majeure natural disasters, war, improper operation, and human damage) is 1 year.

K3015HM-Laser Source



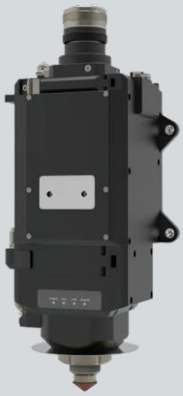




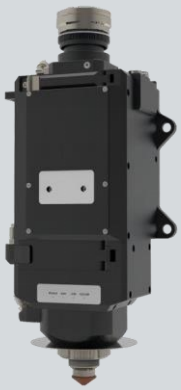
12kW~30kW optional power

1. High power, high-quality laser output
2. Compact structure, smaller size
3. Excellent performance, low processing cost
4. High reflection resistance
5. Modular design, easy maintenance
6. Wide range of applications

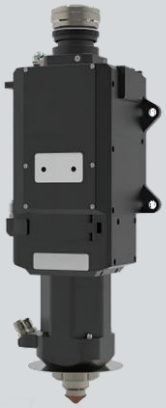
K3015HM-Laser Cutting Head



12kW - 15kW



20kW



30kW

1. Collision Protection for Cutting Head: Users can replace the collision component directly without needing to replace the cutting head, reducing the likelihood of returns.
2. Protective Lens Temperature Monitoring: If contamination is detected during operation, the system immediately triggers an alarm and stops the machine to prevent potential damage to the head or lenses.
3. Cutting Pressure Monitoring: Continuously monitors gas pressure during operation; if the pressure is insufficient, too low, or unstable, an immediate alarm is triggered.
4. Protective Lens Explosion Detection: Continuously monitors stray light values on the protective lens, with alarms triggered if they exceed the threshold.
5. Pan Seal Failure Detection: Continuously monitors the gas pressure in the Lower 1and Lower 2 protective lens chambers to ensure stable production.
6. Process Monitoring: Automatically re-cuts if the sheet isn't fully cut through.
7. Smart Piercing: Begins cutting immediately after piercing is complete, improving efficiency and protecting the machine.
8. Intelligent Knife Retraction: Sensors automatically adjust the retraction process to prevent burrs and damage to the workpiece.
9. Edge-Piercing Monitoring: Automatically adjusts the piercing process when thermal deformation or misalignment of the sheet is detected, extending the lifespan of the lens.

K3015HM-Machine Bed System

1

Heavy-duty Thermal Isolation Hollow Bed

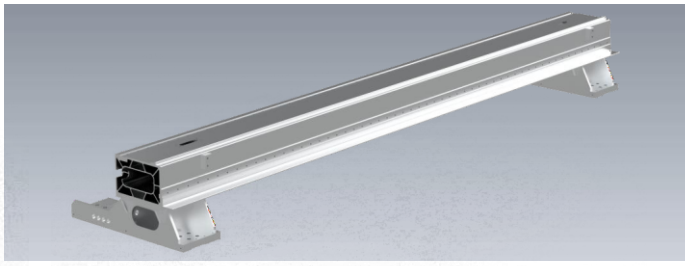
1. The bed is welded from high-quality steel plates and tubes, then stress-relieved, aged, and precisely machined on a large gantry milling machine, ensuring stability, vibration resistance, and the ability to withstand high acceleration.
2. The bed structure blocks heat transfer, preventing cutting heat from affecting accuracy and ensuring long-term use without deformation, extending the equipment's lifespan.



2

Aircraft-grade High-strength Aluminum Beam

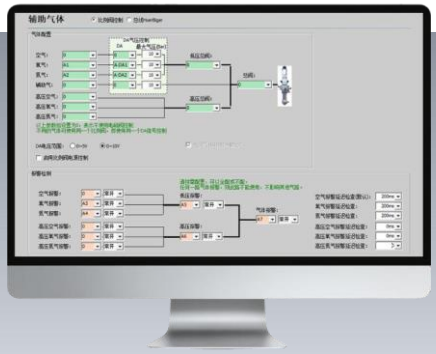
1. The beam is made from aerospace-grade high-strength aluminum alloy, processed with extrusion, quenching, and aging, offering excellent rigidity, surface quality, corrosion resistance, and lightweight durability.
2. The internally optimized structure ensures excellent dynamic performance during high-speed laser processing, maintaining precision and enabling cutting of various shapes.



3

Pneumatic System

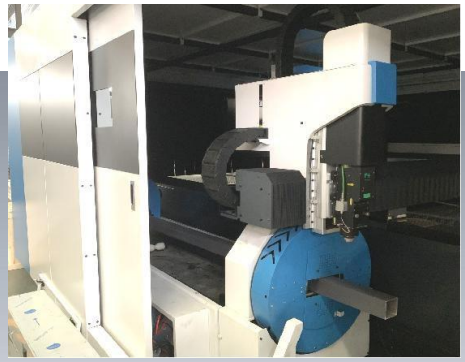
1. The air system uses control valves and proportional regulators from well-known brands to electrically control the pressure and flow of each gas path.
2. Cutting auxiliary gases (O2, N2, compressed air, etc.).



4

Plate and Tube Cutting in One Machine

1. The K3015HM offers both plate and tube cutting capabilities, doubling efficiency.



K3015HM-Machine Bed System

5

Smart Spiral Negative Pressure Dust Collection

1. The smart dust collection system automatically controls exhaust vents based on the cutting position, enabling time-based, zoned, and segmented ventilation.
2. Achieve smoke-free cutting thanks to the return-type sealing structure design at the bottom of the base.



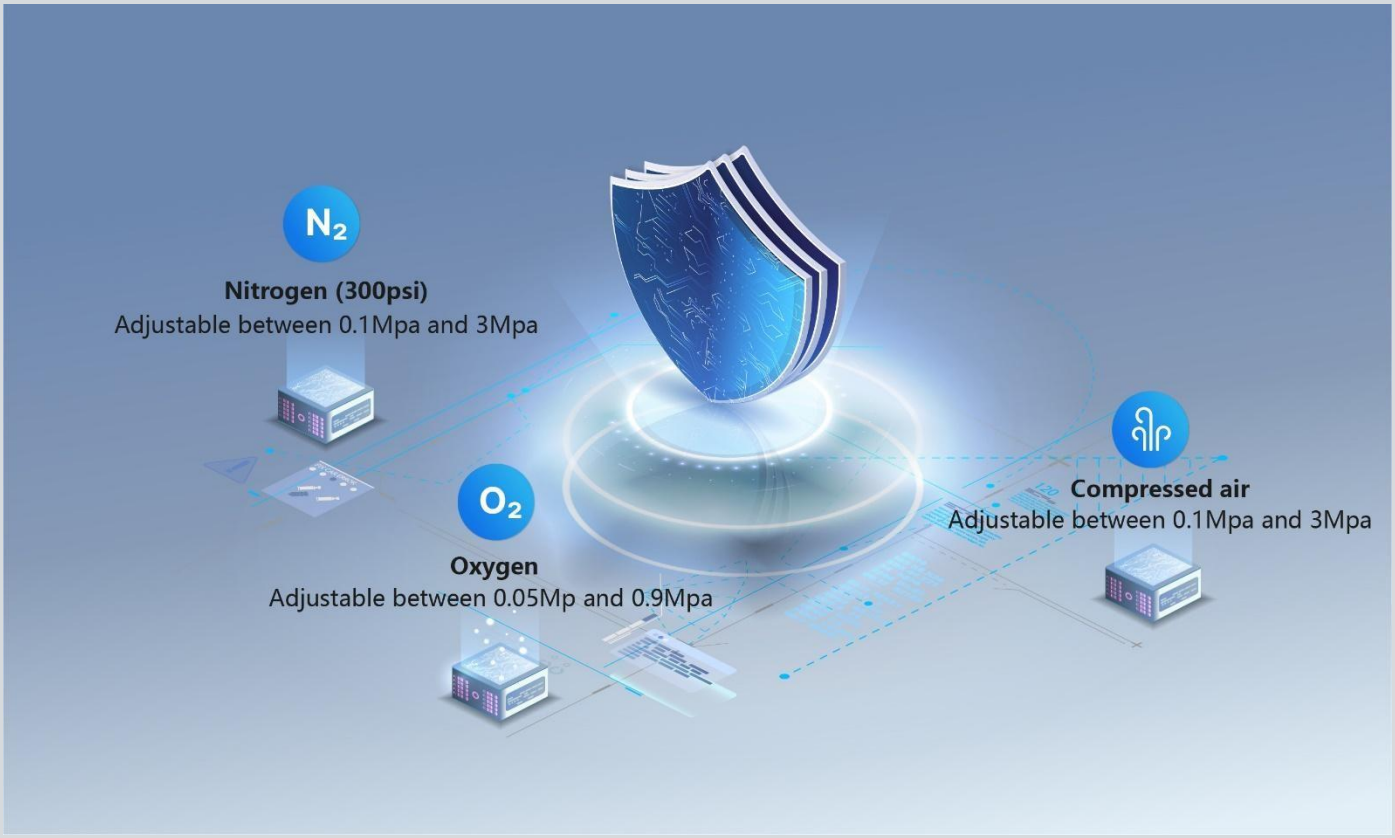
6

Visual Monitoring Safety Protection

1. The all-around monitoring system significantly reduces blind spots for operators, ensuring safe and stable cutting operations.



Auto Gas Distribution System



Precise Control of Each Gas Flow

The CNC laser cutting machine has two separate gas lines: nitrogen (air) and oxygen. Each gas line can be independently controlled for flow rate and pressure.

- The equipment software terminal is equipped with an automatic auxiliary gas selection feature.
- The type and pressure of auxiliary gases can be automatically set and selected through the CNC program, eliminating the need for manual operation.
- The actual gas pressure at the cutting head outlet can be easily read and displayed on the panel in real-time.

CNC System



This intelligent bus system is specifically designed for fiber laser cutting. It integrates motion control, laser source control, and cutting gas control, offering stability, reliability, easy deployment, simple debugging, production safety, and a rich set of features with excellent performance. It offers modular, customizable, automated, and informational solutions. The system features memory buffering and a comprehensive cutting process database, offering optimized parameters for various materials and thicknesses. This ensures fast operation and efficient cutting, making it ideal for industries such as sheet metal, kitchenware, and lighting.

- Supported file formats: Direct processing of DXF files and high-speed reading and writing of LXDS and NRP files generated by CypNest.
- Equipped with a cutting database, allowing real-time adjustments during cutting to achieve optimal processing quality.
- Features: Multi-stage piercing, sharp corner entry, and centering significantly enhance high-power cutting efficiency and stability.
- Optimized for various rapid travel modes, including the "LeapFrog" function.

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