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WELDING & CUTTING EQUIPMENT
KARA
KARA GROUP

CATALOGUE

KARA
FIBER LASER
CUTTING MACHINE

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1. Preface

With the advancement of technology and industrial development, the demand for higher speed, precision, and efficiency has become widespread globally in order to remain competitive in the market and meet diverse needs. In Iran, this demand initially grew gradually and later evolved in line with global industries. Karasazeh Welding and Cutting Industries is proud to be among the first manufacturers of welding and cutting machines as well as related industrial automation systems in the country.

Relying on technical expertise, years of experience, and the capabilities of skilled domestic specialists, Karasazeh has consistently strived to design and manufacture products tailored to the real needs of national industries. By thoroughly understanding the challenges in the field of production and industrial cutting, the company has provided innovative, reliable, and cost-effective solutions for manufacturers.

One of the most significant achievements of Karasazeh is the design and production of laser cutting machines utilizing state-of-the-art technology. These machines are developed to enhance cutting accuracy, speed, and quality, reduce waste, and optimize production processes, thereby meeting a wide range of industrial demands across various sectors. They enable precise and uniform cutting of different materials and play a vital role in improving production line efficiency.

Through the use of modern equipment, advanced control systems, standard software, and high-quality components, Karasazeh has succeeded in delivering products comparable to international models while being adapted to the working conditions of domestic industries. The company's focus on technology localization, continuous technical support, and the development of industrial automation systems represents its key approach toward progress and innovation.

Beyond manufacturing, Karasazeh provides services such as professional consultation, installation and commissioning, operator training, and extensive after-sales support, always standing by its customers and striving to maintain their trust and satisfaction as its most valuable asset.

Today, Karasazeh Welding and Cutting Industries, with a forward-looking vision, continues on the path of sustainable development, quality enhancement, and responsiveness to diverse market needs, committed to playing an effective role in the growth and prosperity of Iran's industry.

2. Introduction

Laser cutting machines, as one of the most advanced cutting technologies in modern industries, play a vital role in enhancing precision, speed, and quality in production processes. By utilizing a concentrated laser beam, this technology enables cutting of various materials with minimal error, maximum accuracy, and without direct contact with the workpiece.

With the growing need for precise, uniform, and repeatable production, laser cutting machines have rapidly expanded as an efficient alternative to traditional cutting methods. Reduced waste, increased productivity, the ability to execute complex designs, and lower operational costs are among the key advantages of this technology.

Equipped with advanced control systems and design/manufacturing software, laser cutting machines provide fast and accurate cutting across diverse dimensions and applications. They are widely used in industries such as metalworking, signage, decoration, handicrafts, automotive, and packaging. Today, the adoption of this technology is not merely an option but an inevitable necessity for industrial units seeking to improve product quality and maintain their competitive position in the market.

The **Fiber Laser Cutting Machine** from Karasazeh Welding and Cutting Industries is a professional CNC machine designed for high-speed and efficient production of metal parts using laser technology. This machine is capable of cutting **carbon steel, stainless steel, aluminum, and copper** with high speed, precision, and dynamic performance.

The machine chassis is built from industrial profiles and reinforced sheets, ensuring high mechanical strength against pressure and vibration. Designed after thermal and mechanical stress-relief processes, the structure prevents deformation or metal fatigue over time, resulting in exceptional stability and extended service life.

The machine gantry is made of durable yet lightweight aluminum, significantly improving movement speed and accuracy while reducing overall weight. It undergoes precise stress-relief treatment to withstand continuous pressure and vibrations during cutting operations, maintaining complete stability. The combination of high strength and low weight ensures smooth, fast, and error-free motion. *Cutting of non-ferrous metals such as aluminum and copper is optional and available upon customer request.*

The laser cutting machine includes the main unit, cutting table, laser source, and operator control systems. Its **open structure** allows free access to the table from all sides, giving operators full accessibility to raw materials and cut parts.

The drive system uses a **Rack & Pinion mechanism** with parallel movement from both sides. Featuring **low-backlash technology** and highly precise rack and pinion gears, it ensures smooth and accurate longitudinal motion. This technology continuously maintains precise control and movement throughout operation.

The control system, based on **IPC technology**, offers specialized laser cutting capabilities with ease of use. It manages not only the longitudinal and transverse axes but also the laser head's height and distance from the sheet, as well as precise laser power control. Dust extraction system: available as a central unit upon customer request.

• Controlled Axes

The CNC system of the laser cutting machine manages the following axes:

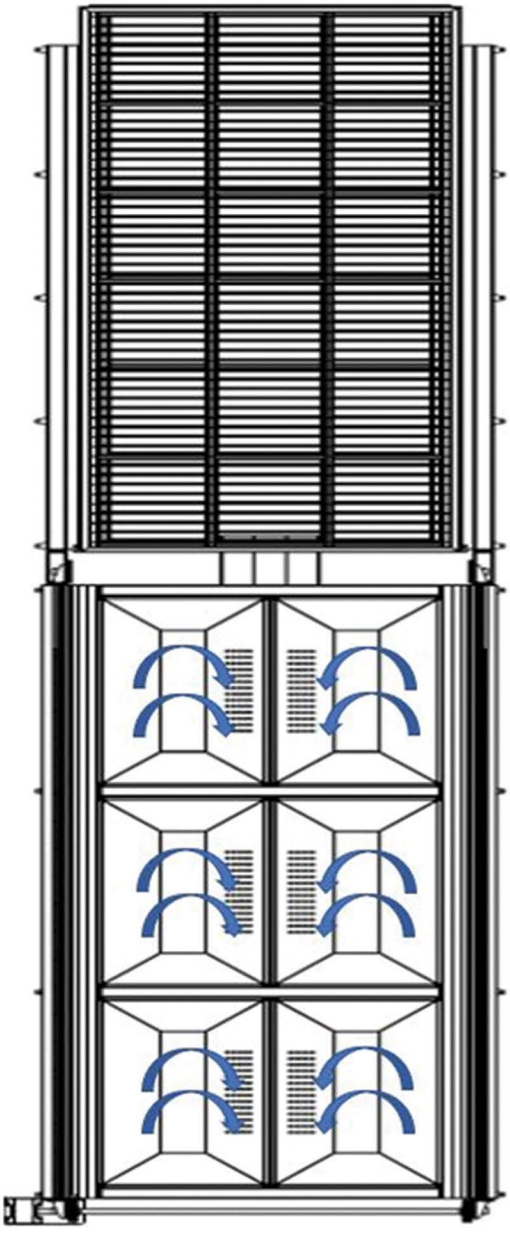
- Longitudinal axis
- Transverse axis
- Laser head height from the workpiece surface

All axes are controlled and positioned with high accuracy using **servo systems** under real-time industrial network control, operating in full synchronization.

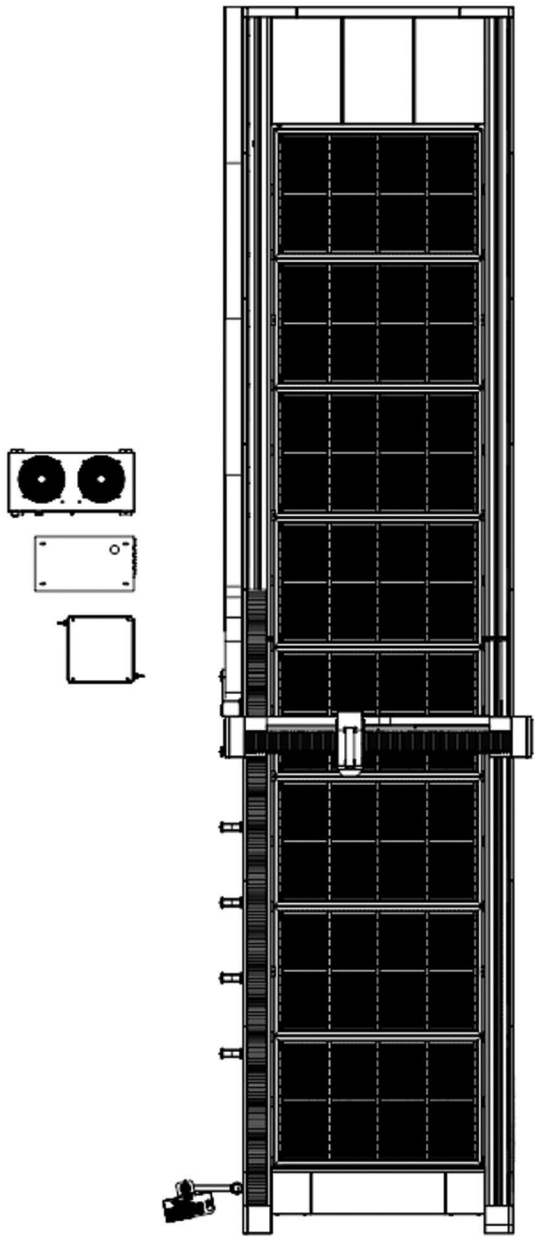
To enhance productivity and operator flexibility, the machine can be controlled remotely from different locations. The remote control system is industrial-grade, impact-resistant, and uses standard coded communication, ensuring no interference with other systems.

3. Overview

- Central Dust Extraction System

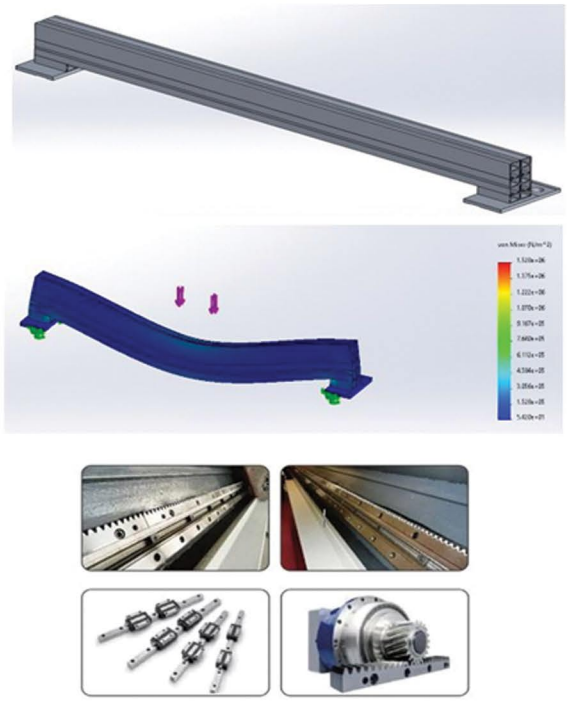


- Top View



3. Overview

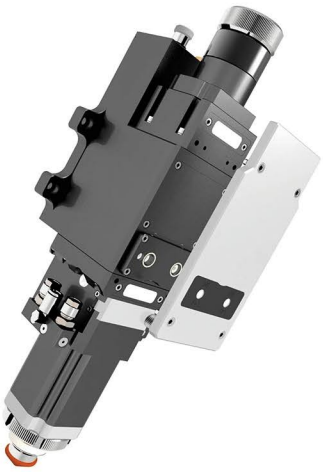
- Central Dust Extraction System



- FSCUT Control System

- Laser Source

- Auto Focus Cutting Head



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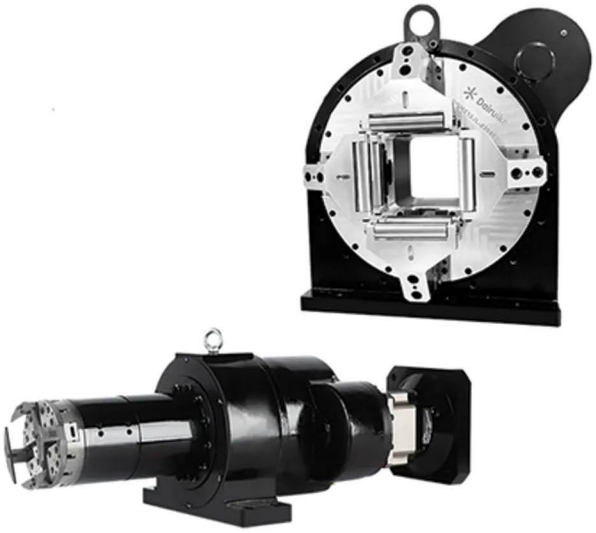
- Tube and Profile Cutting



- Bevel Cutting

- Laser Cooling Chiller

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Technical Specifications

No	Model	KCFL 12030	KCFL 12020	KCFL 6025	KCFL 6020	KCFL 3015
1	Power	1000 - 20000 Watt	1000 - 20000 Watt	1000 - 20000 Watt	1000 - 20000 Watt	1000 - 20000 Watt
2	Dimensions workbench	12000 x 3000 mm	12000 x 2200 mm	6000 x 2500 mm	6000 x 2200 mm	3000 x 1500 mm
3	Overall Machine's Dimension	~ 15000 x 4500 mm	~ 15000 x 3500 mm	~ 7500 x 4000 mm	~ 7500 x 3500 mm	~ 4500 x 2500 mm
4	Z-Axis Travel	100 mm	100 mm	100 mm	100 mm	100 mm
5	Linear Positioning accuracy	50 µm	50 µm	50 µm	50 µm	50 µm
6	Cutting surface roughness Ra	1-10 µm	1-10 µm	1-10 µm	1-10 µm	1-10 µm
7	Cutting Thickness	According to the ordered laser power	According to the ordered laser power	According to the ordered laser power	According to the ordered laser power	According to the ordered laser power
8	Maximum jogging speed	70 m/min	70 m/min	70 m/min	70 m/min	70 m/min
9	Maximum Acceleration	G 2	G 2	G 2	G 2	G 2
10	Machine's control system	PC Base	PC Base	PC Base	PC Base	PC Base
11	Protection classification	IP 45	IP 45	IP 45	IP 45	IP 45
12	Machine's Electric Power Consumption	380V-50 Hz-3PH	380V-50 Hz-3PH	380V-50 Hz-3PH	380V-50 Hz-3PH	380V-50 Hz-3PH
13	Cable protection & guidance system	Energy chain guide	Energy chain guide	Energy chain guide	Energy chain guide	Energy chain guide

5. After-Sales Services

Karasazeh Welding and Cutting Industries, with the goal of achieving complete customer satisfaction and providing comprehensive support, offers a wide range of after-sales services for its laser cutting machines. These services include:

- **Initial Installation and Commissioning**: Performed by a team of trained specialists to ensure proper machine operation.
- **Operator Training:** Comprehensive training courses to guarantee safe and efficient use of the machine.
- **Valid Warranty:** Coverage of main components and repair services within the specified warranty period.
- **Spare Parts Supply:** Fast access to original, high-quality spare parts to prevent production downtime.
- **Technical Support:** Consultation and troubleshooting via phone, online assistance, or on-site service.
- **Periodic Inspection and Maintenance:** Scheduled preventive maintenance programs to extend the machine's service life and ensure consistent performance.

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Cutting Parameters - 1000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	10	1000	Air / N_2	10	1.5 S	0	1
2	Carbon Steel	1	10	1000	O_2	0.6	1.2 D	+3	0.8
		2	4	1000	O_2	0.6	1.2 D	+3	0.8
		3	3	1000	O_2	0.6	1.2 D	+3	0.8
		4	2.3	1000	O_2	0.6	1.2 D	+3	0.8
		5	1.8	1000	O_2	0.6	1.2 D	+3	0.8
		6	1.5	1000	O_2	0.6	1.5 D	+3	0.8
		8	1.1	1000	O_2	0.6	1.5 D	+3	0.8
		10	0.8	1000	O_2	0.6	2.5 D	+3	0.8
3	Stainless Steel	1	13	1000	N_2	12	1.5 S	0	0.5
		2	6	1000	N_2	12	2.0 S	-1	0.5
		3	3	1000	N_2	12	3.0 S	-1.5	0.5
		4	1	1000	N_2	14	3.0 S	-2	0.5
		5	0.6	1000	N_2	16	3.5 S	-2.5	0.5
4	Aluminum	1	10	1000	N_2	12	1.5 S	0	0.8
		2	5	1000	N_2	14	2.0 S	-1	0.5
		3	1.5	1000	N_2	16	3.0 S	-1.5	0.5
5	Brass	1	9	1000	N_2	12	2.0 S	0	0.8
		2	2	1000	N_2	14	2.0 S	-1	0.5
		3	0.8	1000	N_2	16	3.0 S	-1.5	0.5

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Cutting Parameters - 1500W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	10	1500	Air / N_2	10	1.5 S	0	1
2	Carbon Steel	1	10	1500	O_2	0.6	1.2 D	+3	0.8
		2	5	1500	O_2	0.6	1.2 D	+3	0.8
		3	3.6	1500	O_2	0.6	1.2 D	+3	0.8
		4	2.5	1500	O_2	0.6	1.2 D	+3	0.8
		5	1.8	1500	O_2	0.6	1.2 D	+3	0.8
		6	1.4	1500	O_2	0.6	1.5 D	+3	0.8
		8	1.2	1500	O_2	0.6	1.5 D	+3	0.8
		10	1	1500	O_2	0.6	2.0 D	+2.5	0.8
		12	0.8	1500	O_2	0.6	2.5 D	+2.5	0.8
		14	0.65	1500	O_2	0.6	3.0 D	+2.5	0.8
		16	0.5	1500	O_2	0.6	3.0 D	+2.5	0.8
3	Stainless Steel	1	20	1500	N_2	10	1.5 S	0	0.8
		2	7	1500	N_2	12	2.0 S	-1	0.5
		3	4.5	1500	N_2	12	2.5 S	-1.5	0.5
		5	1.5	1500	N_2	14	3.0 S	-2.5	0.5
		6	0.5	1500	N_2	16	3.0 S	-3	0.5
4	Aluminum	1	18	1500	N_2	12	1.5 S	0	0.8
		2	6	1500	N_2	14	2.0 S	-1	0.5
		3	2.5	1500	N_2	14	2.5 S	-1.5	0.5
		4	0.8	1500	N_2	16	3.0 S	-2	0.5
5	Brass	1	15	1500	N_2	12	1.5 S	0	0.8
		2	5	1500	N_2	14	2.0 S	-1	0.5
		3	1.8	1500	N_2	14	2.5 S	-1.5	0.5

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Cutting Parameters - 2000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	25	2000	Air / N_2	10	1.5 S	0	1
		2	9	2000	Air / N_2	10	2.0 S	-1	0.5
2	Carbon Steel	1	10	2000	O_2	0.6	1.2 D	+3	0.8
		2	5.2	2000	O_2	0.6	1.2 D	+3	0.8
		3	4.2	2000	O_2	0.6	1.2 D	+3	0.8
		4	3	2000	O_2	0.6	1.2 D	+3	0.8
		5	2.2	2000	O_2	0.6	1.2 D	+3	0.8
		6	1.8	2000	O_2	0.6	1.2 D	+3	0.8
		8	1.3	2000	O_2	0.6	2.0 D	+2.5	0.8
		10	1.1	2000	O_2	0.6	2.0 D	+2.5	0.8
		12	0.9	2000	O_2	0.6	2.5 D	+2.5	0.8
		14	0.8	2000	O_2	0.6	3.0 D	+2.5	0.8
		16	0.7	2000	O_2	0.6	3.5 D	+2.5	0.8
		18	0.5	2000	O_2	0.6	4.0 D	+3	0.8
		20	0.4	2000	O_2	0.6	4.0 D	+3	0.8
3	Stainless Steel	1	28	2000	N_2	10	1.5 S	0	0.8
		2	10	2000	N_2	12	2.0 S	-1	0.5
		3	5	2000	N_2	12	2.0 S	-1.5	0.5
		4	3	2000	N_2	14	2.5 S	-2	0.5
		5	2	2000	N_2	14	3.0 S	-2.5	0.5
		6	1.5	2000	N_2	14	3.0 S	-3	0.5
		8	0.6	2000	N_2	16	3.0 S	-4	0.5
4	Aluminum	1	20	2000	N_2	12	1.5 S	0	0.8
		2	10	2000	N_2	12	2.0 S	-1	0.5
		3	4	2000	N_2	14	2.0 S	-1.5	0.5
		4	1.5	2000	N_2	14	2.5 S	-2	0.5
		5	0.9	2000	N_2	16	3.0 S	-2.5	0.5
		6	0.6	2000	N_2	16	3.0 S	-3	0.5
5	Brass	1	18	2000	N_2	12	1.5 S	0	0.8
		2	8	2000	N_2	12	2.0 S	-1	0.5
		3	3	2000	N_2	14	2.5 S	-1.5	0.5
		4	1.3	2000	N_2	16	3.0 S	-2	0.5
		5	0.8	2000	N_2	16	3.0 S	-2.5	0.5

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Cutting Parameters - 3000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	35	3000	Air / N_2	10	1.5 S	0	1
		2	20	3000	Air / N_2	10	2.0 S	0	0.5
2	Carbon Steel	1	10	3000	O_2	0.6	1.0 D	+3	0.8
		2	5.5	3000	O_2	0.6	1.0 D	+3	0.8
		3	4	3000	O_2	0.6	1.0 D	+4	0.8
		4	3.5	3000	O_2	0.6	1.0 D	+4	0.8
		5	3.2	3000	O_2	0.6	1.2 D	+4	0.8
		6	2.7	3000	O_2	0.6	1.2 D	+4	0.8
		8	2.2	3000	O_2	0.6	1.2 D	+4	0.8
		10	1.5	3000	O_2	0.6	1.2 D	+4	0.8
		12	1	3000	O_2	0.6	3.0 D	+4	0.8
		14	0.9	3000	O_2	0.6	3.0 D	+4	0.8
		16	0.75	3000	O_2	0.6	3.5 D	+4	0.8
		18	0.65	3000	O_2	0.6	4.0 D	+4	0.8
		20	0.6	3000	O_2	0.6	4.0 D	+4	0.8
		22	0.55	3000	O_2	0.6	4.0 D	+4	0.8
3	Stainless Steel	1	45	3000	N_2	10	1.5 S	0	0.8
		2	24	3000	N_2	12	2.0 S	0	0.5
		3	10	3000	N_2	12	2.5 S	-0.5	0.5
		4	6.5	3000	N_2	14	2.5 S	-1.5	0.5
		5	3.6	3000	N_2	14	3.0 S	-2.5	0.5
		6	2.7	3000	N_2	14	3.0 S	-3	0.5
		8	1.2	3000	N_2	14	3.5 S	-4.5	0.5
		10	0.8	3000	N_2	16	4.0 S	-6	0.5
4	Aluminum	1	20	3000	N_2	12	1.5 S	0	0.8
		2	10	3000	N_2	12	2.0 S	0	0.5
		3	4	3000	N_2	14	2.0 S	-1	0.5
		4	1.5	3000	N_2	14	2.5 S	-2	0.5
		5	0.9	3000	N_2	16	3.0 S	-3	0.5
		6	0.6	3000	N_2	16	3.0 S	-3.5	0.5
		8	0.9	3000	N_2	16	3.5 S	-4	0.5
5	Brass	1	28	3000	N_2	12	1.5 S	0	0.8
		2	15	3000	N_2	12	2.0 S	-1	0.5
		3	6	3000	N_2	14	2.5 S	-1.5	0.5
		4	3	3000	N_2	14	3.0 S	-2	0.5
		5	2.2	3000	N_2	14	3.0 S	-2.5	0.5
		6	1.3	3000	N_2	16	3.0 S	-3	0.5

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Cutting Parameters - 4000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	35	4000	Air / N_2	10	1.5 S	0	1
		2	15	4000	Air / N_2	10	2.0 S	-1	0.5
		3	10	4000	Air / N_2	10	2.0 S	-1.5	0.5
2	Carbon Steel	1	10	4000	O_2	0.6	1.2 D	+3	0.8
		2	5.5	4000	O_2	0.6	1.2 D	+3	0.8
		3	4.5	4000	O_2	0.6	1.2 D	+3	0.8
		4	3.5	4000	O_2	0.6	1.2 D	+3	0.8
		5	3.2	4000	O_2	0.6	1.2 D	+3	0.8
		6	2.8	4000	O_2	0.6	1.2 D	+3	0.8
		8	2.3	4000	O_2	0.6	1.2 D	+3	0.8
		10	2	4000	O_2	0.6	1.2 D	+3	0.8
		12	1.2	4000	O_2	0.5	3.0 D	+2.5	0.8
		14	1.0	4000	O_2	0.5	3.5 D	+2.5	0.8
		16	0.8	4000	O_2	0.5	3.5 D	+2.5	0.8
		18	0.7	4000	O_2	0.5	4.0 D	+2.5	0.8
		20	0.65	4000	O_2	0.5	4.0 D	+3	0.8
		22	0.6	4000	O_2	0.5	4.5 D	+3	0.8
		25	0.5	4000	O_2	0.5	5.0 D	+3	0.8
3	Stainless Steel	1	40	4000	N_2	10	1.5 S	0	0.8
		2	20	4000	N_2	12	2.0 S	-1	0.5
		3	12	4000	N_2	12	2.5 S	-1.5	0.5
		4	7	4000	N_2	14	2.5 S	-2	0.5
		5	4.5	4000	N_2	14	3.0 S	-2.5	0.5
		6	3.5	4000	N_2	14	3.0 S	-3	0.5
		8	1.8	4000	N_2	14	3.5 S	-4	0.5
		10	1.2	4000	N_2	16	4.0 S	-5	0.5
		12	0.8	4000	N_2	16	4.0 S	-6	0.5
4	Aluminum	1	30	4000	N_2	12	1.5 S	0	0.6
		2	20	4000	N_2	12	2.0 S	-1	0.5
		3	13	4000	N_2	14	2.0 S	-1.5	0.5
		4	7	4000	N_2	14	2.5 S	-2	0.5
		5	5	4000	N_2	16	2.5 S	-2.5	0.5
		6	3	4000	N_2	16	3.0 S	-3	0.5
		8	1.3	4000	N_2	16	3.0 S	-4	0.5
		10	0.8	4000	N_2	16	3.5 S	-5	0.5
5	Brass	1	28	4000	N_2	12	1.5 S	0	0.6
		2	15	4000	N_2	12	1.5 S	-1	0.5
		3	8	4000	N_2	14	2.0 S	-1	0.5
		4	5	4000	N_2	14	2.5 S	-2	0.5
		5	3	4000	N_2	14	3.0 S	-2	0.5
		6	2.5	4000	N_2	16	3.0 S	-2.5	0.5
		8	1	4000	N_2	16	3.0 S	-4	0.5

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Cutting Parameters - 6000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	45	6000	Air / N_2	12	1.5 S	0	1
		2	25	6000	Air / N_2	12	2.0 S	-1	0.5
		3	14	6000	Air / N_2	14	2.0 S	-1.5	0.5
		4	8	6000	Air / N_2	14	2.0 S	-2	0.5
		5	6.4	6000	Air / N_2	16	3.0 S	-2.5	0.5
		6	5	6000	Air / N_2	16	3.5 S	-3	0.5
2	Carbon Steel	1	10	1500	O_2	0.6	1.2 E	+3	0.8
		2	5.5	1800	O_2	0.6	1.2 E	+3	0.8
		3	3.6 – 4.2	2400	O_2	0.6	1.2 E	+3	0.8
		4	3.3 – 3.8	2400	O_2	0.6	1.2 E	+3	0.8
		5	3 – 3.6	3000	O_2	0.6	1.2 E	+3	0.8
		6	2.7 – 3.2	3000	O_2	0.6	1.2 E	+3	0.8
		8	2.2 – 2.5	6000	O_2	0.6	1.2 E	+3	0.8
		10	2.0 – 2.3	6000	O_2	0.6	1.2 E	+4	0.8
		12	0.9 – 1	6000	O_2	0.6	3.0 D	+2.5	0.8
		12	1.9 – 2.1	6000	O_2	0.6	1.2 E	+5	0.8
		14	0.8 – 0.9	6000	O_2	0.6	3.5 D	+2.5	0.8
		14	1.4 – 1.7	6000	O_2	0.6	1.4 E	+5	1
		16	0.8 – 0.9	6000	O_2	0.6	4.0 D	+2.5	0.8
		16	1.2 – 1.4	6000	O_2	0.6	1.4 E	+6	1
		18	0.65 – 0.75	6000	O_2	0.6	4.0 D	+2.5	0.8
		20	0.6 – 0.7	6000	O_2	0.6	4.0 D	+3	0.8
		22	0.55 – 0.65	6000	O_2	0.6	4.0 D	+3	0.8
		25	0.5	6000	O_2	0.5	5.0 D	+3	1
3	Stainless Steel	1	60	6000	N_2	10	1.5 S	0	0.8
		2	30	6000	N_2	12	2.0 S	-1	0.5
		3	18	6000	N_2	12	2.5 S	-1.5	0.5
		4	12	6000	N_2	14	2.5 S	-2	0.5
		5	8	6000	N_2	14	3.0 S	-2.5	0.5
		6	5	6000	N_2	15	3.0 S	-3	0.5
		8	3.8	6000	N_2	15	3.5 S	-4	0.5
		10	2	6000	N_2	15	4.0 S	-6	0.5
		12	1.2	6000	N_2	16	4.0 S	-7.5	0.5
		14	1	6000	N_2	16	4.0 S	-9	0.5
		16	0.6	6000	N_2	18	4.0 S	-10.5	0.5
		18	0.5	6000	N_2	20	5.0 S	-11	0.3
		20	0.3	6000	N_2	20	5.0 S	-12	0.3
4	Aluminum	1	50	6000	N_2	12	1.5 S	0	1
		2	25	6000	N_2	12	2.0 S	-1	0.5
		3	16	6000	N_2	14	2.0 S	-1.5	0.5
		4	10	6000	N_2	14	2.5 S	-2	0.5
		5	6	6000	N_2	14	2.5 S	-3	0.5
		6	4	6000	N_2	16	3.0 S	-3	0.5
		8	2	6000	N_2	16	3.0 S	-4	0.5
		10	1.2	6000	N_2	18	3.5 S	-4.5	0.5
		12	0.7	6000	N_2	18	4.0 S	-5	0.5
		14	0.5	6000	N_2	18	4.0 S	-5	0.3
		16	0.4	6000	N_2	20	5.0 S	-8	0.3

KFLCM

Cutting Parameters - 6000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
5	Brass	1	40	6000	N_2	12	1.5 S	0	1
		2	20	6000	N_2	12	1.5 S	-1	0.5
		3	14	6000	N_2	14	2.0 S	-1	0.5
		4	9	6000	N_2	14	2.5 S	-1.5	0.5
		5	5.5	6000	N_2	14	3.0 S	-2	0.5
		6	3.8	6000	N_2	16	3.0 S	-2.5	0.5
		8	1.8	6000	N_2	16	3.0 S	-3	0.5
		10	1	6000	N_2	16	3.5 S	-3	0.5
		12	0.7	6000	N_2	16	3.5 S	-4	0.3

Cutting Parameters - 8000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	40-45	8000	Air / N_2	10	1.5 S	0	1
		2	30-35	8000	Air / N_2	12	2.0 S	0	0.5
		3	20-25	8000	Air / N_2	13	2.0 S	-1	0.5
		4	15-18	8000	Air / N_2	13	2.5 S	-1.5	0.5
		5	10-12	8000	Air / N_2	13	2.5 S	-2	0.5
		6	8-9	8000	Air / N_2	13	2.5 S	-2	0.5
		8	5-5.5	8000	Air / N_2	13	3.0 S	-3	0.5
2	Carbon Steel	8	2.3-2.5	4000	O_2	0.6	1.2 E	+4	0.8
		10	2.3	6000	O_2	0.6	1.2 E	+6	0.8
		12	2	7500	O_2	0.6	1.2 E	+7	0.8
		14	1.8	8000	O_2	0.6	1.4 E	+8	0.8
		16	1.6	8000	O_2	0.6	1.4 E	+9	0.8
		20	1.3	8000	O_2	0.6	1.6 E	+9	0.8
		22	0.65	8000	O_2	0.7	1.8 E	+9	0.8
		25	0.45	8000	O_2	0.7	1.8 E	+10	0.8
		30	0.25	8000	O_2	1.3	1.8 E	+11	1.2
		40	0.15	8000	O_2	1.5	1.8 E	+11.5	1.2
3	Stainless Steel	1	60	8000	N_2	10	2.0 S	0	1
		2	35	8000	N_2	12	2.0 S	0	0.5
		3	24	8000	N_2	13	2.0 S	0	0.5
		4	15	8000	N_2	12	2.0 S	-1	0.5
		5	10	8000	N_2	15	2.5 S	-1	0.5
		6	8	8000	N_2	8	3.5 B	-2	0.5
		8	5	8000	N_2	7	5.0 B	-2	0.5
		10	3.5	8000	N_2	5	5.0 B	-3	0.5
		12	2.5	8000	N_2	6	6.0 B	-4	0.5
		14	2	8000	N_2	6	7.0 B	-6	0.3
		16	1	8000	N_2	6	7.0 B	-8	0.3
		18	1.5	8000	N_2	14	5.0 B	-9	0.5
		20	0.8	8000	N_2	6	7.0 B	-11	0.3
		25	0.4	8000	N_2	6	7.0 B	-13	0.3
		30	0.2	8000	N_2	10	7.0 B	+8	0.3

KFLCM

Cutting Parameters - 8000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
4	Stainless Steel	1	60	8000	Air	10	2.0 S	0	1
		2	35	8000	Air	10	2.5 S	0	0.5
		3	25	8000	Air	10	2.5 S	0	0.5
		4	16	8000	Air	10	3.5 B	0	0.5
		5	10	8000	Air	10	3.2 B	0	0.5
		6	8	8000	Air	10	3.5 B	0	0.5
		8	5.5	8000	Air	10	3.5 B	0	0.5
		10	3.5	8000	Air	10	3.5 B	-1	0.5
		12	2.5	8000	Air	10	5.0 B	-4	0.5
		14	2	8000	Air	10	5.0 B	-6	0.5
		16	1	8000	Air	10	5.0 B	-8	0.5
		18	0.8	8000	Air	10	5.0 B	-9	0.5
		20	0.7	8000	Air	10	5.0 B	-11	0.3
		25	0.5	8000	Air	10	5.0 B	-13	0.3
		30	0.25	8000	Air	10	5.0 B	+8	0.3
5	Aluminum	1	45	8000	N_2	12	2.0 S	0	0.8
		2	30	8000	N_2	12	2.0 S	-1	0.5
		3	25	8000	N_2	12	2.0 S	-1	0.5
		4	15	8000	N_2	12	2.0 S	-2	0.5
		5	10	8000	N_2	14	2.5 S	-3	0.5
		6	7	8000	N_2	14	2.5 S	-3	0.5
		8	4	8000	N_2	14	2.5 S	-4	0.5
		10	2.5	8000	N_2	14	5.0 B	-5	0.5
		12	2	8000	N_2	16	5.0 B	-5	0.5
		14	1.2	8000	N_2	16	5.0 B	-6	0.5
		16	1	8000	N_2	16	5.0 B	-7	0.5
		18	0.8	8000	N_2	16	5.0 B	-8	0.5
		20	0.6	8000	N_2	16	7.0 B	-9	0.3
		25	0.5	8000	N_2	16	7.0 B	-10	0.3
		30	0.2	8000	N_2	18	7.0 B	+7	0.3
6	Copper	1	30	8000	O_2	5	2.0 S	-0.5	1
		2	20	8000	O_2	5	2.0 S	-1	0.5
		3	14	8000	O_2	6	2.0 S	-2	0.5
		4	8	8000	O_2	8	2.0 S	-2	0.5
		5	5	8000	O_2	8	2.5 S	-3	0.5
		6	3	8000	O_2	8	2.5 S	-3	0.5
		8	1.5	8000	O_2	10	3.0 S	-4	0.5
		10	0.7	8000	O_2	12	4.0 S	-5	0.5

KFLCM

Cutting Parameters - 12000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	50-80	12000	Air / N_2	12	1.5 S	0	1
		2	45-48	12000	Air / N_2	12	2.0 S	0	0.5
		3	30-38	12000	Air / N_2	13	2.0 S	0	0.5
		4	20-26	12000	Air / N_2	13	2.5 S	0	0.5
		5	15-20	12000	Air / N_2	13	2.5 S	0	0.5
		6	10-13	12000	Air / N_2	13	2.5 S	0	0.5
		8	7-10	12000	Air / N_2	13	3.0 S	-1.5	0.5
		10	5-6.5	12000	Air / N_2	13	4.0 S	-3	0.5
2	Carbon Steel	8	2.3-2.5	4000	O_2	0.6	1.2 E	+4	0.8
		10	2.3	6000	O_2	0.6	1.2 E	+6	0.8
		12	2	7500	O_2	0.6	1.2 E	+7	0.8
		14	1.8	8500	O_2	0.6	1.4 E	+8	0.8
		16	1.6	9500	O_2	0.6	1.4 E	+9	0.8
		20	1.4	12000	O_2	0.6	1.6 E	+9	0.8
		22	1.2	12000	O_2	0.7	1.8 E	+9	0.8
		22	1.2	12000	O_2	0.7	1.4 SP	+11	0.5
		25	0.85	12000	O_2	0.7	1.8 E	+11	0.8
		25	0.95	12000	O_2	0.7	1.5 SP	+12	0.5
		30	0.4	12000	O_2	1.3	1.8 E	+11	1.2
		30	0.8	12000	O_2	0.8	1.5 SP	+12	0.5
		35	0.6	12000	O_2	0.7	1.8 S	+13	1.5
		40	0.3-0.4	12000	O_2	1.5	1.8 E	+11.5	1.2
		45	0.2-0.3	12000	O_2	0.7	1.8 S	+14	0.5
3	Stainless Steel	1	63	12000	N_2	10	2.0 S	0	1
		2	42	12000	N_2	12	2.0 S	0	0.5
		3	33	12000	N_2	13	2.0 S	0	0.5
		4	27	12000	N_2	12	2.0 S	0	0.5
		5	18	12000	N_2	15	2.5 S	-1	0.5
		6	15	12000	N_2	8	3.5 B	-2	0.5
		8	10	12000	N_2	7	5.0 B	-2	0.5
		10	7.5	12000	N_2	5	5.0 B	-3	0.5
		12	5.5	12000	N_2	6	6.0 B	-4	0.5
		14	3.5	12000	N_2	6	7.0 B	-6	0.3
		16	2.3	12000	N_2	6	7.0 B	-8	0.3
		18	1.5	12000	N_2	14	5.0 B	-9	0.5
		20	1.45	12000	N_2	6	7.0 B	-11	0.3
		25	0.9	12000	N_2	6	7.0 B	-13	0.3
		30	0.26	12000	N_2	10	7.0 B	+7	0.3
		40	0.15	12000	N_2	15	7.0 B	+8	0.3

KFLCM

Cutting Parameters - 12000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
4	Stainless Steel	1	60	12000	Air	10	2.0 S	0	1
		2	38	12000	Air	10	2.5 S	0	0.5
		3	28	12000	Air	10	2.5 S	0	0.5
		4	25	12000	Air	10	3.5 B	0	0.5
		5	18	12000	Air	10	3.5 B	0	0.5
		6	15	12000	Air	10	5.0 B	0	0.5
		8	10	12000	Air	10	5.0 B	0	0.5
		10	6.5	12000	Air	10	5.0 B	-1	0.5
		12	4.5	12000	Air	10	5.0 B	-4	0.5
		14	2.6	12000	Air	10	5.0 B	-6	0.5
		16	2.3	12000	Air	10	5.0 B	-8	0.5
		18	1.9	12000	Air	10	5.0 B	-9	0.5
		20	1.4	12000	Air	10	5.0 B	-11	0.3
		25	1	12000	Air	10	5.0 B	-13	0.3
		30	0.28	12000	Air	10	5.0 B	+7	0.3
5	Aluminum	1	45	12000	N_2	12	2.0 S	0	0.8
		2	35	12000	N_2	12	2.0 S	-1	0.5
		3	25	12000	N_2	12	2.0 S	-1	0.5
		4	20	12000	N_2	12	2.0 S	-2	0.5
		5	16	12000	N_2	14	2.5 S	-3	0.5
		6	11	12000	N_2	14	2.5 S	-3	0.5
		8	7	12000	N_2	14	2.5 S	-4	0.5
		10	5	12000	N_2	14	5.0 B	-5	0.5
		12	2.6	12000	N_2	16	5.0 B	-5	0.5
		14	1.7	12000	N_2	16	5.0 B	-5	0.5
		16	1.6	12000	N_2	16	5.0 B	-5	0.5
		18	1.3	12000	N_2	16	5.0 B	-5	0.5
		20	1	12000	N_2	16	7.0 B	-5	0.3
		25	0.6	12000	N_2	16	7.0 B	-5	0.3
		30	0.45	12000	N_2	18	7.0 B	+7	0.3
		40	0.3	12000	N_2	18	7.0 B	+8	0.3
6	Copper	1	35	12000	O_2	5	2.0 S	-0.5	1
		2	25	12000	O_2	5	2.0 S	-1	0.5
		3	18	12000	O_2	6	2.0 S	-2	0.5
		4	12	12000	O_2	8	2.0 S	-3	0.5
		5	8	12000	O_2	8	2.5 S	-4.5	0.5
		6	5	12000	O_2	8	2.5 S	-5	0.5
		8	2.5	12000	O_2	10	3.0 S	-6	0.5
		10	1.2	12000	O_2	12	4.0 S	-8	0.5
7	Brass	1	40	12000	N_2	12	2.0 S	0	1
		2	35	12000	N_2	12	2.0 S	-1	0.5
		3	22	12000	N_2	12	2.0 S	-1	0.5
		4	18	12000	N_2	12	2.0 S	-2	0.5
		5	15	12000	N_2	14	2.5 S	-3	0.5
		6	10	12000	N_2	14	2.5 S	-3	0.5
		8	7	12000	N_2	14	2.5 S	-4	0.5
		10	5	12000	N_2	14	5.0 B	-5	0.5
		12	2.4	12000	N_2	14	5.0 B	-5	0.5
		14	1.4	12000	N_2	16	5.0 B	-8	0.5
		16	1	12000	N_2	16	5.0 B	-11	0.3

KFLCM

Cutting Parameters - 15000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	50-80	15000	Air / N_2	10	1.5 S	0	1
		2	45-48	15000	Air / N_2	10	2.0 S	0	0.5
		3	30-38	15000	Air / N_2	12	2.0 S	0	0.5
		4	26-29	15000	Air / N_2	12	2.5 S	0	0.5
		5	20-23	15000	Air / N_2	12	2.5 S	0	0.5
		6	17-19	15000	Air / N_2	12	2.5 S	0	0.5
		8	10-12	15000	Air / N_2	12	3.0 S	-1	0.5
		10	7-8	15000	Air / N_2	13	4.0 S	-1	0.5
		12	5-6	15000	Air / N_2	13	4.0 S	-2	0.5
		14	4.5-5.5	15000	Air / N_2	13	4.0 S	-6	0.5
		16	3-3.5	15000	Air / N_2	13	5.0 B	-8	0.5
2	Carbon Steel	10	2.3	6000	O_2	0.6	1.2 E	+6	0.8
		12	2	7500	O_2	0.6	1.2 E	+7	0.8
		14	1.8	8500	O_2	0.6	1.4 E	+8	0.8
		16	1.7	9500	O_2	0.6	1.4 E	+9	0.8
		20	1.5	15000	O_2	0.6	1.6 E	+9	0.8
		22	1.3	15000	O_2	0.7	1.8 E	+9	0.8
		22	1.3	15000	O_2	0.7	1.4 SP	+11	0.5
		25	1.3	15000	O_2	0.7	1.8 E	+11	0.8
		25	1.2	15000	O_2	0.7	1.5 SP	+12	0.5
		30	0.8	15000	O_2	0.8	1.8 E	+11	1.2
		30	0.85	15000	O_2	0.8	1.5 SP	+12	0.5
		40	0.45	15000	O_2	0.8	1.8 E	+1.5	1.5
		50	0.3	15000	O_2	1.6	1.8 E	+11.5	1.2
		60	0.2	15000	O_2	1.8	1.8 E	+12	2
3	Stainless Steel	1	65	15000	N_2	10	2.0 S	0	1
		2	42	15000	N_2	12	2.0 S	0	0.5
		3	35	15000	N_2	13	2.0 S	0	0.5
		4	29	15000	N_2	12	2.5 S	0	0.5
		5	22	15000	N_2	15	2.5 S	-1	0.5
		6	18	15000	N_2	8	3.5 B	-2	0.5
		8	12	15000	N_2	7	5.0 B	-2	0.5
		10	9	15000	N_2	5	5.0 B	-3	0.5
		12	7	15000	N_2	6	6.0 B	-4	0.5
		14	4.2	15000	N_2	6	7.0 B	-6	0.3
		16	2.8	15000	N_2	6	7.0 B	-8	0.3
		18	2.3	15000	N_2	6	5.0 B	-9	0.5
		20	2	15000	N_2	6	7.0 B	-11	0.3
		25	1.1	15000	N_2	6	7.0 B	-13	0.3
		30	0.7	15000	N_2	10	5.0 B	-15	0.3
		40	0.4	15000	N_2	15	7.0 B	+8	0.3
		50	0.2	15000	N_2	15	8.0 B	+9	0.3

KFLCM

Cutting Parameters - 15000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
4	Stainless Steel	1	65	15000	Air	10	2.0 S	0	1
		2	40	15000	Air	10	2.5 S	0	0.5
		3	32	15000	Air	10	2.5 S	0	0.5
		4	25	15000	Air	10	3.5 B	0	0.5
		5	20	15000	Air	10	3.5 B	0	0.5
		6	16	15000	Air	10	3.5 B	0	0.5
		8	11	15000	Air	10	3.5 B	0	0.5
		10	9	15000	Air	10	3.5 B	-1	0.5
		12	6.5	15000	Air	10	5.0 B	-4	0.5
		14	4	15000	Air	10	5.0 B	-6	0.5
		16	3.1	15000	Air	10	5.0 B	-8	0.5
		18	2.3	15000	Air	10	5.0 B	-9	0.5
		20	2	15000	Air	10	5.0 B	-11	0.3
		25	1.3	15000	Air	10	5.0 B	-13	0.3
		30	0.9	15000	Air	10	5.0 B	-15	0.3
		40	0.45	15000	Air	12	6.0 B	+8	0.3
		50	0.25	15000	Air	12	8.0 B	+9	0.3
5	Aluminum	1	60	15000	N_2	12	2.0 S	0	0.8
		2	50	15000	N_2	12	2.0 S	-1	0.5
		3	40	15000	N_2	12	2.0 S	-1	0.5
		4	35	15000	N_2	12	2.0 S	-2	0.5
		5	26	15000	N_2	14	2.5 S	-3	0.5
		6	16	15000	N_2	14	2.5 S	-3	0.5
		8	10	15000	N_2	14	2.5 S	-4	0.5
		10	5.5	15000	N_2	14	5.0 B	-5	0.5
		12	4.5	15000	N_2	16	5.0 B	-5	0.5
		14	3.4	15000	N_2	16	5.0 B	-5	0.5
		16	2.1	15000	N_2	16	5.0 B	-5	0.5
		18	1.8	15000	N_2	16	5.0 B	-5	0.5
		20	1.4	15000	N_2	18	7.0 B	-5	0.3
		25	0.9	15000	N_2	18	7.0 B	-5	0.3
		30	0.7	15000	N_2	20	7.0 B	+7	0.3
		40	0.3	15000	N_2	20	7.0 B	+8	0.3
		50	0.2	15000	N_2	20	8.0 B	+9	0.3
6	Copper	1	40	15000	O_2	5	2.0 S	-0.5	1
		2	30	15000	O_2	5	2.0 S	-1	0.5
		3	28	15000	O_2	6	2.0 S	-2	0.5
		4	20	15000	O_2	8	2.0 S	-3	0.5
		5	15	15000	O_2	8	2.5 S	-4.5	0.5
		6	10	15000	O_2	8	2.5 S	-5	0.5
		8	6	15000	O_2	10	3.0 S	-6	0.5
		10	2	15000	O_2	12	4.0 S	-8	0.5

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Cutting Parameters - 15000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
7	Brass	1	50	15000	N_2	12	2.0 S	0	1
		2	40	15000	N_2	12	2.0 S	-1	0.5
		3	32	15000	N_2	12	2.0 S	-1	0.5
		4	28	15000	N_2	12	2.0 S	-2	0.5
		5	20	15000	N_2	14	2.5 S	-3	0.5
		6	14	15000	N_2	14	2.5 S	-3	0.5
		8	8	15000	N_2	14	2.5 S	-4	0.5
		10	5.5	15000	N_2	14	5.0 B	-5	0.5
		12	3.2	15000	N_2	14	5.0 B	-5	0.5
		14	2.7	15000	N_2	16	5.0 B	-8	0.5
		16	1.5	15000	N_2	18	5.0 B	-11	0.5
		18	1.1	15000	N_2	18	5.0 B	-11	0.5
		20	0.6	15000	N_2	18	6.0 B	-12	0.3

Cutting Parameters - 20000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
1	Carbon Steel	1	50-80	20000	Air / N_2	8	1.5 S	0	1
		2	45-55	20000	Air / N_2	8	2.0 S	0	0.5
		3	32-38	20000	Air / N_2	8	2.0 S	0	0.5
		4	28-32	20000	Air / N_2	8	2.5 S	0	0.5
		5	25-28	20000	Air / N_2	8	3.0 S	0	0.5
		6	21-25	20000	Air / N_2	8	3.0 S	-0.5	0.5
		8	13-15	20000	Air / N_2	8	3.0 S	-1	0.5
		10	10-13	20000	Air / N_2	8	3.5 S	-1.5	0.5
		12	8-9	20000	Air / N_2	8	3.5 S	-2	0.5
		14	6-7	20000	Air / N_2	8	4.0 S	-3	0.5
		16	5-6	20000	Air / N_2	8	5.0 S	-4	0.5
		18	3.2-4	20000	Air / N_2	10	6.0 S	-6	0.5
		20	2.7-3.2	20000	Air / N_2	10	6.0 S	-8	0
2	Carbon Steel	10	2.3	6000	O_2	0.6	1.2 E	+8	0.8
		12	2	7500	O_2	0.6	1.2 E	+9	0.8
		14	1.8	8500	O_2	0.6	1.4 E	+10	0.8
		16	1.7	9500	O_2	0.6	1.4 E	+11	0.8
		18	1.6	12000	O_2	0.6	1.6 E	+12	0.8
		20	1.5	20000	O_2	0.6	1.6 E	+12	0.8
		22	1.3	20000	O_2	0.7	1.8 E	+12.5	0.8
		22	1.4	20000	O_2	0.7	1.4 SP	+13	0.5
		25	1.3	20000	O_2	1	1.5 SP	+13	0.4
		30	1.2	20000	O_2	1.2	1.5 SP	+13.5	0.4
		40	0.85	20000	O_2	1.4	1.8 E	+14	0.4
		50	0.4	20000	O_2	1.6	1.8 E	+13	2
		60	0.25	20000	O_2	1.6	1.8 E	+13.5	2
		70	0.2	20000	O_2	1.7	1.8 E	+13.5	2

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Cutting Parameters - 20000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
3	Stainless Steel	1	70	20000	N_2	8	2.0 S	0	1
		2	45	20000	N_2	8	2.0 S	0	0.5
		3	38	20000	N_2	8	2.0 S	0	0.5
		4	32	20000	N_2	8	2.5 S	0	0.5
		5	25	20000	N_2	8	2.5 S	0	0.5
		6	22	20000	N_2	8	3.5 B	0	0.5
		8	17	20000	N_2	8	5.0 B	-1	0.5
		10	14	20000	N_2	8	5.0 B	-1.5	0.5
		12	11	20000	N_2	8	6.0 B	-2	0.5
		14	7	20000	N_2	8	7.0 B	-4	0.3
		16	5.8	20000	N_2	8	7.0 B	-5	0.3
		18	4	20000	N_2	8	5.0 B	-6	0.5
		20	3	20000	N_2	12	7.0 B	-7.5	0.3
		25	1.6	20000	N_2	12	7.0 B	-12	0.3
		30	1.1	20000	N_2	12	5.0 B	-16	0.3
		40	0.5	20000	N_2	16	7.0 B	-16	0.3
		50	0.2	20000	N_2	16	8.0 B	+11	0.3
		60	0.15	20000	N_2	20	8.0 B	+11	0.3
		70	0.12	20000	N_2	20	8.0 B	+11	0.3
		80	0.1	20000	N_2	20	8.0 B	+11	0.3
		90	0.08	20000	N_2	20	8.0 B	+11	0.3
		100	0.05	20000	N_2	20	8.0 B	+11	0.3
4	Stainless Steel	1	65	20000	Air	10	2.0 S	0	1
		2	40	20000	Air	10	2.5 S	0	0.5
		3	32	20000	Air	10	2.5 S	0	0.5
		4	25	20000	Air	10	3.5 B	0	0.5
		5	20	20000	Air	10	3.5 B	0	0.5
		6	16	20000	Air	10	3.5 B	0	0.5
		8	11	20000	Air	10	3.5 B	0	0.5
		10	9	20000	Air	10	3.5 B	-1.5	0.5
		12	6.5	20000	Air	10	5.0 B	-4	0.5
		14	4	20000	Air	10	5.0 B	-6	0.5
		16	3.1	20000	Air	10	5.0 B	-7	0.5
		18	2.3	20000	Air	10	5.0 B	-8	0.5
		20	2	20000	Air	10	5.0 B	-9	0.3
		25	1.3	20000	Air	10	5.0 B	-13	0.3
		30	0.9	20000	Air	10	5.0 B	-17	0.3
		40	0.5	20000	Air	16	7.0 B	-16	0.3
		50	0.2	20000	Air	16	8.0 B	+11	0.3
		60	0.15	20000	Air	20	8.0 B	+11	0.3
		70	0.12	20000	Air	20	8.0 B	+11	0.3

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Cutting Parameters - 6000W

No	Material	Thickness (mm)	Speed (m/min)	Power (Watt)	Gas	Air Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
5	Aluminum	1	65	20000	N_2	8	2.0 S	0	0.8
		2	55	20000	N_2	8	2.0 S	-1	0.5
		3	45	20000	N_2	10	2.0 S	-1	0.5
		4	40	20000	N_2	12	2.0 S	-2	0.5
		5	30	20000	N_2	14	2.5 S	-3	0.5
		6	20	20000	N_2	14	2.5 S	-3	0.5
		8	13	20000	N_2	14	2.5 S	-4	0.5
		10	8.5	20000	N_2	14	5.0 B	-5	0.5
		12	8	20000	N_2	16	5.0 B	-6	0.5
		14	4.5	20000	N_2	16	5.0 B	-7	0.5
		16	4	20000	N_2	16	5.0 B	-7	0.5
		18	3.5	20000	N_2	16	5.0 B	-7	0.5
		20	2.3	20000	N_2	18	7.0 B	-7	0.3
		25	1.5	20000	N_2	18	7.0 B	-7.5	0.3
		30	0.8	20000	N_2	20	7.0 B	-7.5	0.3
		40	0.6	20000	N_2	20	7.0 B	-9	0.3
		50	0.4	20000	N_2	20	8.0 B	-9	0.3
		60	0.2	20000	N_2	20	8.0 B	-9	0.3
6	Copper	1	40	20000	O_2	5	2.0 S	0	1
		2	30	20000	O_2	5	2.0 S	0	0.5
		3	28	20000	O_2	6	2.0 S	0	0.5
		4	20	20000	O_2	8	2.5 S	-1	0.5
		5	15	20000	O_2	8	2.5 S	-1	0.5
		6	10	20000	O_2	8	3.0 S	-2	0.5
		8	6	20000	O_2	10	3.0 S	-3	0.5
		10	3.5	20000	O_2	12	3.5 S	-4	0.5
		12	2.5	20000	O_2	12	3.5 S	-5	0.5
7	Brass	1	55	20000	N_2	12	2.0 S	0	1
		2	42	20000	N_2	12	2.0 S	0	0.5
		3	34	20000	N_2	12	2.0 S	0	0.5
		4	30	20000	N_2	12	2.0 S	0	0.5
		5	21	20000	N_2	14	2.5 S	0	0.5
		6	15	20000	N_2	14	2.5 S	0	0.5
		8	9	20000	N_2	14	2.5 S	-1	0.5
		10	6	20000	N_2	14	5.0 B	-2	0.5
		12	4	20000	N_2	14	5.0 B	-3	0.5
		14	3	20000	N_2	16	5.0 B	-3	0.5
		16	2	20000	N_2	18	5.0 B	-3	0.5
		18	1	20000	N_2	18	5.0 B	-4	0.5
		20	0.7	20000	N_2	18	6.0 B	-5	0.3

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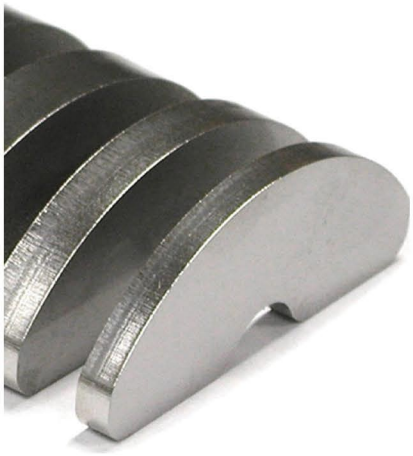
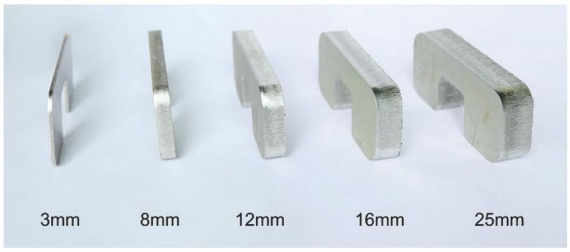
Sample Cutted Workpieces





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KARA Quality Certificates

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