

What Laser Cutting Machine to Buy

Introduction to Laser Cutting Machines

Core Components

CNC control system and machine tool.



Applications

Metal processing, aerospace, vehicle manufacturing, and more.



Capabilities

Cutting, engraving, punching holes, and welding various materials including metals and non-metals.



Key Considerations for Purchase

1. Laser Type and Power

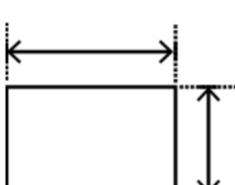
- CO2 lasers for non-metal/thin metals, power range: 10W-6000W.
- Fiber lasers for metals, faster speeds, power range: 500W-8000W.
- Material thickness and type dictate the power requirement.



CO2 lasers
10W-6000W



Fiber lasers
500W-8000W



2. Cutting Bed Size

- Choose based on the maximum size of materials to be processed.
- Balance between productivity and space/cost.

3. Cutting Speed and Precision

- Fiber lasers: Speed >30m/min, positioning accuracy $\leq 0.05\text{mm}$, repeat accuracy $\leq 0.03\text{mm}$.
- Balance speed with accuracy to maintain quality.



Fiber lasers

Speed >30m/min

positioning accuracy $\leq 0.05\text{mm}$

repeat accuracy $\leq 0.03\text{mm}$



metals



non-metals

4. Material Compatibility

- Ability to process a wide range of metals and non-metals.
- Consider machines that can handle reflective and hard-to-machine materials.

5. Automation and Additional Features

- Features like automatic focusing and loading/unloading can significantly reduce labor and improve efficiency.



6. Brand Reputation and Customer Support

- Choose brands with proven quality, technology, and after-sale services.

Types of Laser Cutting Machines

CO2 Laser Cutting Machines

Best for non-metals and thin metals, high-quality cuts.



Fiber Laser Cutting Machines

High efficiency, better for thin plates, energy-saving.



YAG Laser Cutting Machines

Versatile, can cut both metals and non-metals, higher cost.



Budgeting and Cost Considerations

Entry-Level

Hundreds to thousands of dollars, for thin materials.

+1000 \$

Mid-Range

Tens of thousands of dollars, for medium-thickness metal sheets.

+10000 \$

High-End

Hundreds of thousands of dollars, for thick metals, high efficiency.

+100000 \$

Conclusion

Balance between laser parameters, material compatibility, automation features, and budget.

Consider long-term benefits of brand reputation and customer support.



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