Revolutionizing Metalworking: Laser Cutting Machines

Introduction to Laser Cutting

Definition: Laser cutting is the process of cutting workpieces using a high-power density laser beam.

Benefits: High precision, fast cutting speed, fine surface finish.

Materials: Steel, aluminum, copper, etc.

Applications: Automotive, aerospace, metal products, electronics.

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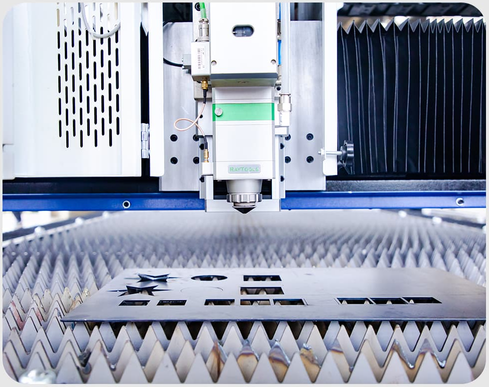


Understanding Laser Cutting

Laser Properties: High monochromaticity, coherence, and directionality.

Basic Principle: Material heating, melting, and vaporization using high-energy laser beams.

Components: Laser, optics, cutting head, control system.

Laser Types: CO_2, Fiber, Solid-State.

Components of Laser Cutting Machine

Laser Generator: Heart of the machine, generates laser beam.

Cutting Head: Emits and focuses laser beam onto the material.

CNC Controller: Transforms CAD data into mechanical movement.

Assist Gas System: Blows away melted materials and cools the cutting area.

Material Handling Equipment: Loading, unloading, and conveying systems.

RFL-C3000
Raycus

Types of Laser Cutting Machines

CO_2 Laser Cutting Machines:

Suitable for non-metallic materials.

High speed, precision, and smooth edges.

Fiber Laser Cutting Machines:

Ideal for cutting metal materials.

High speed, precision, small heat affected area.

Nd:YAG Laser Cutting Machines:

Used for cutting metals like stainless steel.

High speed, precision, small heat affected area.

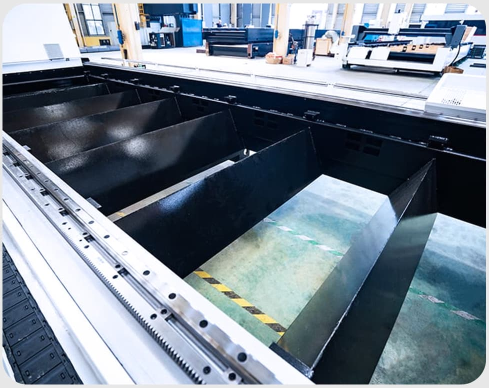
Advantages of Laser Cutting

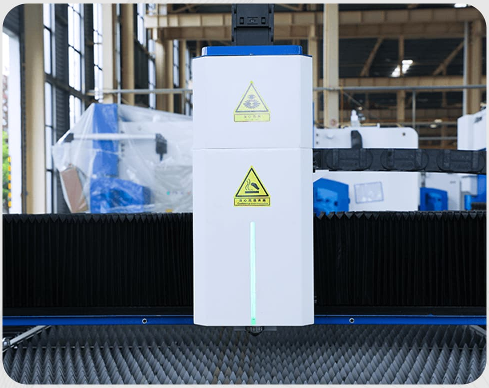
High Precision and Accuracy.

High-Speed Cutting.

Versatility - Cuts various materials.

Flexibility - Adjustable for different cutting needs.





Disadvantages and Challenges

High machine cost.

High energy consumption.

Material requirements.

Challenges with thicker materials.

Future Trends in Laser Cutting

Progress in power, speed, accuracy, intelligence, and automation.

Improved productivity, quality, and cost-effectiveness.

HanLi 汉立 6000

Conclusion

ADH's laser cutting machines offer precision and efficiency.

Elevate your operations with our state-of-the-art technology.

Contact our sales staff for more information.

www.adhmt.com