

2025 U.S.

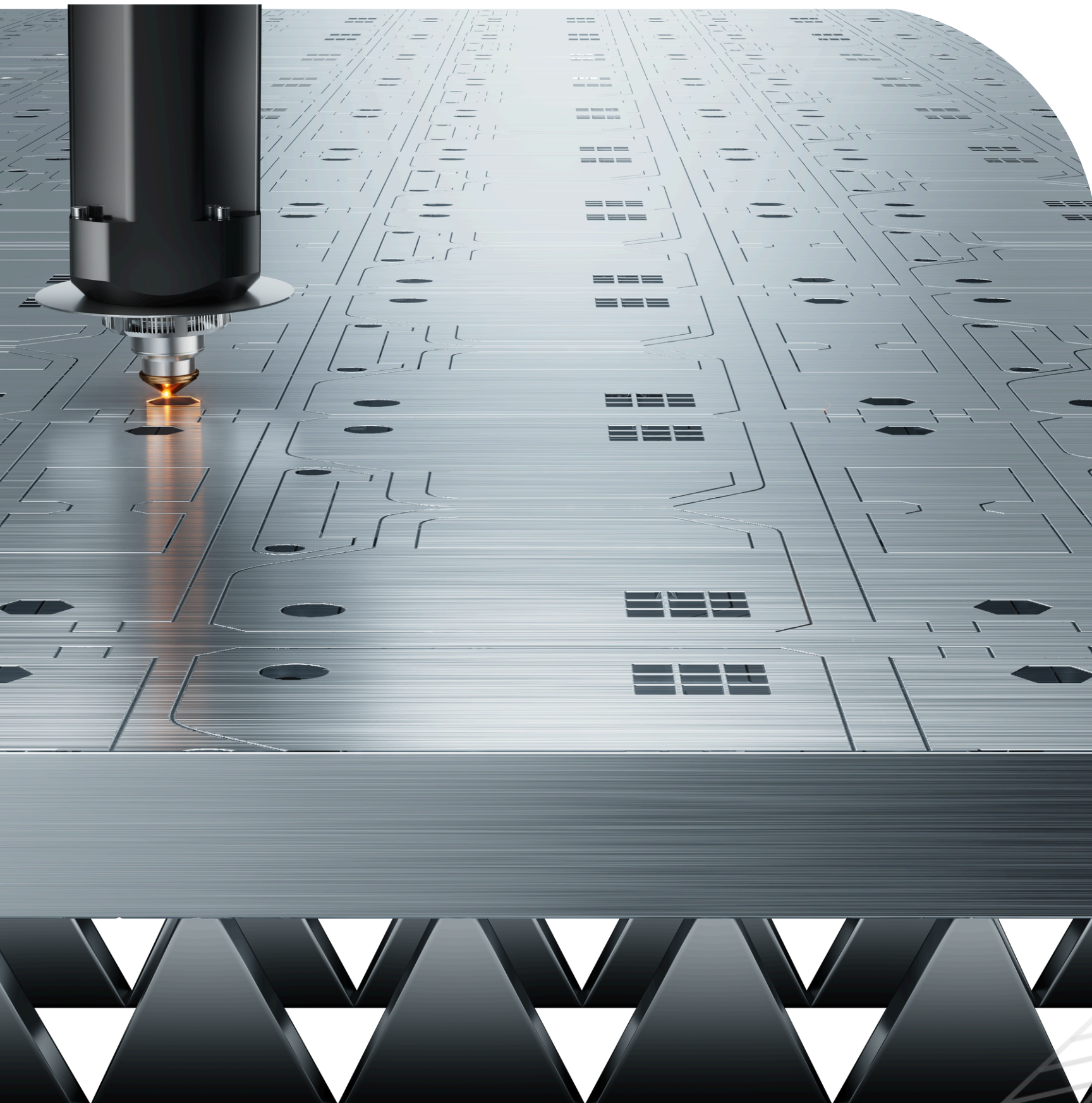
# LASER CUTTER BUYER'S GUIDE

Flatbed & Tube Systems

# WHAT'S INSIDE



Introduction of the Guide	3
Flat Sheet Cutting Machine Buyer's Guide	4
Tube & Profile Cutting Machine Buyer's Guide	11
What Else Should You Consider	19
Let Our Experts Help You Find the Right Laser CuttER	21



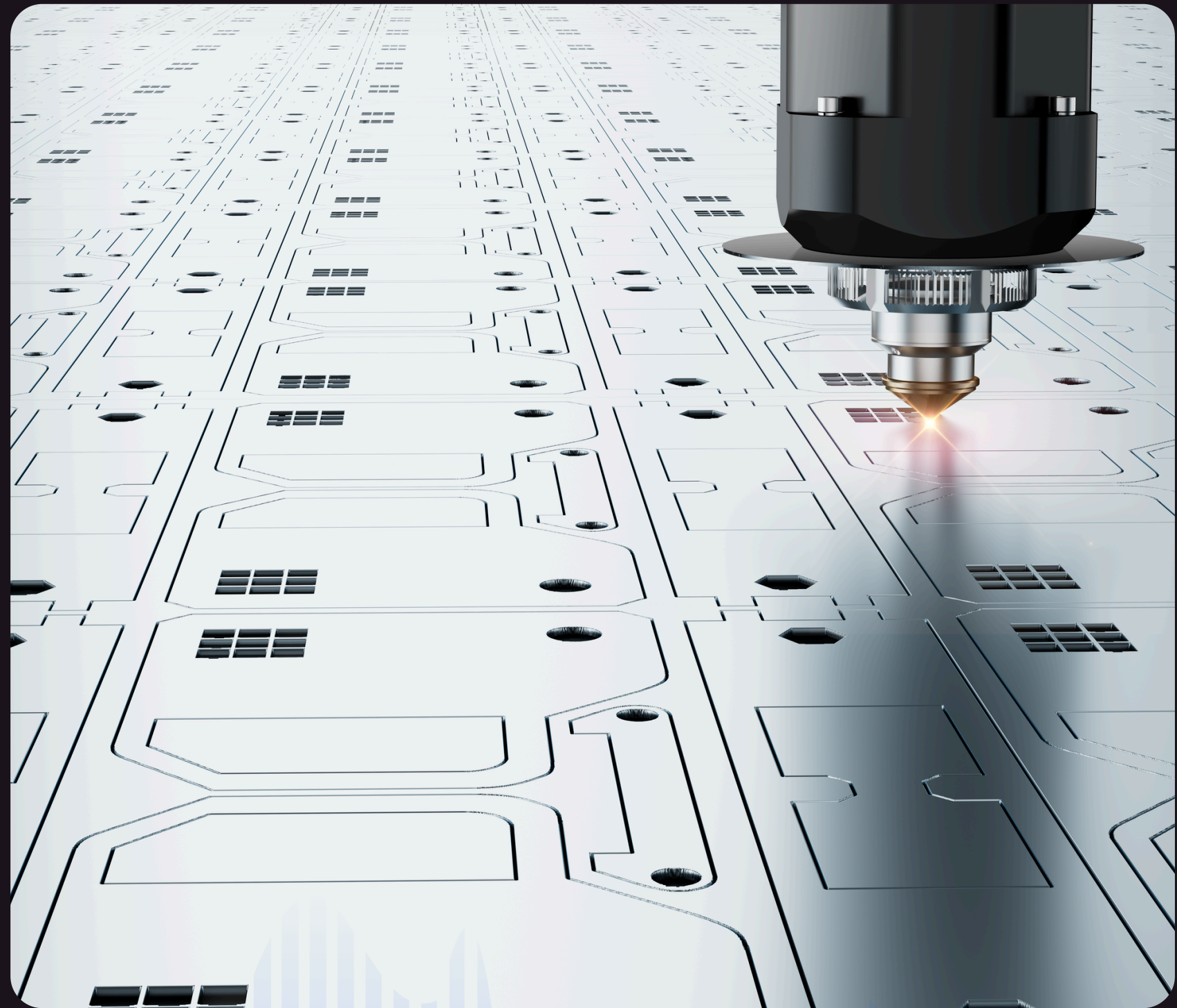
# Introduction of the Guide

Navigating the complex landscape of industrial laser cutting can be challenging—especially as manufacturers balance production needs, cost pressures, and rapid technological advancement. This guide, from the perspective of a global laser cutting expert, is designed to help U.S. buyers make informed choices on flatbed and tube laser systems in 2025.



Part 1

# Flat Sheet Cutting Machine Buyer's Guide





# HOW TO SELECT THE RIGHT LASER CUTTING SYSTEM

Choosing the right system depends on three key factors:

## Your Flat Sheet Cutting Requirements

### SIZE

Select a format size that fits your production.

### THICKNESS

Choose the right power level for your materials.

### VOLUME

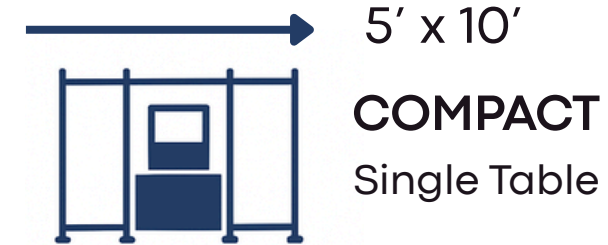
Scale your equipment to your output demands.

### AUTOMATION

Future-proof your shop with automation-ready systems.

# FORMAT SIZE

Oversized machines waste floor space, while undersized beds limit flexibility. Choose a format that fits your current and future part sizes efficiently.



**Best For:**  
Shops with limited floor space  
Small-batch, high-mix fabrication  
Standard sheet sizes: 4' x 8' or 5' x 10'



**Best For:**  
Mainstream metal fabrication shops  
Medium to high production volumes  
Need for dual-pallet exchange to maximize cutting uptime

**Best For:**  
Oversized structural components (construction, shipbuilding, heavy equipment)  
Processing extra-long sheets or custom-shaped parts. Fabricators requiring non-standard layouts or mobile gantry systems

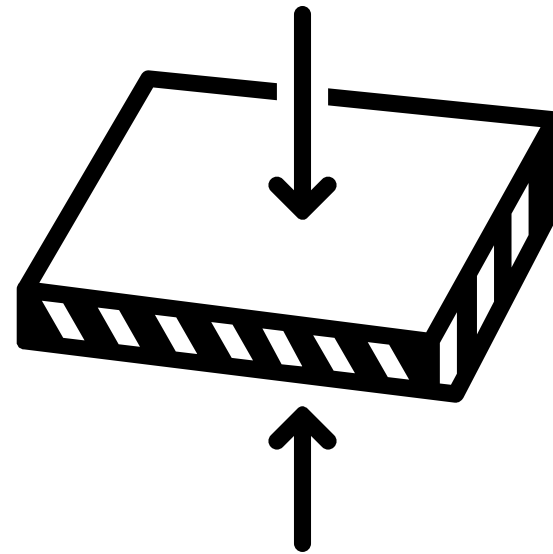


# THICKNESS

Choosing the right laser power depends heavily on your target material thickness and cutting performance expectations. Over-specifying power can lead to unnecessary costs, while under-specifying can limit throughput and edge quality.

## Don't Overpower:

Higher wattage doesn't always translate to better performance. Excessive power on thin materials may reduce edge quality or increase operating costs due to gas and optics wear.



## General Guidelines:

### Thin Materials (< 0.25" )

Entry to mid-power machines (3–6kW) are typically sufficient for fast, clean cutting of mild steel, stainless steel, and aluminum.

### Medium Thickness (0.25"–1" )

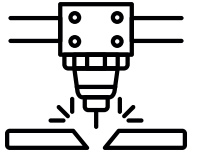
Machines in the 6–20kW range offer a solid balance between speed, edge quality, and cost-effectiveness

### Heavy Plate (> 1" )

Consider high-power systems (20kW–60kW) for consistent cutting performance, improved pierce times, and high productivity on thick stainless steel, carbon steel, or alloy plate.

## Tips:

Always match the laser power to your core material mix and target cutting speed. If your shop handles both thin and thick materials, a high-power smart system with auto-optimization (like HSG GH series) may offer the best flexibility and ROI.



3-6kW

6-20kW

20-60kW

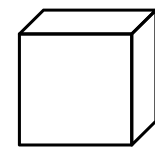


# VOLUME

## Recommendation:

If your operations run multiple shifts, fulfill large orders, or require lean staffing, consider a system like the HSG GH Series paired with smart automation modules. The ROI may surprise you.

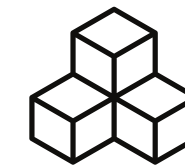
For manufacturers with high production volumes, equipment selection should prioritize total productivity—not just initial machine cost. Systems configured with features such as dual exchange tables, automatic nozzle changers, and integrated loading/unloading automation can significantly reduce downtime and labor dependency.



LOW-  
THROUGHPUT

## ENTRY-LEVEL MACHINE

- Lower upfront investment cost
- Basic cutting capabilities for standard materials
- Typically single table configuration
- Manual loading/unloading required
- Slower axis acceleration and cutting speed
- Suitable for small-batch or prototype production



HIGH-  
THROUGHPUT

## HIGH-PERFORMANCE MACHINE

- Designed for high-volume, continuous production
- Dual exchange tables for reduced downtime
- Automatic nozzle changers for process optimization
- Integrated loading/unloading automation
- High-speed motion system with faster acceleration
- Lower cost per part through higher throughput

## Tips:

In high-throughput environments, a well-automated, high-dynamic 12kW+ system can outperform a lower-spec machine in total daily output by more than 2x—often with fewer operators.

# AUTOMATION READY

## A Strategic Imperative for 2025

As U.S. manufacturers confront mass labor shortages and rising production demands, choosing an automation-ready laser cutting system is no longer optional—it's essential to ensuring long-term competitiveness and operational resilience.

### Why Automation-Ready Matters in 2025



**90%**

of industry leaders believe automation is essential for future success

**70%**

of U.S. manufacturers report being impacted by labor shortages in 2025, limiting capacity and slowing delivery timelines across multiple sectors.

**88%**

of manufacturers acknowledge negative effects on product quality due to workforce-related inconsistencies—automation ensures repeatability and precision.

**63%**

of industrial firms struggle to fill skilled positions, making it increasingly difficult to scale without integrated automation solutions.

### Recommendation:

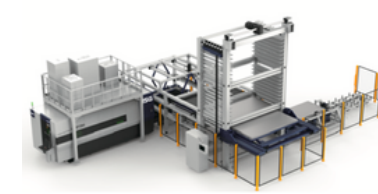
When planning your next laser cutting investment, prioritize systems that are automation-ready—designed to grow with your production needs while mitigating risks tied to labor volatility and rising operational complexity.

### **HSG GH+STORE PRO**

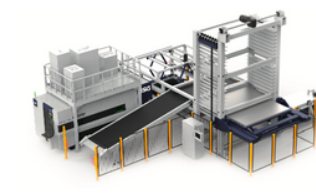
#### FLEXIBLE & AFFORDABLE INITIAL INVESTMENT



Synchronous loading & unloading device



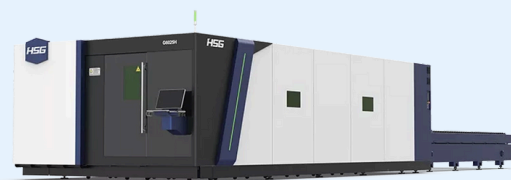
Compact storage for both raw material and finished parts



Extendable to single sheet separation station

# MEET OUR FLAT LASER PROCESSING SOLUTIONS

## **GH Series** FOR MAINSTREAM PRODUCTION



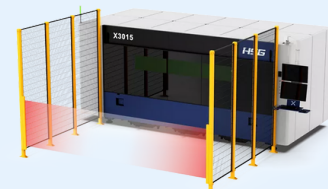
Laser power: 3-30 [kW]  
Acceleration: up to 4 [G]

## **GX Series** COST-EFFECTIVE SOLUTION



Laser power: 3-30 [kW]  
Acceleration: 1.5 [G]

## **X Series** COMPACT, SPACE-SAVING DESIGN



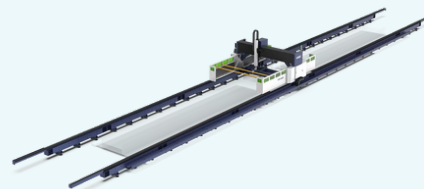
Laser power: 1.5-12 [kW]  
Acceleration: 1.5 [G]

## **GFA** LARGE SCALE CUTTING SOLUTION



Laser power: 12-60 [kW]  
Acceleration: 0.5 [G]

## **PR Series** STEEL STRUCTURE CUTTING SOLUTION



Laser power: 12-20 [kW]  
Acceleration: 0.5 [G]

## **STORE PRO** LASER AUTOMATION SYSTEM



**Scan to Get Your  
Ideal Laser Cutter in  
60 Seconds**

Flatbed or tube, thick or thin—we'll  
match you with the right solution.



Part 2

# Tube & Profile Cutting Machine Buyer's Guide



# FIRSTLY, IS TUBE LASER CUTTING RIGHT FOR YOU?

To determine if your operation justifies the investment in a tube laser cutting machine, start by evaluating these key criteria:

## Material Type

- Are you cutting carbon steel, stainless, aluminum, or copper?
- Need to cut materials up to 1 inch thick?
- **Fiber lasers handle these efficiently—especially for frequent metal tube processing.**

## Tube Size & Length

- Are your tubes small ( $\leq 6''$ ), medium (6–10"), or large ( $> 10''$ )?
- Do you process long tubes (20'–40')?
- **Laser machines must match your diameter, wall thickness, and part length.**

## Production Volume

- Do you run repetitive jobs or high-volume orders?
- Are you spending too much time on manual cutting or setup?
- **Laser cutting increases speed, accuracy, and reduces labor.**

## Pain Points

- Still using plasma, saws, or drills for tubes?
- Trouble with accuracy or manual fixturing?
- **If yes, it's time to upgrade to laser cutting.**

IF YOU  
ANSWERED YES  
TO MOST OF  
THESE...



**You're ready for a tube laser cutting system.**

# HOW TO SELECT THE RIGHT TUBE LASER CUTTING SYSTEM

## Your Tube Laser Cutting Requirements

### MATERIAL

Start by identifying whether you're cutting standard tubes or structural profiles

### DIAMETER

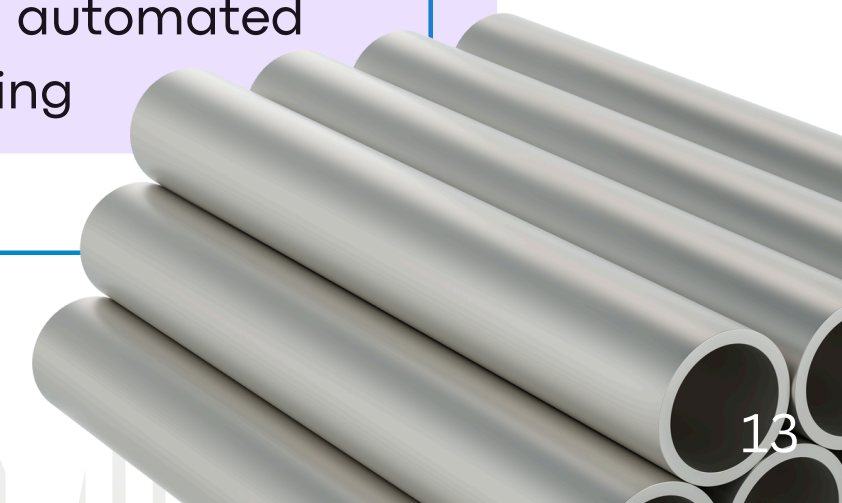
Select a system that matches your tube size—small, medium, or large

### FUNCTIONS

Consider value-added capabilities like bevel cutting, for more complex jobs.

### AUTOMATION

Future-proof your investment with automated loading, unloading





# TUBE LASER SUPPORTED METALS

Material	Cutting Difficulty	Recommended Power	Notes
CS	★☆☆	6kW–20kW	Prefer oxygen or nitrogen
SS	★★★☆☆	8kW–20kW	Nitrogen preferred for clean edges
Al	★★★★	≥10kW	Requires anti-reflective protection
GA	★★★☆☆	≥8kW	Ventilate properly to avoid zinc fumes
CU   BR	★★★★★	≥12kW	Use high-reflect protection optics

# COMPATIBLE TUBE & PROFILE TYPES



TUBE

ROUND

SQUARE

RECTANGULAR

PROFILE

Angle Iron

H-Beams

Channel Steel

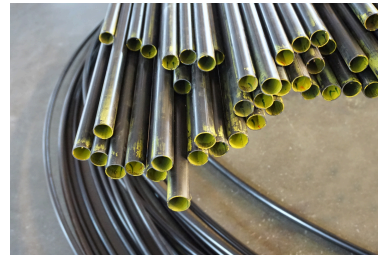
# DIAMETER

## Know What You Cut Before You Invest

Understanding the type of material you're processing is the first and most critical step in selecting the right tube laser system. Profiles vary not only in shape but also in structural complexity and cutting demands.

### Tips:

If you need to cut special or custom profiles, consult with an expert in advance to ensure the system meets your production requirements.



Under 6" OD  
**ROUND PIPE**



Under 12" OD  
**SQUARE / RECTANGULAR TUBE**



OVER 12" OD  
**LARGE-DIAMETER TUBE**



H, C, U, L shapes  
**STRUCTURAL PROFILES**

### Applications:

Furniture, fitness, bicycle, light structures, etc.

HSG R-Series

HSG TS-Series

### Applications:

Automotive, HVAC, frames, general steel construction, etc.

HSG R-Series

HSG TS-Series

### Applications:

Pil & gas, energy, Heavy machinery, marine, structural steel, etc.

HSG T-Series

HSG TX-Series

### Applications:

Automotive, oil & gas, energy, HVAC, frames, etc.

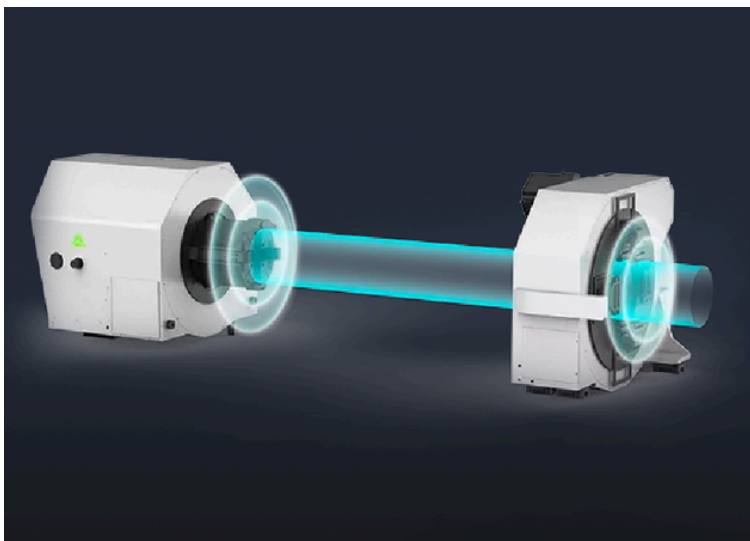
HSG TS-Series

HSG PRA/PRB



# FUNCTIONS

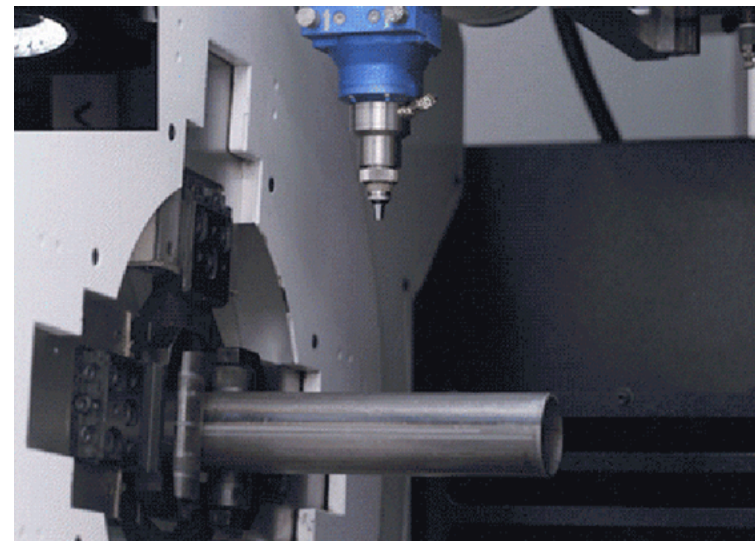
Selecting a tube laser involves more than just laser power—it's about end-to-end efficiency. Today's high-value tube laser systems must combine intelligent chucking, bevel capability, multi-task processing, and advanced automation to maximize ROI and support scalable, future-proof operations.



## CHUCK CONFIGURATION

2, 3, or 4 chucks — what's best for your job?

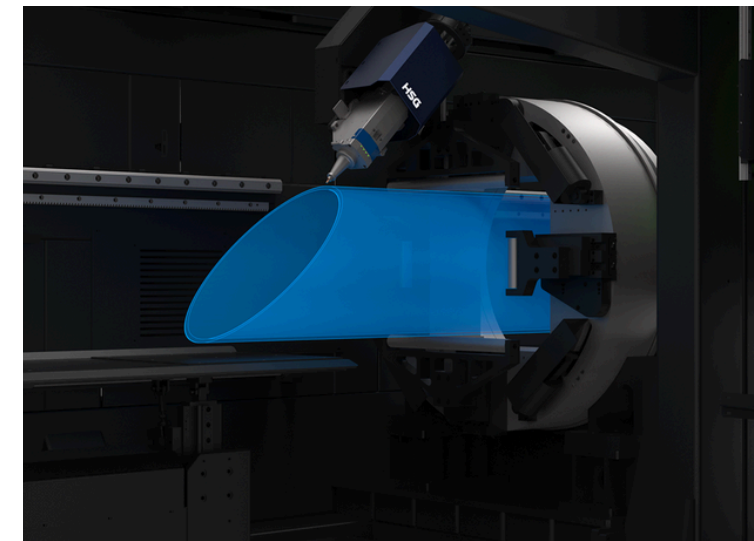
Choose based on material length, precision needs, and how much repositioning you want to avoid. Less chucks cutting faster, more chucks improve grip and cutting stability for longer or heavier tubes.



## CHUCK INTELLIGENCE

Need a smart chuck or just basic chuck?

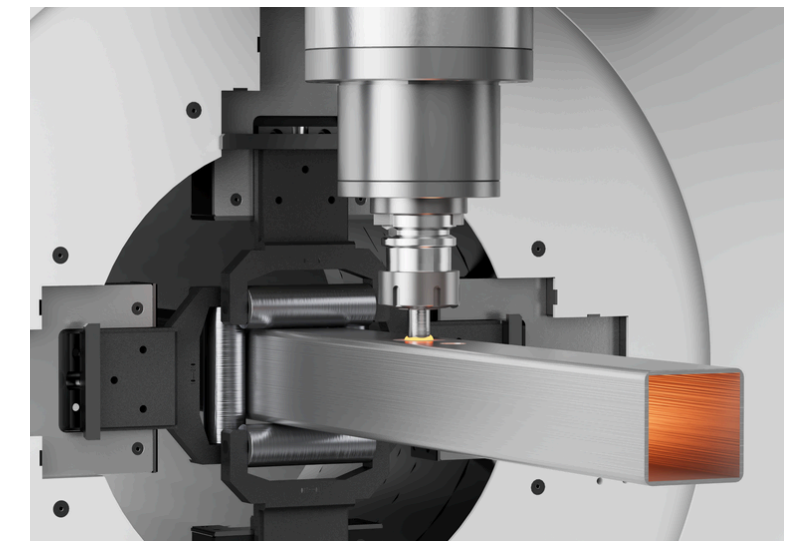
Intelligent chucks auto-adjust for different tube shapes and sizes, reducing setup time and human error—ideal for high-mix or automated production lines. It's suggested to purchase.



## BEVEL CUTTING

Doing angles? You'll want bevel cutting.

Bevel cutting lets you prep weld-ready edges in a single step. If you're in structural steel or need angled cuts for assembly, it's a must-have.



## DRILLING / TAPPING

Need drilling and tapping in one setup?

Look for integrated drilling/tapping if your parts require holes or threads—saves you time, eliminates secondary processes, and boosts throughput.





# AUTOMATIONS

## A Strategic Imperative for 2025

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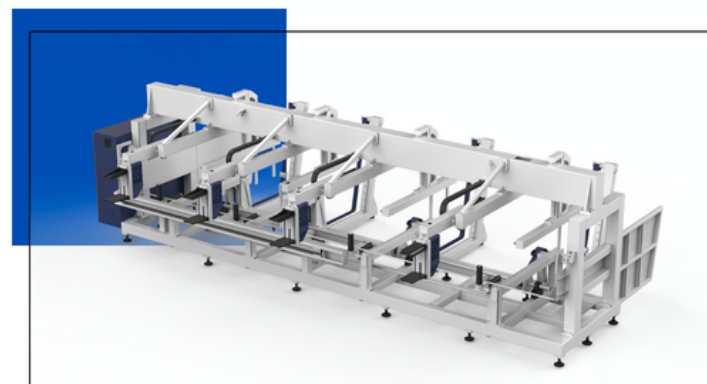
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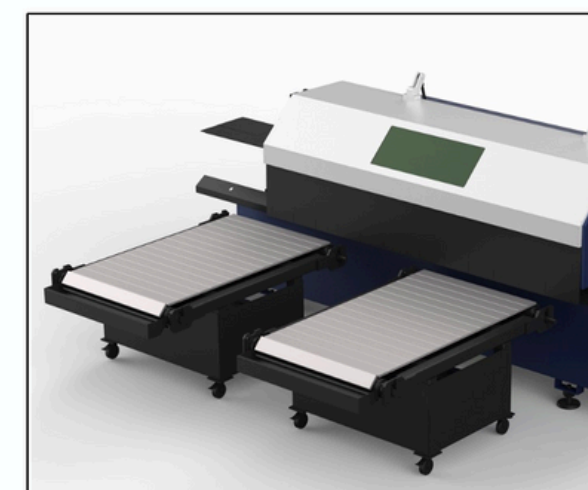
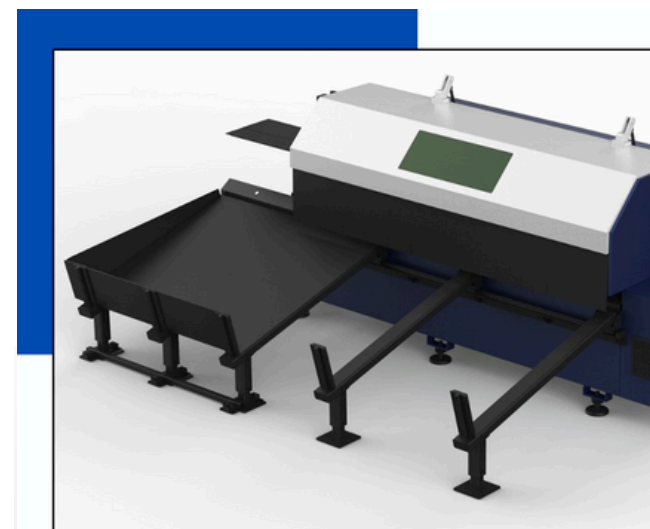
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**AUTOMATED  
LOADING  
LOADING**



**AUTOMATED  
UNLOADING**

# MEET OUR TUBE LASER PROCESSING SOLUTIONS

## **TX Series** FOR LARGE TUBE & PROFILES



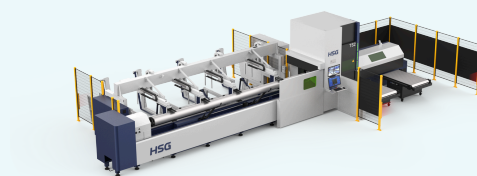
Cutting Head: 3D  
Laser Power: 6-20 [kW]  
Tube Max Diameter: 14.2"/19.7"

## **T Series** FOR MID-LARGE SIZE TUBE & PROFILES



Cutting Head: 2D  
Laser Power: 3-6 [kW]  
Max Tube Diameter: 13.78"

## **TS2** FOR MIDDLE-SIZE TUBE & PROFILES



Cutting Head: 3D  
Laser Power: 3-6 [kW]  
Max Tube Diameter: 10.74"

## **R Series** FOR SMALL-SIZE TUBE & PROFILES



Cutting Head: 2D  
Laser Power: 1.5-20 [kW]  
Max Tube Diameter: 4.72/9.45"



**Scan to Get Your  
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Part 3

# WHAT ELSE SHOULD YOU CONSIDER

Before Purchasing a Laser Cutter?

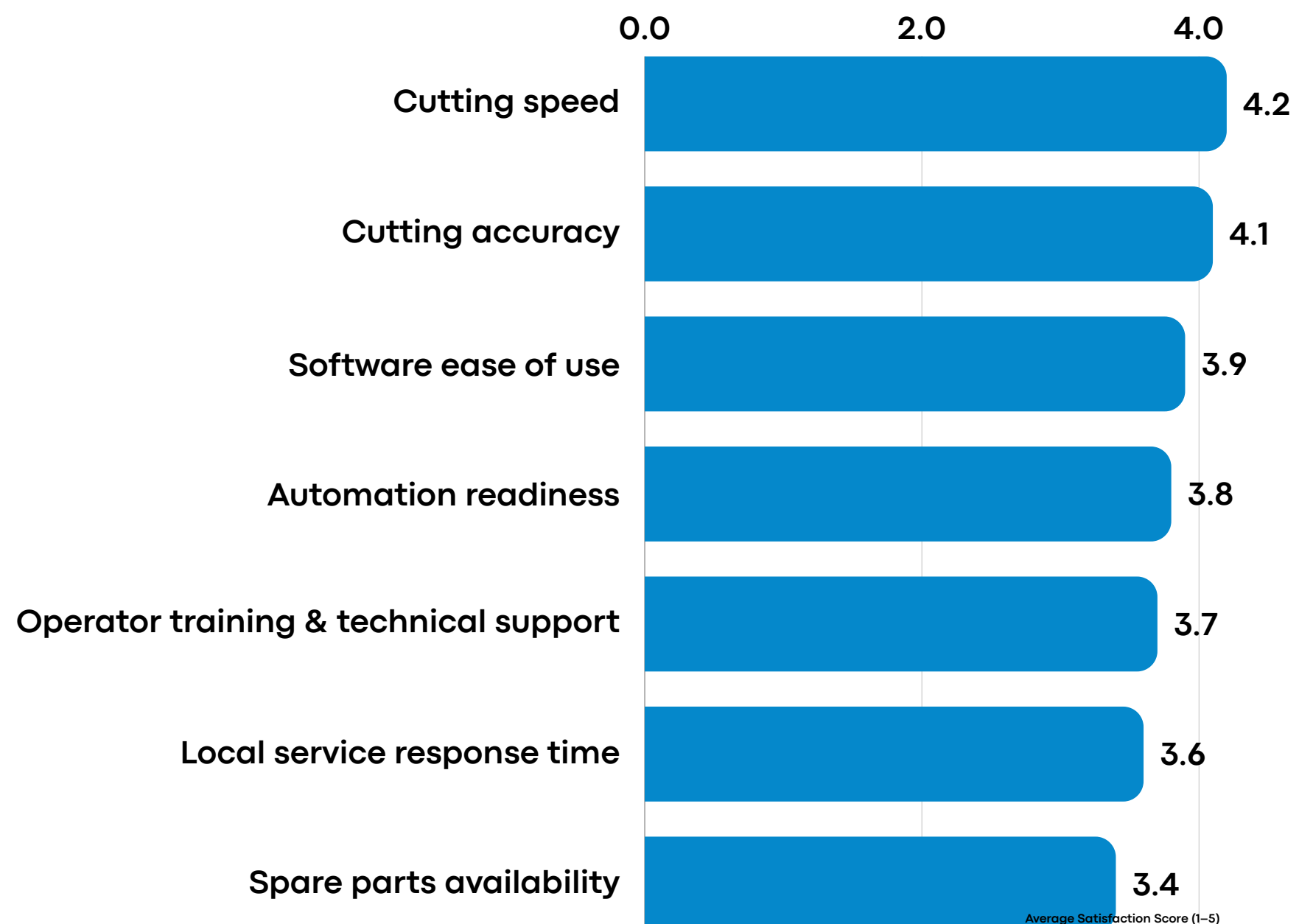


## FACTORS TO CONSIDER WHEN PURCHASING A LASER CUTTING SYSTEM

In a recent customer insights study conducted by HSG, U.S. manufacturers shared their top priorities when evaluating laser cutting equipment. The results offer a clear look into what drives purchasing decisions in 2025:

Factor	Average Satisfaction Score (1–5)
Cutting speed	4.2
Cutting accuracy	4.1
Automation readiness	3.8
Local service response time	3.6
Spare parts availability	3.4
Operator training & technical support	3.7
Software ease of use	3.9

### What Matters Most to Laser Cutter Users:





Part 4

LET OUR  
EXPERTS HELP  
YOU FIND THE  
RIGHT LASER  
CUTTER





CONTACT

# Let Our Experts Help You



## *HSG, Shaping Trust Across Continents*



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