






Plasma? Fiber laser?

Here are some considerations to help you choose.

Considerations	Plasma	Fiber laser
Cut quality 	ISO 9013 Range 2-4 cuts Rivals fiber laser cut quality, exceeds most customer requirements Minimal secondary operations for weld prep Cut edges are smooth, straight Yields minimal oxide layers and dross	ISO 9013 Range 1-2 cuts Thinner kerf size and low angularity benefits High precision and accuracy Excellent cut quality on thin metals As thickness increases over 12-16 mm (1/2 in.-5/8 in.) rougher surface finish and dross with fusion cutting
Versatility 	Greater stand off distance means less interference with the cutting process Cuts straight lines, bevels, holes, and complex shapes Cuts stainless steel, mild steel, aluminum, copper, brass, and other metals Cuts material that is imperfect and painted, rusty, or coated	Can cut, engrave, and mark Can cut complex and intricate shapes Cuts steel, aluminum, copper, plastics, and composites Although improving, requires specialty-grade materials, manual cleaning, or a pre-cut process to vaporize the coating
Cost 	Often has ROI of 2 years or less More affordable consumables Minimal post processing Depending on process selected, typically lower operating costs than fiber laser when cutting materials thicker than 12 mm (1/2 in.) primarily driven by gas and electricity consumption	Cutting systems are 2x-5x the cost vs plasma Fewer consumables used Minimizes material waste Depending on process selected, typically lower operating costs than plasma when cutting materials thinner than 12 mm (1/2 in.) primarily driven by gas and electricity consumption Higher gas and electricity consumption
Safety 	Only eye protection required for extended viewing of the plasma arc	Requires enclosures and material handling for safety concerns
Time savings/ automation 	Excellent choice for high-volume production and high cut speeds Can be easily intergrated with CNC systems for automated and cutting complex shapes and patterns Great for high-volume production or customized components Great option for robotic cutting	For thicker plates, parts can be difficult to remove from the skeleton, needing to be hammered out Can be integrated with CNC systems for automated, repeatable, high volume production Faster cut speeds for thinner material
Durability 	Simple in-house maintenance	More sensitive to dirty environments Requires regular cleaning and maintenance, which may require an authorized service center
Ideal for 	Thicker materials over 16 mm (5/8 in.) and applications that are cost effective and require faster cut speeds	Thin to medium thickness materials, high precision, excellent edge quality, intricate cuts