

WATERJET CUTTING COMPARED

	WATERJET	WIRE EDM	LASER	PLASMA	MILLING	PUNCH PRESS
ACCURACY	Average of $\pm 0.003"$ (± 0.08 mm) and up to $0.001"$ ($\pm 25 \mu$) ¹	$\pm 0.0001"$ ($\pm 2.5 \mu$)	$\pm 0.001"$ ($\pm 25 \mu$) ²	± 0.030 to $\pm 0.060"$ (± 0.75 to ± 1.55 mm)	$\pm 0.0003"$ ($\pm 8 \mu$)	Fair
THICKNESS	3" (75mm) or more for some applications	12" (30 cm)	Generally less than 0.25" (6.35mm)	Cuts less than 1.25"	Able to work on 3D parts	Works well with thin sheets
CUTTING SPEED	5-10 times faster than EDM when thickness is under 1"	5-10 times slower than waterjet	Very fast cutting in thin, non-reflective materials	Fast with thin sheets	Fair	Fast batch production when initial programming and setup are done
EDGE QUALITY	Good	Excellent	Excellent	Fair	Excellent	Fair
MATERIAL DISTORTION	No Distortion ³	No	Possible	Possible	No	Some
HEAT AFFECTED ZONE (HAZ)	None	Some	Yes	Yes	None	None
MATERIAL LIMITATION	Works in virtually all materials except really hard ceramics	Only works in conductive materials	Only non-reflective metals ⁴	Generally works in metals	Not ideal for very large parts	
PROCESS	Cold supersonic abrasive used to cut material	Spark erosion used to remove material from electrically conductive materials	Thermal process	Thermal process	Mechanical cutting tool	Shearing process
SETUP	Fast and easy set-up	Relatively easy set-up	Relatively easy set-up but may have to tune laser for different materials	Relatively easy set-up	Time consuming set-up and programming	Time consuming set-up and programming

FOOTNOTES

1. Better result can be achieved with advanced software
2. Better result with thin material
3. May have hazing near cut. No internal stress built up
4. May need different gas for cutting different materials