Perfect Laser Technologies

WATERJET CUTTING COMPARISON

Many manufacturers find that abrasive waterjet cutting is an ideal complement to their other processes. In many instances an abrasive waterjet can quickly produce a complete final part, ready to supply. There are also times when a semi-finished blank part suitable for secondary processing by conventional means is required.

The abrasive waterjet process does not affect material properties, so the efficiency of conventional processes is not degraded. Abrasive waterjet cutting is effective in many advanced and non-traditional materials where conventional processing may be a challenge.

Abrasive waterjet cutting is ideal for making short-run two-dimensional parts on a quick-turnaround basis and does not require a skilled machinist or specialised programmer. In addition, the fact that the abrasive waterjet process does not change material properties means that secondary machining can be carried out efficiently with conventional cutting tools. For your reference, here is a list of comparisons for cutting with some industry-used methods:

	WATERJET	PLASMA	LASER	CNC MILLING	PUNCH PRESS
CUTTING ACCURACY	± 0.08	± 0.75	± 0.05	± 0.001	± 0.1
MATERIAL THICKNESS	Up to 75	Less than 45	Less than 10	Variable 3D	Thin sheets only
CUTTING SPEED	Fairly slow	Fast	Fast	Very slow	Fast (after setup)
EDGE QUALITY	Excellent	Fair	Good	Excellent	Fair
MATERIAL DISTORTION	None	Possible	Possible	None	Some
HEAT AFFECTED	None	Yes	Yes	None	None
MATERIAL LIMITATION	Virtually all materials	Most metal	Only non-reflective metal	Not ideal for large items	Major setup costs per item
PROCESS	Cold supersonic abrasive cutting	Thermal ablation	Thermal ablation	Mechanical action	Shearing action
SETUP	Simple & fast easy setup	Relatively easy	Relatively easy	Time consuming setup & programming	Time consuming expensive setup

Perfect Laser Technologies (Pty) Ltd
Unit 6, 451 Vale Ave, Randburg.
Tel: 087 135 2958
www.perfectlaser.co.za
sales1@perfectlaser.co.za

October 2016