TECHNICAL BULLETIN # 27

Fiber Engraver vs Fiber Cutter

For some odd reason, people keep asking whether a fiber engraver can cut thin metal. Well, the answer is yes. And no.

If you buy a 50cc scooter, it is designed to carry one person, at a maximum speed of about 80Km/h. However (illegally) you can put a passenger on the back, and if the road is level (or a slight downhill), you could quite possibly coax 120Km/h out of it.

However, as it is not designed for this, you would be taking both your lives into your hands. The wheels are too small for those conditions, the brakes are too flimsy for those conditions, and the engine will be screaming at maximum revolutions.

But it can be done.

A fiber engraver is designed to mark (mostly) metal, and it does this by either burning, annealing or ablating the material to create a contrasting mark. If you put enough power into it, and go over and over the same area (sometimes up to 200 times), it will eventually force its way through - just like ravines were formed by water erosion over millions of years.

The head and lens are fixed, and the Galvo mirrors move the laser beam over the area to be marked. This also means that any gases produced by the lasering process - and any splatter - are likely to stick to the lens, drastically shortening its lifespan.

A fiber cutter is designed to cut (mostly) metal, and it does this with the aid of an assist gas (Oxygen or Nitrogen - depending on the metal to be cut) that enables the laser beam to pierce the metal - and then to keep the metal in a molten state while moving the head according to the design.

Fiber engravers generally use a laser source in the 30 Watts to 100 Watts range, and fiber cutters use a laser source from 500 Watts to 24 000 Watts (currently).

So to go back to the bike analogy, a fiber cutter would be more like a turbo-charged superbike that could easily take two people at well over the legal speed limit - relatively safely.

Does it cost more than an engraver? Yes, obviously. But it is *designed* to cut metal - anything from 0.5mm to 20cm or more - depending on the power...

Perfect Laser Technologies (Pty) Ltd
Unit 6, 451 Vale Ave, Randburg.
Tel: 010 157 0012
www.perfectlaser.co.za
sales1@perfectlaser.co.za

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