

Introduction to Laser MicroWelding Technology 4M+S=29

Our Corporate Philosophy is to incorporate new skills into manufacturing. 4M+S=29
 This time, through laser welded joints of small-diameter pipes of optical units and SUS thin-walled pipes,
 I would like to introduce FUTA and Q's **technique (Skill)**.



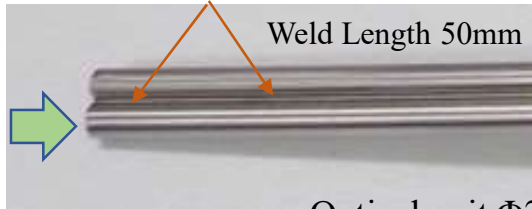
■ Customer's request

・ I want to weld SUS pipes for inserting forceps linearly aligned on the top of the pipe of the optical unit.

Concerns: ① Optical fibers for illumination and imaging are located inside the pipe of the optical unit, Distortion caused by heat during welding may affect optics (image).

② The weld joints should not be as conspicuous as possible.

Linear laser welding of SUS pipes



Φ2.4mm pipe

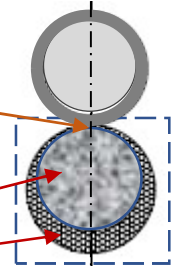


Laser Welding

For images

For lighting

SUS thin pipe



Optical unit

Optical unit Φ2.8mm pipe

■ Innovative points for realization

① In small-diameter pipe welding using a laser beam machine, the laser beam width becomes narrower and penetrates deeper. Therefore, it is necessary to set the welding conditions that do not damage the optical fiber.

② To make a fine, smooth and linear welding beam on a pipe machined surface.

■ Customer evaluation after delivery

① No optical effect due to heat during welding.

② The laser welded part is beautiful and perfect as a product.



Finished product

SUS thin pipe

Optical unit



Image (chart) check ⇒ No fiber damage



Person in charge voices: I was struggling with setting laser welding conditions that did not damage the optical fiber.

FUTA-Q Precision provides machining technologies that satisfy customer specifications.

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