

## New technology proposals for small-diameter pipes of Elgiloy

In the manufacture of parts and product development by taking advantage of its **toughness** and **high hardness** features of **Elgiloy**, we propose the processing technology that leads to this .

**Elgiloy** offers a variety of laser processing capabilities. For laser cutting Laser welding with SUS material creates new product ideas.

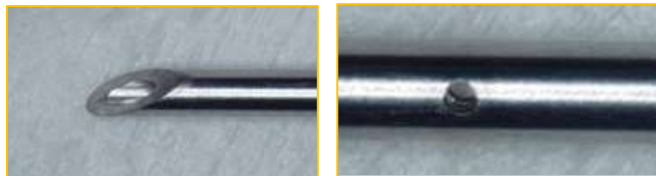
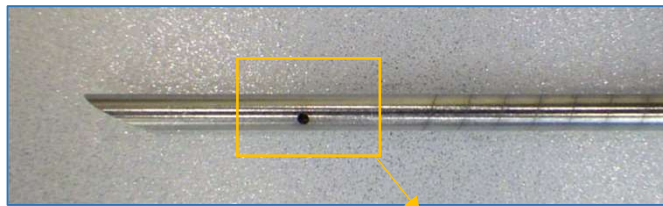


### ■ Example of laser processing to Elgiloy

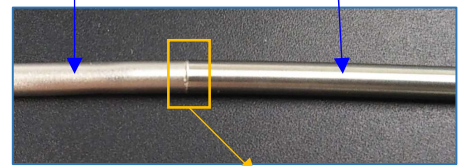
- For the first time, a **small-diameter pipe of Elgiloy** will be introduced.

Sample photo of laser processing to

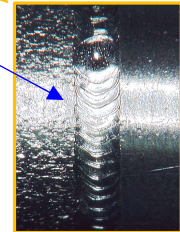
- Of Elgiloy and SUS304 with **YAG-laser welders**  
Dissimilar metals were welded. The tensile strength was 487MPa.
- With diagonal cutting at the tip of a **fiber laser machine**  
Drilling and spiral processing were performed. Tough  
The metal bends flexibly (bottom of the picture).



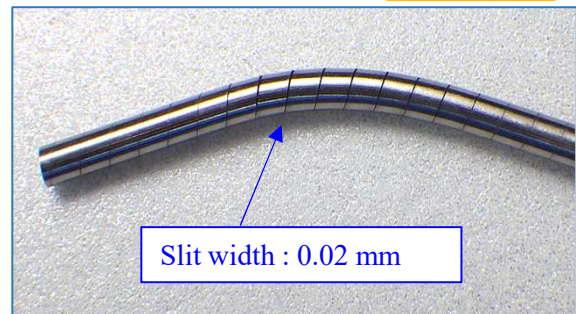
SUS304 & Elgiloy  
Outer diameter :  $\Phi 1.6\text{mm}$   
Bore diameter :  $\Phi 0.7\text{mm}$



Firmly melted  
With a weld bead  
I was able to confirm.



[Spiral processing]



Slit width : 0.02 mm

### [YAG laser welding machine]



- Seam (Continuous welding possible)
- Weld depth: 0.1 to 0.3mm
- Laser min diameter :  $\Phi 0.016\text{mm}$
- In the X-axis, Y-axis, and rotation directions movable welding possible
- Fine spot welding is possible

### [Fiber laser beam machine]



- Machining O.D. :  $\Phi 0.3\text{mm}$  or more
- Machined wall thickness: 0.5mm or less
- Processing shape : round objects only
- Laser cut width: 20  $\mu\text{m}$
- Machining accuracy: Approx. 50 $\mu\text{m}$

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