FUTA-Q Imagination & Innovation

Technical Information

Vol. 19

Inner Surface Polishing for Small-diameter Pipe

1. Mr. Roughness

Inner surface polishing is one of the inevitable techniques for producing high quality pipes of medical or analysis use. Mirror polishing of the inner surface of an analysis nozzle, for example, can suppress the adhesion of contaminants to improve the washability and analytical performance. Inner surface polishing for small-diameter pipes is one of the FUTA-Q's core technologies, with which we can polish a pipe having the diameter of 0.5 mm, even with bent, tapered, or drawing section where polishing seems to be difficult for.

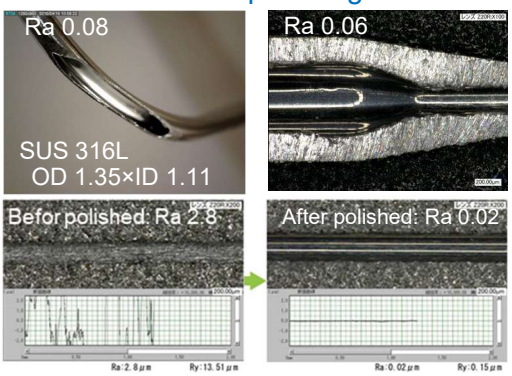
2. Inner surface polishing methods in FUTA-Q

Polishing methods		Descriptions	Production
Physical polishing	Fine tube polishing	Polishing an inner surface of a nozzle or straight pipe with abrasive grains directly.	volume
	Special polishing	Polishing an inner surface of a curved or tapered pipe.	volume
	Buffing	Polishing an outer surface of a work or an inner surface of a short pipe with bigger than 0.4 mm in ID.	volume
Chemical polishing		Polishing a surface of a metal part having a complex shape by chemically dissolving the surface.	volume

3. Pipe materials and specifications

The pipes classified in gauge sizes on the right table can be produced in volume. The materials for these pipes can be selected from stainless steel, titanium, cobalt alloys. Other materials or sizes with inner surface polishing are also available as options.

Bent and tapered section with inner surface polishing



Materials for small-diameter pipes (SUS, β-titanium, pure titanium, MP35N, ELGILOY, etc.)							
Gauge (G)	Outside diameter (mm)	Internal diameter (mm)	Length (mm)	Inner surface roughness (μm)	SUS	Ti	Cobalt alloy
26G	0.45	0.23	230	≦Ra0.8	✓	✓	–
25G	0.51	0.26	230	≦Ra0.8	✓	✓	–
24G	0.55	0.3	230	≦Ra0.2	✓	✓	–
23G	0.63	0.33	230	≦Ra0.2	✓	✓	–
22G	0.71	0.41	230	≦Ra0.06	✓	✓	–
21G	0.81	0.51	480	≦Ra0.06	✓	✓	✓
20G	0.88	0.58	480	≦Ra0.06	✓	✓	✓
19G	1.06	0.7	480	≦Ra0.06	✓	✓	✓
18G	1.26	0.9	480	≦Ra0.06	✓	✓	✓
17G	1.48	1.12	480	≦Ra0.06	✓	✓	✓
16G	1.61	1.25	480	≦Ra0.06	✓	✓	✓
15G	1.81	1.45	480	≦Ra0.06	✓	✓	✓
14G	2.11	1.69	480	≦Ra0.06	✓	✓	✓
13G	2.41	1.99	480	≦Ra0.06	✓	✓	✓
12G	2.76	2.4	480	≦Ra0.06	✓	✓	✓
11G	3.06	2.64	480	≦Ra0.06	✓	✓	✓
10G	3.4	2.84	480	≦Ra0.06	✓	✓	✓
	1.6	0.6	480	≦Ra0.06	✓	✓	✓

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