

SHANGDUN SPECIAL MATERIALS CO., LTD.

企业简介

COMPANY PROFILE

上海上盾金属材料有限公司是一家致力于发展高端用途高性能纯净材料的科技型企业，专业生产镍基耐蚀合金BA管、不锈钢EP管、不锈钢EP管件、哈氏合金EP管、超级纯净不锈钢等特殊材料。公司拥有一批高素质的金属材料和特殊冶金工程技术人员，具备很强的材料研发生产能力。

我公司是从原材料冶炼到生产出超级纯净不锈钢圆钢、EP母管、EP管、EP管件的生产型企业，公司生产的产品广泛运用于半导体、医疗、光伏、航空航天、核电、船舶、石油化工等领域，得到了国内外客户的一致好评。

我们是一个专业、严谨、诚实守信、负责任的团队，欢迎国内外朋友一起携手合作共赢未来，我们真诚热情的为您服务。

SHANGDUN SPECIAL MATERIALS CO., LTD. is a scientific and technological enterprise which committed to the development of high-performance materials, specialized in the production of nickel alloy, titanium alloy, zirconium alloy, high strength steel, super pure stainless steel and other special materials. The company has a group of high quality technical engineers, with a strong capacity in R&D and production.

SHANGDUN SPECIAL MATERIALS CO., LTD. has the first-class Technology for EP bars, tubes and fittings in China for semiconductor. The company's products are widely used in semiconductor, aerospace, nuclear power, ship, petrochemical and other fields, obtained the domestic and foreign customer's high praise.

We have a professional, preciseness, integrity, and responsible team. Sincerely expected to cooperate with you.

EP TUBE Series

一、 半导体用原材料(Semiconductor Raw Material):

1) 超纯净不锈钢 316L

Ultra-Pure Stainless Steel AISI 316L

Principal Component Ratio(mass%)

冶炼方式 Smelting Method	超高纯材料化学成分 (*ppm) Chemical composition of ultra-high purity materials
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	元素	C	Si	S	Mn	P	Cu	Cr	Ni	Mo	O*	N*	H*
	SEMI F20	≤0.030	≤1.00	≤0.01	≤1.50	≤0.045	≤0.3	16.0~18.0	10.0~15.0	2.0~3.0	/	/	/
(VIM+VAR)	SQ316L-I	0.005	0.2	0.001	0.6	0.003	0.010	17.7	14.80	2.70	8	30	1
(VOD+VAR)	SQ316L-II	0.008	0.3	0.001	0.7	0.015	0.15	17.2	14.70	2.52	10	60	2
(EAF+VOD+LF)	SQ316L-III	0.011	0.38	0.006	0.9	0.02	0.19	16.70	13.6	2.13	30	120	3
(EAF+VOD)	SQ316L-IV	0.021	0.42	0.007	0.9	0.02	0.25	16.15	10.08	2.13	40	150	5

应用领域: 广泛用于半导体产品制造, 超高真空阀门装置, 过滤器外壳等要求超净性, 超低气体成分的不锈钢。

Applications: semiconductor manufacturing equipment, ultra high vacuum valve device, filter Housings etc.

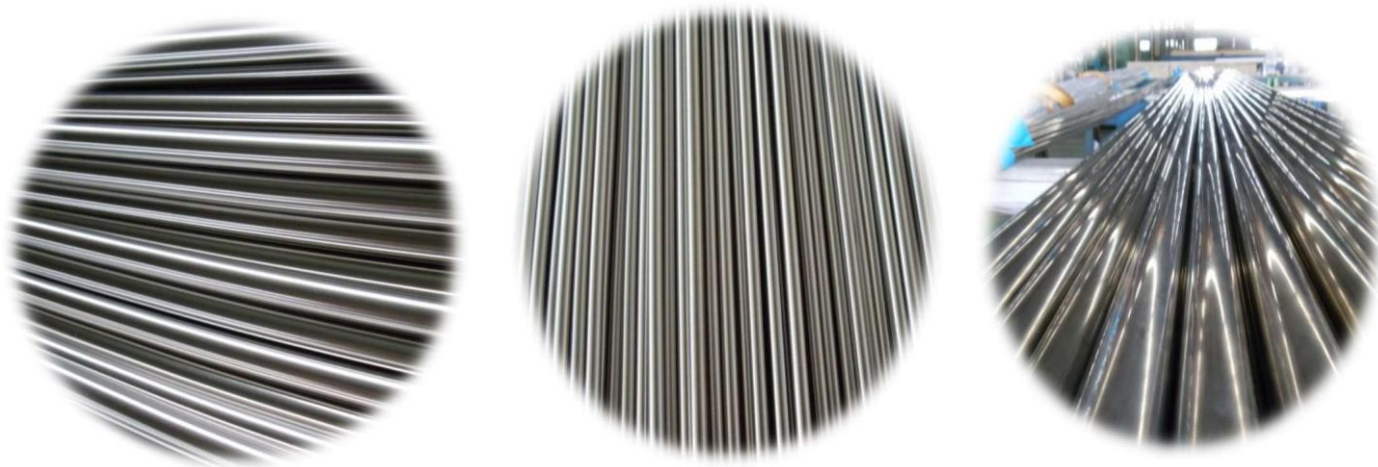
技术重点: 在素材的制造过程中采用VIM+VAR冶炼, 降低非金属夹杂和气体成分。

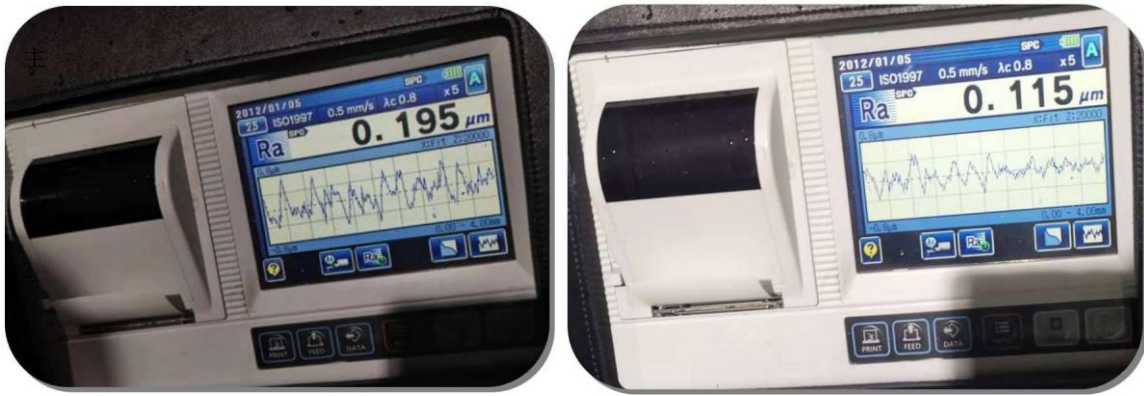
(Key Technology: special smelting of VIM+VAR is used to reduce "non-metallic inclusion & gas composition" in the production of materials)

非金属夹杂等级 Nonmetallic Inclusions:

钢级 Grade	ASTM-D 法 (Worst Thin)				
	0.5	1.0	1.5	2.0	2.5
SQ316L-I					
SQ316L-II					
SQ316L-III					
SQ316L-IV					

二、 不锈钢光亮管BA 管/ Bright Annealed Precision Tube





要钢级/钢号 Designation: TP304L, TP316L 等

执行标准 Standards: ASTM A269, ASTM A213, GB13296, JIS G3459

规格表 Size:

美标英制规格 ASTM		美标规格ASTM		日表规格 JIS			
外径 (OD)	壁厚 (T) mm	外径 (OD) mm	壁厚 (T) mm	外径 (OD)	壁厚/T mm	外径 OD (mm)	壁厚 (T) mm
1/8"	0.5	3.18	0.5				
1/4"	0.89	6.35	0.89	8A	1.24	13.8	1.24
3/8"	0.89	9.53	0.89	10A	1.24	17.3	1.24
1/2"	0.89	12.7	0.89	15A	1.65	21.7	1.65
1/2"	1.24	12.7	1.24	20A	1.65	27.2	1.65
1/2"	1.65	12.7	1.65	25A	1.65	34	1.65
5/8"	1.65	15.88	1.65	32A	1.65	42.7	1.65
3/4"	1.65	19.05	1.65	40A	1.65	48.6	1.65
1"	1.65	25.4	1.65	50A	1.65	60.5	1.65
1.5"	1.65	38.1	1.65	备注: 特殊规格可定制 (Remark : Special Products Can Be Customized)			
2"	1.65	50.8	1.65				
2.5"	1.65	63.5	1.65				

技术参数 Technical Reference:

1、普通 BA 管, 原材料来自华新丽华、永兴、宝钢、太钢, 内壁粗糙度 Ra0.4um 以下, 包装:裸包装, 两

端去毛刺。

Ordinary BA Tube:

Raw materials are from WALSIN、YONGXING、Baosteel,TISCO

Inner surface roughness < Ra0.4um,

Package: loose package deburring at both side.

2、洁净 BA 管，原材料进口或者国内真空冶炼，内壁粗糙度 Ra0.3um 以下，包装:每支套袋戴管帽，端口平口。

Clean BA Tube:

Raw materials are imported from overseas or domestic vacuum metling (VIM)

Inner surface roughness < Ra0.3um

Package: each pipe with plastic bag & cap, plan end

3、超纯净洁净 BA 管，原材料进口或者国内真空冶炼，内壁粗糙度 Ra0.2um 以下，洁净清洗，无尘洁净室包装，氮气灌满后每支两头戴管帽，套袋包装。

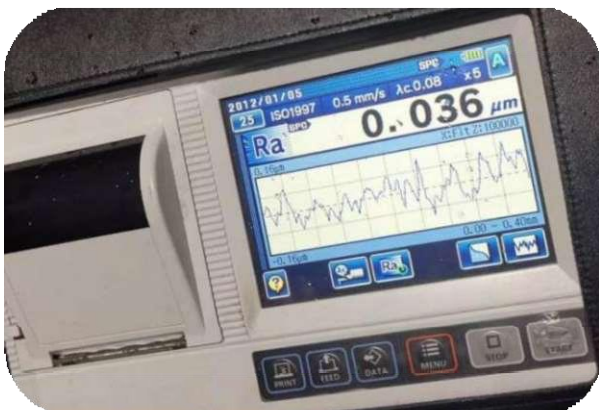
Ultra-Pure BA Tube:

Raw materials are imported or domestic vacuum metling(VIM+VAR).

Inner surface roughness < Ra0.2um, clean wash.

Package : both end with caps and plastic bags after fullled with nitrogen gas in dust-fress room

三、不锈钢 EP 管/ Stainless Steel EP Pipe



主要钢级/钢号 Designation: TP316L 控硫 (S: 0.005~0.012)

执行标准 Standards: ASTM A269& SEMEI F20-0706E, JIS G3459& SEMI F20-0706E, SEMI F19-0304, ASME BPE-2012

规格表 Size :

		美标规格 ASTM		日标规格 JIS			
外径 (OD)	壁厚 (T)	外径 (OD) mm	壁厚 (T) mm	外径 (OD)	壁厚 (T)	外径 (OD) mm	壁厚 (T) mm
1/8"	0.5	3.18	0.5				
1/4"	0.89	6.35	0.89	8A	1.24	13.8	1.24
3/8"	0.89	9.53	0.89	10A	1.24	17.3	1.24
1/2"	0.89	12.7	0.89	15A	1.65	21.7	1.65
1/2"	1.24	12.7	1.24	20A	1.65	27.2	1.65
1/2"	1.65	12.7	1.65	25A	1.65	34	1.65
5/8"	1.65	15.88	1.65	32A	1.65	42.7	1.65
3/4"	1.65	19.05	1.65	40A	1.65	48.6	1.65
1"	1.65	25.4	1.65	50A	1.65	60.5	1.65
1.5"	1.65	38.1	1.65	备注：特殊规格可定制 (Remark : Special Products Can Be Customized)			
2"	1.65	50.8	1.65				
2.5"	1.65	63.5	1.65				

1、 BPE 级 EP 管，原材料来自华新丽华、永兴、宝钢、太钢，内壁粗糙度： $Ra \leq 0.25\mu m$ ，洁净清洗，无尘洁净室包装，氮气灌满后每支两头戴管帽，套袋两层包装。(普通气体管路使用)

Ordinary BPE GRADE EP Tube:

Raw Materials are from YONGXING, Baosteel, TISCO

Inner surface roughness $< Ra 0.25\mu m$, clean washing.

Package : both end with caps and two-layer plastic bag after fullled with nitrogen gas in dust-fress room.
(General gas pipeline use.)

2、 HP 级 EP 管，原材料进口或者国内真空冶炼，内壁粗糙度： $Ra \leq 0.2\mu m$ ，电解抛光后电解层 Cr/Fe 大于等于 1.5，氧化层厚度大于等于 1.5nm, CPT 临界点蚀温度大于 25℃，电阻率大于等于 18 兆欧的超纯水清洗，无尘洁净室包装，氮气灌满后每支两头戴管帽，套袋两层包装。(特种气体管路使用)

Clean HP GRADE EP Tube:

Raw materials are imported or domestic vacuum metling (VIM) from domestic mills.

Inner surface roughness < Ra0.2um.

Electrolytic layer Cr/Fe ≥1.5 after electrochemical polishing & clean wash.

Package both end with caps and two-layer plastic bag and after full with nitrogen gas in dust-fress room.

(Special gas pipeline use.)

3、UHP 级 EP 管，原材料进口或者国内真空冶炼，内壁粗糙度:Ra≅0.125um，电解抛光后电解层 Cr/Fe 大于等于 1.5，氧化层厚度大于等于 1.5nm,CPT 临界点蚀温度大于 30℃，电阻率大于等于 18 兆欧的超纯水清洗，无尘洁净室包装，氮气灌满后每支两头戴管帽，套袋两层包装。(特种高纯腐蚀性气体管路使用)

(Ultra-Pure EP Pipe, raw materials are imported or domestic vacuum metling(VIM+VAR)

Inner surface roughness < Ra0.125um

Electrolytic layer Cr/Fe ≥1.5 after electrochemical polishing & clean wash

Package :both end with caps and two-lays plastic bag after full with nitrogen in dust-fress room. (Special

high purity corrosive gas pipeline use.)

四、镍基合金 BA 管 Corrosion Resistant Alloy BA Pipe:

主要钢级/钢号 Designation: Monel 400 (UNS N04400) ,UNS N02201,

Inconel 600(UNS N06600), N6 (UNS N02200), Incoloy UNS N08800 , UNS N08810,

UNSN06025, UNS N08825 ,UNS N10276, UNS N06022, UNS N08811, UNS

N06059,UNS N10001, UNS N10665, UNS N06625, UNS N08028, UNS N06690, UNS N06601, UNS N06455 等。

执行标准 Standards: GB15011,JB4742,ASME SB-161, ASME SB-163, ASME SB-165, ASME SB-167, ASME SB - 622

规格范围: 外径 (OD) : 3.18~114.3mm , 壁厚 (WT) :0.5~7.11mm, 长度 (L) :≤8000mm

原材料来自中钢、宝钢、太钢

Materials are from Sinosteel, Baosteel, Tisco

内壁粗糙度 Inner roughness : : Ra≤0.5um

各标准材质对应表 Material designation:

Brand	GB	ASTM	DIN	BS	AFNOR
Incoloy 800	NS111	N08800	W.Nr.1.4876	NA15	Z8NC32. 21
			X10NiCrAlTi3220		
Incoloy 800H	NS112	NO8810	W.Nr.1.4958	NA 15 (H)	
			X5 NiCrAlTi 31-20		

Incoloy 800HT		N08811	W.Nr.1.4959*		
			X 8 NiCrAlTi 32-21		
Incoloy 825	NS142	N08825	W.Nr.2.4858	NA16	NC21Fe Du
			NiCr21Mo		
Inconel 600	NS312	N06600	W.Nr.2.4816	NA14	NC15FE
			NiCr1 5Fe		
Inconel 601	NS313	N06601	W.Nr.2.4851		NC23Fe A
			NiCr23Fe		
Inconel 625	NS336	N06625	W.Nr.2.4856	NA21	NC22DN b
			NiCr22Mo9Nb		
Inconel 718	GH4169	N07718	W.Nr.2.4668	NA 51	NC19Fe Nb
			NiCr19Fe19Nb5Mo3		
Incoloy 926		N08926	W.Nr.1.4529	X1NiCrMoC u	X1NiCrM oCu
			X1NiCrMoCu		
Inconel X-750	GH4145	N07750	W.Nr.2.4669		NC15TN bA
			NiCr15Fe7TiAl		

Brand	GB	ASTM	DIN	BS	AFNOR
Monel 400		N04400	W.Nr.2.4360	NA 12	Nu 30
			NiCu30Fe		
Hastelloy B	Ns321	N10001			
Hastelloy B-2	NS322	N10665	W.Nr.2.4617		NiMo28
			NiMo28		
Hastelloy C	NS333				
Hastelloy C-22		N06022	W.Nr.2.4602		
Hastelloy C276	NS334	N10276	W.Nr.2.4819	NC17D	
			NiMo16Cr15W		
254SMO		S31254	W.Nr.1.4547		

904L		N08904	W.Nr.1.4539		
GH1140	GH1140				
GH2132	GH2132	S66286	W.Nr.1.4890		
Carpenter 20	NS143	N08020	W.Nr.2.4660		
			NiCr20CuMo		

五、哈氏合金 EP 管 (Hastelloy EP TUBE)

5.1、原材料纯净哈氏合金 Raw Materials for purity Hastelloy series :

化学成分 Principal Component Ratio(mass%)

Material	Ni	Mo	Fe	Mn	C	Si	S	Cr	Ti	P	V	Co	W
UNS N10276	Rest	15.0-17.0	4.0-7.0	≤1.0	≤0.010	≤0.08	≤0.03	14.5-16.5	--	≤0.040	≤0.35	≤2.5	3.0-4.5
UNS N06022	Rest	12.5-14.5	2.0-6.0	≤0.5	≤0.015	≤0.08	≤0.02	20.0-22.5	--	≤0.020	≤0.35	≤2.5	2.5-3.5
UNS N06455	Rest	14.0-17.0	≤3.0	≤1.0	≤0.015	≤0.08	≤0.03	14.0-18.0	≤0.70	≤0.040	/	≤2.0	/

应用领域: 广泛用于半导体产品制造, 超高真空阀门装置, 过滤器外壳, 核电、军工等超腐蚀, 超临界环境等要求超净性及超耐腐蚀性能。

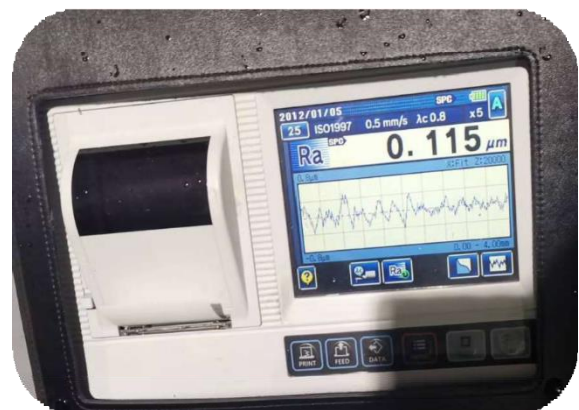
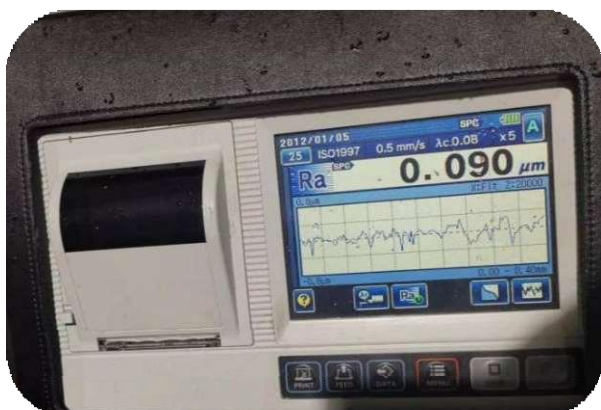
技术重点: 在素材的制造过程中采用VIM+VAR 冶炼, 降低非金属夹杂和气体成分。

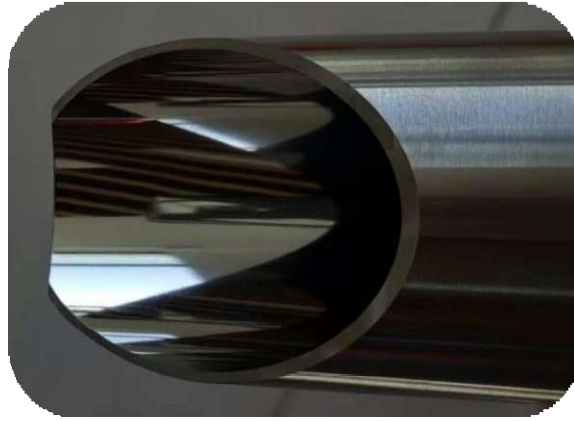
(Key Technology: special smelting of VIM+VAR is used to reduce "non-metallic inclusion & gas composition " in the production of materials .)

钢级	ASTM-D 法 (Worst Thin)				
	0.5	1.0	1.5	2.0	2.5
S22 (UNS N06022)					
S276 (UNS N10276)					

非金属夹渣等级 Nonmetallic Inclusions:

5.2、哈氏合金 EP 管/ EP Pipe





执行标准 Standards: ASME SB - 622& SEMEI F20-0706E, SEMI F19-0304, ASME BPE-2012

1 规格表 Size :

		美标规格 ASTM		日标规格JIS			
外径 (OD)	壁厚 (T)	外径 (OD)	壁厚 (T)	外径 (OD)	壁厚 (T)	外径 (OD)	壁厚 (T)
1/4"	0.89	6.35	0.89	8A	1.24	13.8	1.24
3/8"	0.89	9.53	0.89	10A	1.24	17.3	1.24
1/2"	0.89	12.7	0.89	15A	1.65	21.7	1.65
1/2"	1.24	12.7	1.24	20A	1.65	27.2	1.65
1/2"	1.65	12.7	1.65	25A	1.65	34	1.65
5/8"	1.65	15.88	1.65	32A	1.65	42.7	1.65
3/4"	1.65	19.05	1.65	40A	1.65	48.6	1.65
1"	1.65	25.4	1.65	50A	1.65	60.5	1.65
1.5"	1.65	38.1	1.65	备注: 特殊规格可定制 (Remark : Special Products Can Be Customized)			
2"	1.65	50.8	1.65				

2、 BPE 级 EP 管, 原材料来自中钢、宝钢、太钢, 内壁粗糙度: $Ra \leq 0.25\mu m$, 洁净清洗, 无尘洁净室包装, 氮气灌满后每支两头戴管帽, 套袋两层包装。(普通气体管路使用)

Ordinary EP Tube, Raw Materials are imported and domestic Baosteel, TISCO.

Inner surface roughness $< Ra 0.25\mu m$, clean washing.

Package: both end with caps and two-layer plastic bags after full with nitrogen gas in dust-fress room. (General gas pipeline use.)

3、HP 级 EP 管，原材料进口或者国内真空冶炼，内壁粗糙度： $Ra \leq 0.2\mu m$ ，电解抛光后电解层Cr/Fe 大于等于 1.5，氧化层厚度大于等于 1.5nm,CPT 临界点蚀温度大于 35℃，电阻率大于等于 18 兆欧的超纯水清洗，无尘洁净室包装，氮气灌满后每支两头戴管帽，套袋两层包装。(特种气体管路使用)

Clean EP Tube:

Raw material are imported or domestic vacuum metling (VIM)

Inner surface roughness $< Ra0.2\mu m$.

Electrolytic layer Cr/Fe ≥ 1.5 after electrochemical polishing & clean wash.

Package:both end with caps and two-layer plastic bags after full with nitrogen gas in dust-fress room.

(Special gas pipeline use.)

六、EP 管件



我们可以提供从 7°到 180°的各种对焊弯头 We can do any custom angles (From 7° to 180°.)

标准 (Factory Standards): EN 10253-2 / 10253 - 4 Typ A and B, DIN 2605 Part 1 and 2, ASME B16.9, production according to customer specification.

弯头种类 (Type of Elbow):长半径 (long radius) - 2D, 3D, 5D , 短半径 (short radius) - 2D, 3D, 5D, (long radius & short radius - see Center to center distance for further options)

材料 (Materials): **TP304L, TP316L, Inconel, Incoloy, Hastelloy**

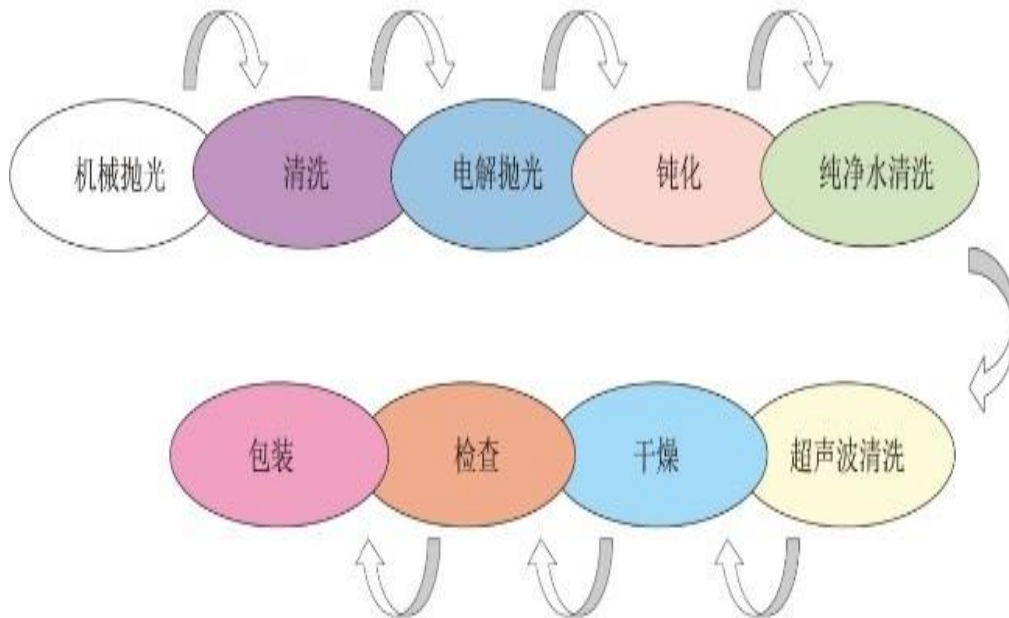
尺寸规格: 1/4"~ 6", 内壁粗糙度: $Ra \leq 0.2\mu m$

七、电解抛光工艺流程(Flow Chart Electrolytic Polishing):

工艺

你想知道的 就是我们努力的

SUPER MECHANICAL
CLEANING



战略伙伴 Strategic Partners





TOSHIBA
Leading Innovation >>>



RELIANCE Energy
Anil Dhirubhai Ambani Group

GEA
Energy Technology Division



Sumitomo Corporation

BASF
The Chemical Company

CGN



Aker

HITACHI
Inspire the Next



ALSTOM

SHANGDUN SPECIAL MATERIALS CO.,LTD.

