

The logo that you can trust



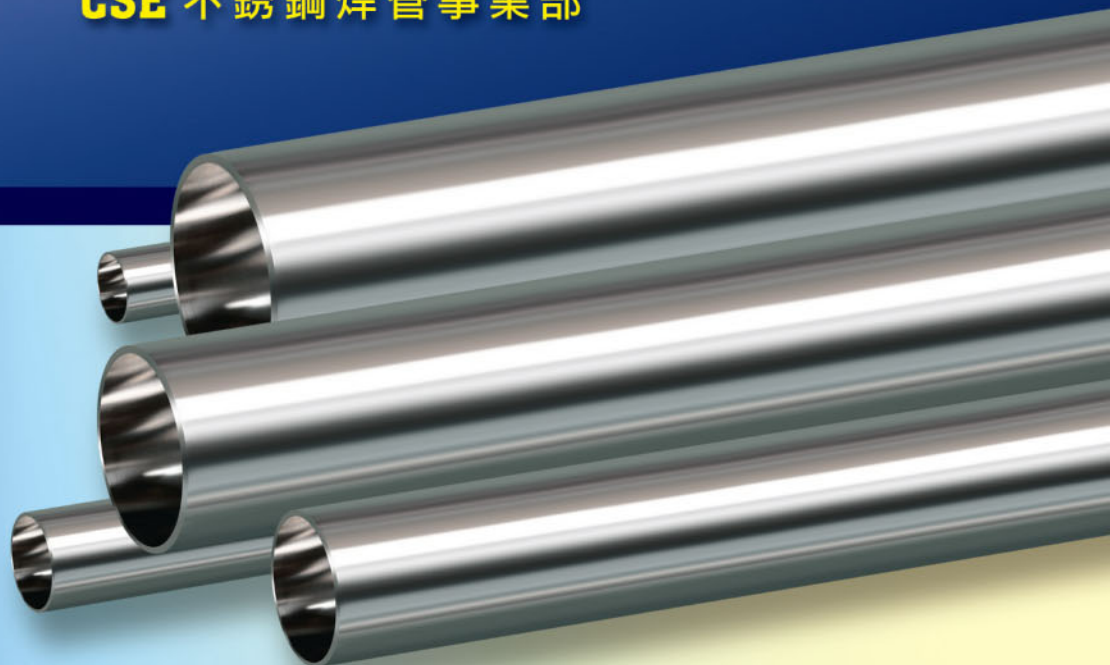
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CSE Group

CSE STAINLESS STEEL WELD TUBES DIVISION

CSE 不銹鋼焊管事業部



For Food, Pharmaceutical, Biological, Structural, Unclear, Semi-conductor industry.

食品 · 醫療 · 生化 · 裝潢 · 核電 · 半導體

CSE ORGANIZATION

CSE組織圖

CSE Group / CEO
CSE集團執行長
Roger Shi 許志吉



CSE Head Office CSE總公司

750 people in CSE group sincerely
offer their professional service for you.

C.S.E certified by 3A and TÜV ISO 9001
with EN10204 3.1 material cert. will be
your assurance of outstanding quality
& service.



Taiwan 台灣

Office / Factory
辦公室 / 工廠



Thailand 泰國

Office: Bangkok
曼谷辦公室

Factory
工廠



China 中國

Office: Shanghai
上海辦公室

Factory: Xiamen
廈門工廠

Section 部門	R&D Dept. / Sales Dept. / Financial Dept. / Production Dept. 管理部 / 開發部 / 業務部 / 財務部 / 生產部		Sales Dept. 業務部	Production Dept. 生產部	Sales Dept. 業務部	Production Dept. 生產部
Area 面積	2500 m ² 2500 square meter		600 m ² 600 square meter	20000 m ² 20000 square meter	3000 m ² 3000 square meter	35000 m ² 35000 square meter
Certificate of Quality 品質證書	TUV ISO 9001 : 2000 / 3A		TUV ISO 9001 : 2000 / 3A		TUV ISO 9001 : 2000 / 3A	



Tube Manufacture
製管



Sanitary Tube Stock
衛生級長管庫存



Butterfly Valve /
Actuator
各式蝶閥 / 汽動頭



CSE OEM Valve /
Tank Valve
隔膜閥 / 桶底閥



Check Valve /
Sight Glass
逆止閥 / 玻璃视窗



Range Pipe Fitting
各式彎管三通



Range Union & Fitting
各式由任



CNC Milling Center
CNC切削中心



BPE EP Processing
& Inspection
BPE管件電解流程與檢驗

C.S.E Hygienic Products

C.S.E was founded by a group of many years experienced specialists with products developing, designing, producing management and quality control.

C.S.E is combined by CSE Taiwan, Thailand and China for full Sanitary production line. CSE TAIWAN from CAD designed to automatic CNC machining to assembly, weld and joint the processing line.

CSE Thailand Manufacturing will be from Tube to Bending to polished to Electric polished.

CSE China Producing will be from-Forging Lost Wax casting- Sand Casting to CNC till Assembly.

We have 3 sales offices and distributors for width range products and full services for food, pharmaceutical and vacuum as well as semiconductor industries.

C.S.E (Taiwan, Thailand, China factories) products range is covering: Various types of auto control valves, Diaphragm valves, butterfly valves, check valves, unions, thread unions, elbows, tees and Sanitary tubes, BPE Tubes, E/P Tubes, as well as E/P Fittings, pipes.... etc.

CSE Stainless Steel Weld Tubes Division - CST

不銹鋼焊管事業部

Overview

We Know What is quality you need !!!



We produced each CSE Tube based on our strictly inspections and accumulated experiences in the actual process line.

我們深知您對管子的需求!!

我們CSE生產的每一根管子不僅通過嚴謹的品管檢測，更是透過實際工程應用經驗反覆淬鍊而成。

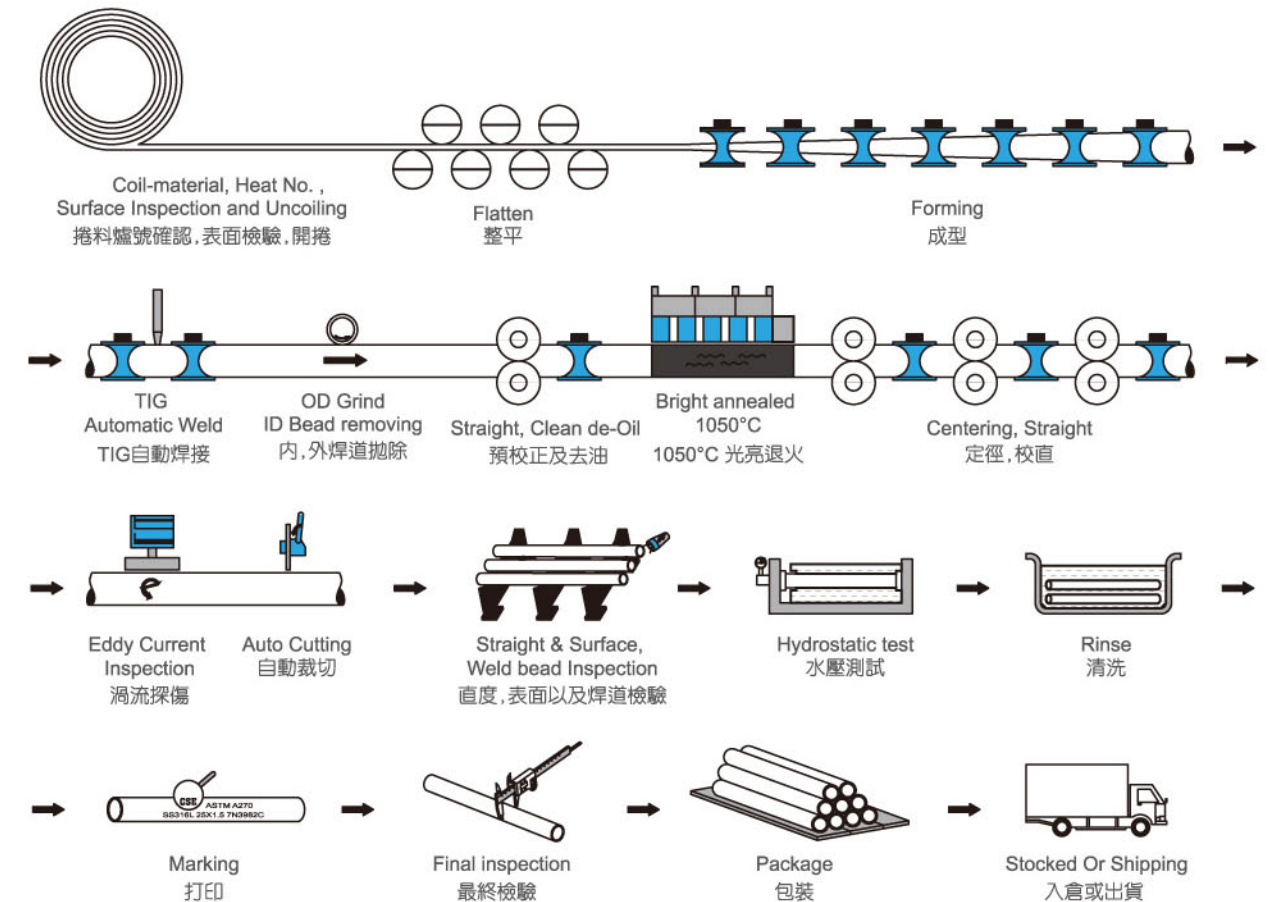


Base on CSE Group 20 years manufacture technology on Tubular fitting, Polished Tube, Electric polished Tube and many difference experiences of range on Sanitary, Pharmaceutical and Biology process line, we devoted into Welded Tubes production for making out the precision quality production meets various industry demands.

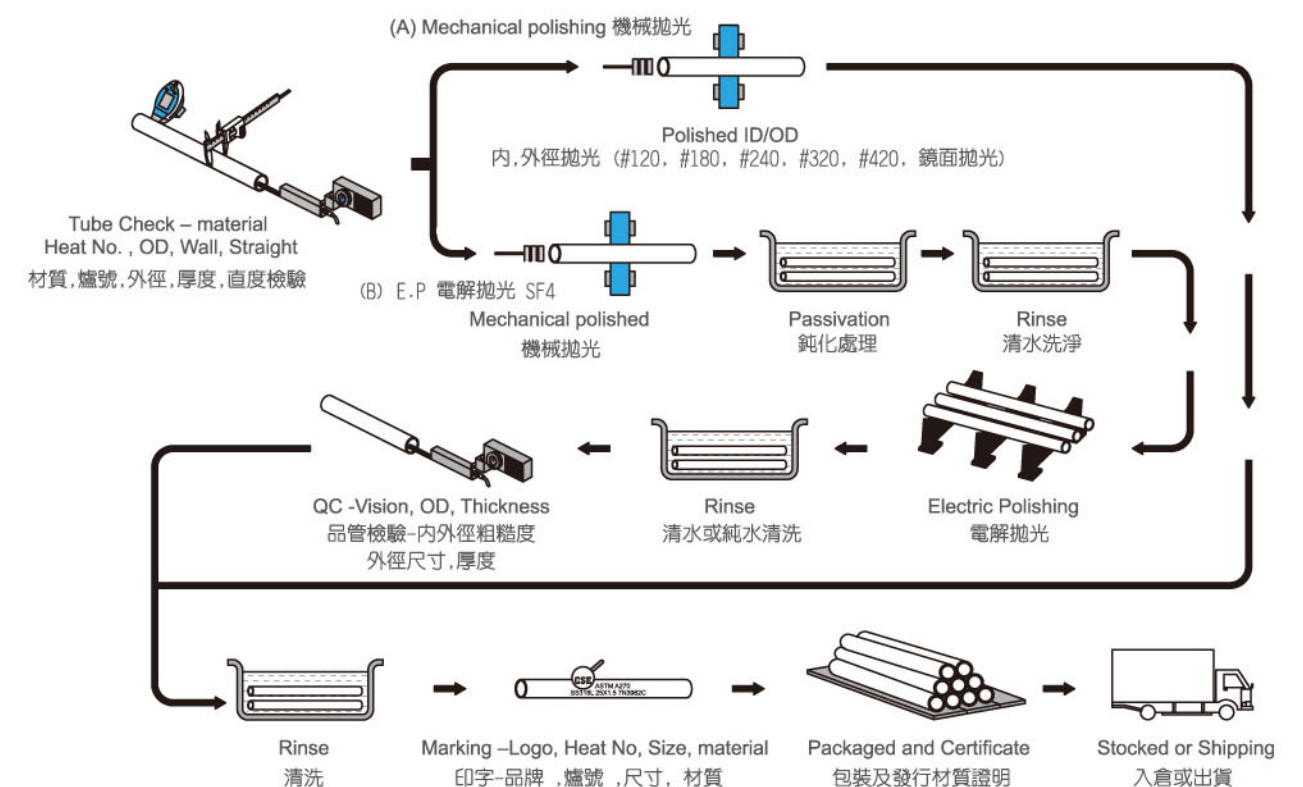


秉持著近20年之管件生產、拋光管道與各項食品、生技制藥工程施工之用管經驗，CSE本著深知各種產業用管品質之要求，而投入生產出適合客戶需求的最佳管件。

Production Processing 生產流程



Surface Processing 管面處理



Quality Certificate

CSE 品質保證



When you Choose CSE Tube that means you choose the guarantee quality product too.

當您選擇了CSE管件，也就代表選擇了有絕對品質保證的產品。



Because CSE:

- Not only- stable control the production process on the tube line
- Not only -strict inspection the tube in laboratory by chemical composition, weld physical, tensile strength, Flat explore, etc.
- Not only- detail inspection by OD, ID High TECH surface equipment, vision, Monitoring...



因為CSE具備了以下特點：

- 穩定的製管控制流程。
- 嚴謹的品質檢測，包含管件化學成分分析，物性焊接檢驗，抗拉伸測試，平整度測試。
- 精密的尺寸檢驗，我們以高科技表面檢測儀器精密監控內外徑之品質。



Also CSE we make the best GUARANTEE BY :

CSE Group- Elbow Bending, Tee -Pull up, Weld, Tube mechanical, And Electric polished and install in Project actual test line...

此外，我們CSE擁有最佳的品質保證，因為我們所製造的管子廣泛的使用於CSE集團，並通過其中各式彎頭成型檢驗，三通拉伸、焊接檢驗。管件拋光以及電拋，工程實際檢測等。



Certificate Profile

品質認證

CSE own the international advanced production line and testing equipment, we focus on the quality control and devoted our professional engineers, skilled workforce into the each requirement from customers. CSE always put the demand of customer in our first consideration and keep on pursuing the promotion and innovation of the product.

Therefore we enjoy in growing up with our customer to create the win-win situation.

CSE certified by 3A and TUV ISO 9001, would be your best assurance of quality and service~

CSE在生產中專注投入的專業工程師以及熟練的生產團隊，時時以客戶需求為優先，並且追求不斷的提升與創新，樂於與客戶同步成長，共創雙贏。

CSE將是您最佳的品質與服務保證因為我們擁有嚴謹的品質把關並通過3A以及ISO 9001認證



CSE Sanitary /Hygienic Weld tubes range

CSE 衛生焊接管簡介

Using on Food, Milk, Pharmaceutical, Semi-conductor industry
廣泛使用於食品業、酪農業，生技製藥業以及半導體工業等產業

SPECIFICATION: ASTM A269/A270/270-BPE

- **TEST STANDARD** 測試標準：
 - Inter-granular corrosion test (潔淨度測試)(EN ISO 3651-2)
 - Eddy current test (渦流測試)(SEP 1914 - EN 13860)
 - Appearance and Size(外觀尺寸檢驗) (EN 1127)
 - Leakage test(漏水測試)(SEP 1925)
- **MATERIAL RANGE** 材質種類：SS304,304L, 316L, 316L-BPE
- **SURFACE** 表面處理：
 - OD**：Bright /Pickled Or OD 180,220,320,420 Grits to Mirror polished.
外徑：光亮退火/酸洗，或者外拋#180,220,320,420，到鏡面拋光。
 - ID**：Matt- Ra<=0.8um, Ra<=0.5um ,Ra<= 0.2um.Or. Mirror polished.
內徑：機械拋光Ra<=0.8um, Ra<=0.5um ,Ra<= 0.2um.或鏡面拋光。
 - Dimension**：OD-1/2"-6"
口徑範圍：外徑1/2"-6"



SIZE STANDARDS

BPE STANDARD				SMS STANDARD				IDF STANDARD				3A SANITARY STANDARD				DIN 11850 STANDARD				
SIZE	O.D	T	W(Kg/M)	SIZE	O.D	T	W(Kg/M)	SIZE	O.D	T	W(Kg/M)	SIZE	O.D	T	W(Kg/M)	SIZE	O.D	T	W(Kg/M)	
1/2"	12.7	1.65														20	22	1.5	0.51	
1.0"	25.4	1.65	0.981	25	25	1.25	1.5	0.73	1.0"	25.4	1.2	0.71	1.0"	25.4	1.65	0.981	25	28	1	
																		1.5	0.66	
				32	32	1.25	1.5	0.95	1.25"	31.8	1.2	0.92					32	34	1	
																		1.5	0.82	
1.5"	38.1	1.65	1.5	38	38	1.25	1.5	1.14	1.5"	38.1	1.2	1.37	1.5"	38.1	1.65	1.5	40	40	1	
																		1.5	0.97	
2.0"	50.8	1.65	2.03	51	51	1.25	1.5	1.54	2.0"	50.8	1.5	1.85	2.0"	50.8	1.65	2.03	50	52	1	
																		1.5	1.26	
2.5"	63.5	1.65	2.55	63.5	63.5	1.5	1.65	2.3	2.5"	63.5	2	3.07	2.5"	63.5	1.65	2.55	65	70	2	3.43
3.0"	76.2	1.65	3.08	76	76.1	1.6	1.65	2.95	3.0"	76.3	2	3.69	3.0"	76.2	1.65	3.08	80	85	2	4.16
4.0"	101.6	2.11	5.256	104	104	2	2	5.05	4.0"	101.6	2	4.97	4.0"	101.6	1.65	5.256	100	104	2	5.03
															2.11					

TOLERANCES 公差

- OD: Up to and including 101.6 mm diameter: ±0.5% or ±0.1 mm whichever is greater.
- THICKNESS: The tolerance on thickness shall be ±10%
- LENGTH: For lengths up to and including 6 m: +3, -0 mm
- 外徑101.6 mm (含) 以下，公差±0.5% or ±0.1 mm
- 厚度公差為 ±10%
- 管長 6 m以下 長度公差為+3, -0 mm

CSE Structural tube, Hot commute machine pipe, Feeding water and Process tube

CSE 裝潢管，熱交換器管，輸水管與工業配管

- **MATERIAL**: 304 304L 316 316L
- **PURPOSES**: Heater, Hot commute machine, condenser, Feeding water tube
- **CHARACTERISTIC**: Seam removal capability, solution annealing condition, pickling
- **CAPABILITY SPECIALTY**:
 - Inside pipe smooth, feeding water resistance low.
 - Can support erosion of high water velocity, after solution treatment, Seam Removal compared as machine capability of matrix according on basic, also with Good deep machining capability & Antisepticise capability
- 材質：304 304L 316 316L
- 用途：加熱器、熱交換器、冷凝器、輸水管
- 工作特點：內焊道整平處理，熱固溶處理，酸洗
- 性能特點：
 - 管內壁光滑，輸水阻力低，能承受高流速沖蝕，固溶處理後，焊道與母體的機械性能基本一致，並具備優良深加工性能以及抗菌性能。



Standard 規範標準

ASTM A554 / JIS / G3446 / A312-A 機械構造用不銹鋼管

OD (inch) 外徑	Thickness (mm) 厚度										
		0.6	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.0
3/8"											
1/2"											
5/8"											
3/4"											
7/8"											
1"											
1-1/8"											
1-1/4"											
1-1/2"											
2"											
2-1/2"											
2"											
3"											
3-1/2"											
4"											
4-1/2"											

ASTM A312 A358 A778 ANSI B36.19 工業配管用不銹鋼管

Nominal diameter 名稱	Outside diameter (mm) 外徑	Nominal wall thickness							
		SCH-5S				SCH-10S			
		Wall thickness (mm) 厚度	Weight (Kg/m) 重量		Grade 鋼種	Wall thickness (mm) 厚度	Weight (Kg/m) 重量		Grade 鋼種
N.B	NPS		TP304	TP304L	TP316 TP316L		TP304	TP304L	TP316 TP316L
8	1/4"	13.72				1.65	0.50		0.50
10	3/8"	17.15				1.65	0.64		0.64
15	1/2"	21.34	1.65	0.81	0.81	2.11	1.01		1.02
20	3/4"	26.67	1.65	1.03	1.03	2.11	1.29		1.30
25	1"	33.40	1.65	1.31	1.31	2.77	2.11		2.13
32	1-1/4"	42.16	1.65	1.67	1.68	2.77	2.72		2.74
40	1-1/2"	48.26	1.65	1.92	1.93	2.77	3.14		3.16
50	2	60.33	1.65	2.41	2.43	2.77	3.97		4.00
65	2-1/2"	73.03	2.11	3.73	3.75	3.05	5.2		5.35
80	3"	88.90	2.11	4.56	4.59	3.05	6.52		6.56
90	3-1/2"	101.60	2.11	5.23	5.26	3.05	7.49		7.54
100	4"	114.30	2.11	5.90	5.93	3.05	8.45		8.51
125	5"	141.30	2.77	9.56	9.62	3.40	11.7		11.8
150	6"	168.28	2.77	11.4	11.5	3.40	14.0		14.1

TECHNIQUE PARAMETER

技術參數表

Table of The Chemical Composition of Stainless Steel Pipes & Tubes 常用不銹鋼化學成份表

Grade 規格		Chemical Composition (%) 化學成份 (%)							
		C	Si	Mn	P	S	Ni	Cr	Mo
ASTM	TP304	≤0.08	≤0.75	≤2.00	≤0.040	≤0.030	8.00~11.00	18.00~20.00	
	TP304L	≤0.035	≤0.75	≤2.00	≤0.040	≤0.030	8.00~13.00	18.00~20.00	
	TP316	≤0.08	≤0.75	≤2.00	≤0.040	≤0.030	11.00~14.00	16.00~18.00	2.00~3.00
	TP316L	≤0.035	≤0.75	≤2.00	≤0.040	≤0.030	10.00~15.00	16.00~18.00	2.00~3.00
JIS	SUS304	≤0.08	≤1.00	≤2.00	≤0.040	≤0.030	8.00~11.00	18.00~20.00	
	SUS304L	≤0.03	≤1.00	≤2.00	≤0.040	≤0.030	9.00~13.00	18.00~20.00	
	SUS316	≤0.08	≤1.00	≤2.00	≤0.040	≤0.030	10.00~14.00	16.00~18.00	2.00~3.00
	SUS316L	≤0.03	≤1.00	≤2.00	≤0.040	≤0.030	12.00~16.00	16.00~18.00	2.00~3.00
GB	0Cr19Ni9	≤0.08	≤1.00	≤2.00	≤0.035	≤0.030	8.00~10.50	18.00~20.00	
	00Cr19Ni11	≤0.03	≤1.00	≤2.00	≤0.035	≤0.030	9.00~13.00	18.00~20.00	
	0Cr17Ni12Mo2	≤0.08	≤1.00	≤2.00	≤0.035	≤0.030	10.00~14.00	16.00~18.00	2.00~3.00
	00Cr17Ni14Mo2	≤0.03	≤1.00	≤2.00	≤0.035	≤0.030	12.00~15.00	16.00~18.00	2.00~3.00

Stainless Steel Mechanical Properties 不銹鋼的機械性質

Grade 規格		Chemical Mechanical properties 機械性質				Characteristics 特性	
		抗拉強度 Tensile Strength	屈服強度 Yield Strength	延伸率 Elongation	硬度 Hardness		
		Mpa	Mpa	%	(HRB) HV		
ASTM	SUS316 TP316	520	205	≥35	≤90	316L	316+inter-granular corrosion resistance Heat resistance up to 650°C
	SUS316L TP316L	480	175	≥35	≤90		316+耐晶界腐蝕性高溫至650°C
JIS	SUS304 TP304	520	205	≥35	≤90	316	304+inter-granular corrosion resistance
	SUS304L TP304L	480	175	≥35	≤90		316+耐晶界腐蝕性
GB	0Cr19Ni9	≥520	≥210	≥35	(≤200)	304	Resistant to highly oxidizing acids such as nitric acid, general corrosion-resistant and heat resisteant
	00Cr19Ni11	≥480	≥180	≥35	(≤200)		抗一般酸及耐熱
	0Cr17Ni12Mo2	≥520	≥210	≥35	(≤200)	304L	Resistant to various organic acids such as diluted sulfuric acid, sulfurous acid and acetic acid, anti-pitting corrosion.
	00Cr17Ni14Mo2	≥480	≥180	≥35	(≤200)		耐腐蝕性強及耐高溫

TECHNIQUE PARAMETER

技術參數表

Approximate contrast form of stainless steel number 各國不銹鋼號近似對照表

Chian 中國 GB	Japan 日本 JIS	美國 USA		德國 Germany	
		AISI / ASTM	UNS 代號	DIN17006	DIN17007
0Cr18Ni9 (0Cr19Ni9)	SUS 304	304	S30400	X5CrNi18-10	1.4301
00Cr19Ni10 (00Cr18Ni10)	SUS 304L	304L	S30403	X2CrNi19-11	1.4306
0Cr25Ni20	SUS310S	310S	S31008	X12CrNi25-21	1.4845
0Cr17Ni12Mo2	SUS 316	316	S31600	X5CrNiMo17-12-2 X5CrNiMo17-12-3	1.4401 1.4436
00Cr17Ni14Mo2	SUS 316L	316L	S31603	X2CrNiMo18-14-3	1.4435
0Cr19Ni13Mo3	SUS 317	317	S31700	X5CrNiMo17-13	1.4449
00Cr19Ni13Mo3 00Cr17Ni14Mo3	SUS 317L	317L	S31703	X2CrNiMo18-16-4	1.4438
(1Cr18Ni9Ti)				X12CrNiTi18-9	1.4878
0Cr18Ni10Ti	SUS321	321	S32100	X6CrNiTi18-10	1.4541
0Cr18Ni11Nb	SUS 347	347	S34700	X6CrNiNb18-10	1.4550

Stainless Steel Solution Annealing Condition 不銹鋼的固溶化熱處理

GB		ASTM		JIS	
Type 鋼種	Solution Treating 固溶化處理 (°C)	Type 鋼種	Solution Treating 固溶化處理 (°C)	Type 鋼種	Solution Treating 固溶化處理 (°C)
0Cr19Ni9	1010~1150 Water Quenching 水急冷	TP304	1040~1150 Water Quenching 水急冷	SUS304	1010~1150 Water Quenching 水急冷
00Cr19Ni11		TP304L		SUS304L	
0Cr17Ni12Mo2		TP316		SUS316	
00Cr17Ni14Mo2		TP316L		SUS316L	

Calculating Formula for Weight 不銹鋼管重量計算公式表

Type 鋼種	Density 密度 g/cm³	Calculation method 計算方式
0Cr19Ni9 SUS304 TP304	7.93	W=0.02491 * t (D-t)
00Cr19Ni11 SUS304L TP304L		
0Cr17Ni12Mo2 SUS316 TP316		
00Cr17Ni14Mo2 SUS316L TP316L	7.98	W=0.02507 * t (D-t)

W: Weight (kg/m) 鋼管重量 D: Outside Diameter (mm) 鋼管外徑 t: Wall Thickness (mm) 鋼管厚度

TAIWAN



THAILAND



CHINA



CSE GROUP

<http://www.csee.com.tw>

Head office TAIWAN

強 淞 企 業 股 份 有 限 公 司

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