

# Parker Hannifin Instrument Tubing

Parker now offers quality-assured seamless stainless steel tubing



## The ABILITY to provide the total instrumentation tubing packages!

When you want to reduce the risk of leakage in your hydraulic and instrumentation system, consider Parker seamless stainless steel tubing.

Every step of the tube production is controlled to ensure consistent quality. Parker tubing are characterized by the ovality, concentricity and hardness limits required for superior performance in hydraulic and instrumentation system applications, Plus Parker tubing offers the high surface smoothness and close dimensional tolerances needed to ensure there are no leakages when connected with Parker fittings.

Let's engineer your cost savings with Parker seamless stainless steel tubing.



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## Product Features:

## Product Benefits:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>•A complete package of tube fittings and tubing via a single order</li> </ul> | <ul style="list-style-type: none"> <li>•The installer ONLY needs to develop ONE source for products</li> <li>•Reduce your vendors</li> </ul>  |
| <ul style="list-style-type: none"> <li>•Weldability</li> </ul>   | <ul style="list-style-type: none"> <li>•Controlled and consistent quality of steel grades provide easy welding</li> </ul>                     |
| <ul style="list-style-type: none"> <li>•Plugged ends</li> </ul>  | <ul style="list-style-type: none"> <li>•Protection of tube ends and ID from environments contamination</li> </ul>                             |
| <ul style="list-style-type: none"> <li>•Superior OD Finish and Close tolerances</li> </ul>                           | <ul style="list-style-type: none"> <li>•Ensure a high integrity system with Parker tubing and fittings</li> </ul>                             |
| <ul style="list-style-type: none"> <li>•Strictly controlled ovality, concentricity and hardness</li> </ul>           | <ul style="list-style-type: none"> <li>•Superior performance in a wide variety of system applications, temperatures and pressures.</li> </ul> |
| <ul style="list-style-type: none"> <li>•High cleanness of Tubing Inside</li> </ul>                                   | <ul style="list-style-type: none"> <li>•Suitable for clean environment application</li> </ul>   |
| <ul style="list-style-type: none"> <li>•Parker branded for quality assure</li> </ul>                                 | <ul style="list-style-type: none"> <li>•Easy to identify brand and tubing specifications along the full length of the tubing</li> </ul>       |



ENGINEERING YOUR SUCCESS.

# Ordering Information and Dimension

Tube O.D. inch	Nominal Wall Thickness inch	Basic Ordering Number		Weight kg/m
		Bright Anneal Tubing	Standard Instrumentation Tubing	
1/8"	0.028"	N/A	TUBE 1/8X.028-316L-CD	0.04
1/4"	0.035"	TUBE 1/4X.035-316L-CR	TUBE 1/4X.035-316L-CD	0.12
	0.049"	TUBE 1/4X.049-316L-CR	TUBE 1/4X.049-316L-CD	0.16
3/8"	0.035"	TUBE 3/8X.035-316L-CR	TUBE 3/8X.035-316L-CD	0.19
	0.049"	TUBE 3/8X.049-316L-CR	TUBE 3/8X.049-316L-CD	0.26
	0.065"	TUBE 3/8X.065-316L-CR	TUBE 3/8X.065-316L-CD	0.33
1/2"	0.035"	TUBE 1/2X.035-316L-CR	TUBE 1/2X.035-316L-CD	0.26
	0.049"	TUBE 1/2X.049-316L-CR	TUBE 1/2X.049-316L-CD	0.36
	0.065"	TUBE 1/2X.065-316L-CR	TUBE 1/2X.065-316L-CD	0.46
3/4"	0.049"	TUBE 3/4X.049-316L-CR	TUBE 3/4X.049-316L-CD	0.55
	0.065"	TUBE 3/4X.065-316L-CR	TUBE 3/4X.065-316L-CD	0.72
	0.083"	TUBE 3/4X.083-316L-CR	TUBE 3/4X.083-316L-CD	0.90
	0.095"	TUBE 3/4X.095-316L-CR	TUBE 3/4X.095-316L-CD	1.01
	0.105"	TUBE 3/4X.105-316L-CR	TUBE 3/4X.105-316L-CD	1.10
1"	0.065"	TUBE 1X.065-316L-CR	TUBE 1X.065-316L-CD	0.98
	0.083"	TUBE 1X.083-316L-CR	TUBE 1X.083-316L-CD	1.23

## Term Definition

**CR:** Cold Rolling  
**CD:** Cold Drawing  
**SMT:** Seamless Tubing  
**SMT Nominal Length:** 6 meters / EA

## Material Standards

**Grade:** 316L  
**UNS:** S31603  
**ASTM:** A213/A269  
**ASME:** SA213

## Chemical Composition

Element	Composition, wt. %
Chromium	16.0-18.0
Nickel	10.0-15.0
Molybdenum	2.00-3.00
Manganese	2.00 max
Silicon	0.75 max
Carbon	0.035 max
Sulfur	0.03 max
Phosphorus	0.04 max

## More Ordering Number

316L, Molybdenum >2.5% Material  
 Example: TUBE 1/4X.035-SSCDM02.5  
 Example: TUBE 12MMX1.5-SSCRM02.5

316H Material  
 Example: TUBE 1/4X.035-316H-CD  
 Example: TUBE 14MMX2.0-316H-CR

321 Material  
 Example: TUBE 14MMX2.0-321-CD  
 Example: TUBE 1/2X.049-321-CR

317L  
 Example: TUBE 3/4X.065-317L-CD  
 Example: TUBE 16MMX1.5-317L-CR

UNS S31803 Duplex Material (ASTM A789)  
 Example: TUBE 1/4X.035-S31803-CD  
 Example: TUBE 10MMX1.5-S31803-CD

UNS S32750 Super Duplex Material (ASTM A789)  
 Example: TUBE 12MMX1.5-S32750-CD  
 Example: TUBE 1/2X.049-S32750-CD

Tube O.D. mm	Nominal Wall Thickness mm	Basic Ordering Number		Weight kg/m
		Bright Anneal Tubing	Standard Instrumentation Tubing	
3	0.71	N/A	TUBE 3mmX0.71-316L-CD	0.04
6	1.00	TUBE 6mmX1.0-316L-CR	TUBE 6mmX1.0-316L-CD	0.13
	1.50	TUBE 6mmX1.5-316L-CR	TUBE 6mmX1.5-316L-CD	0.17
8	1.00	TUBE 8mmX1.0-316L-CR	TUBE 8mmX1.0-316L-CD	0.18
	1.50	TUBE 8mmX1.5-316L-CR	TUBE 8mmX1.5-316L-CD	0.24
10	1.00	TUBE 10mmX1.0-316L-CR	TUBE 10mmX1.0-316L-CD	0.23
	1.50	TUBE 10mmX1.5-316L-CR	TUBE 10mmX1.5-316L-CD	0.32
12	1.00	TUBE 12mmX1.0-316L-CR	TUBE 12mmX1.0-316L-CD	0.28
	1.50	TUBE 12mmX1.5-316L-CR	TUBE 12mmX1.5-316L-CD	0.40
	2.00	TUBE 12mmX2.0-316L-CR	TUBE 12mmX2.0-316L-CD	0.50
14	2.00	TUBE 14mmX2.0-316L-CR	TUBE 14mmX2.0-316L-CD	0.60
	2.50	TUBE 14mmX2.5-316L-CR	TUBE 14mmX2.5-316L-CD	0.72
16	1.50	TUBE 16mmX1.5-316L-CR	TUBE 16mmX1.5-316L-CD	0.54
	2.00	TUBE 16mmX2.0-316L-CR	TUBE 16mmX2.0-316L-CD	0.70
18	1.50	TUBE 18mmX1.5-316L-CR	TUBE 18mmX1.5-316L-CD	0.62
	2.00	TUBE 18mmX2.0-316L-CR	TUBE 18mmX2.0-316L-CD	0.80
20	2.00	TUBE 20mmX2.0-316L-CR	TUBE 20mmX2.0-316L-CD	0.90
22	2.00	TUBE 22mmX2.0-316L-CR	TUBE 22mmX2.0-316L-CD	1.00
25	2.00	TUBE 25mmX2.0-316L-CR	TUBE 25mmX2.0-316L-CD	1.15
	2.50	TUBE 25mmX2.5-316L-CR	TUBE 25mmX2.5-316L-CD	1.41

# Dimensional Tolerances

Parker Tolerances according to ASTM A213/A269/A632

Product	Size	Tolerances OD mm	Tolerances Length mm	Wall Thickness %
Bright Anneal Tubing	1/4"-1"	±0.08 mm	0-3.00mm	±10
	6 mm - 25 mm	±0.08 mm	0-3.00mm	±10
Standard Instrumentation Tubing	1/8"-1"	±0.10 mm	0-3.00mm	±10
	3 mm – 25 mm	±0.10 mm	0-3.00mm	±10

# Cleaning and Packaging

Product	ID Finish
Bright Anneal Tubing	20 uin (0.5 um) Ra Max
Standard Instrumentation Tubing	Standard Finish ( Reference ASTM A269 )

All of Tubing ends are protected with polyethylene caps.

**Bright Anneal Tubing** is packed in single polyethylene, heat-sealed bags.

**Standard Instrumentation Tubing** is bulk packed in polyethylene, heat-sealed bags.

# Instrument Tubing Selection Guide

Maximum Allowable Working Pressure Rating Table

316L STAINLESS STEEL (Seamless)																
Tube O.D. Size	Wall Thickness															
	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188
1/16	5600	6900	8200	9500	12100	16800										
1/8						8600	10900									
3/16						5500	7000	10300								
1/4						4000	5100	7500	10300							
5/16							4100	5900	8100							
3/8							3300	4800	6600							
1/2							2600	3700	5100	6700						
5/8								3000	4000	5200	6100					
3/4								2400	3300	4300	5000	5800				
7/8								2100	2800	3600	4200	4900				
1									2400	3200	3700	4200	4700			
1-1/4										2500	2900	3300	3700	4100	4900	
1-1/2											2400	2700	3000	3400	4000	4500
2												2000	2200	2500	2900	3200

Remark: Ratings in gray not suitable for gas service.



# Putting it all together

Parker has the fittings, tools, and training to help reduce the risk of system leaks.

## The Fittings

Four flareless fitting innovations allow users to make tubing connections faster, smarter, cleaner, and safer; with improvements ranging from lower bill of material costs and faster assembly to fewer potential leak paths, lower emissions, and longer life.



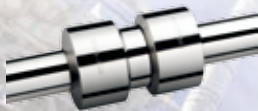
- **A-LOK®**: A twin-ferrule compression fitting that dominates low-pressure applications up to 6,000 psi (414 Bar), aided by the unique anti-corrosion performance of its Suparcase®-treated ferrule.



- **CPI™**: Delivers a single-ferrule version (Suparcase®-treated) of the industry standard twin-ferrule fitting, reducing potential leak paths.

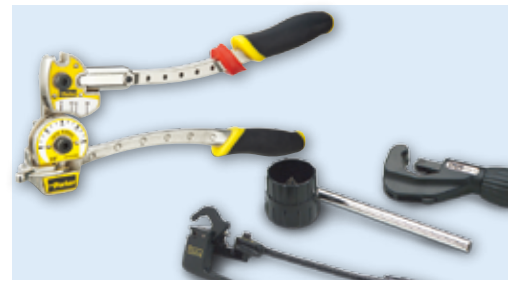


- **MPI™**: Brings the Suparcase®-treated ferrule compression assembly principle to medium pressures, providing a time- and cost-saving alternative to cone and thread fittings for applications up to 15,000 psi (1034 bar).



- **Phastite®**: A ferrule-less, push-fit connector that can be used in applications up to 20,000 psi (1380 bar). Its innovative design concept combines quick installation with a simple assembly process.

**See our Tube Fittings Cat4230/4233 for more information.**



## The Tubing Tools

Parker offers a comprehensive selection of hand-operated tools for fabricating small bore tubing runs. Available for a broad spectrum of instrumentation tubing sizes, the tools include seven heavy-duty tube benders, a cutter, a deburrer tool, a sawing vise with an integral hacksaw guide, and inspection gauges. The tools are key to reliable, leak-free assembly, easily providing accurate, tight radius bends of up to

180 degrees on soft copper, aluminum, brass, steel, and stainless steel tubing.

**See our Tube Fabricating Equipment Cat 4290 for more information.**



## The Training

Parker's Tube Fabrication Training Seminar can teach anybody the right way to measure, cut, and bend tubing. The class is designed to demonstrate the proper method of installing tube fittings in various system applications. Attendees will learn the right way to measure, cut, and bend tubing, as well as the correct tube fitting make-up and remake procedures. Plus all attendees will receive a free training guide.

**See our Tube Fitting installation manual Bul 4200-B4 for more information.**