



CONTROLS SUPPLY CHAIN  
VALVES ACTUATORS INSTRUMENTATIONS

## Pneumatic Fittings & Tubing



# General Information

## Thermoplastic Tubing/Fitting Reference Guide

Style	Tube O.D. (Inches)	Tube Wall Thickness (Inches)	Min. Bend Radius (Inches)	Max. Recom. Working Pressure (PSI)	Min. Burst Pressure (PSI)	Fittings
Poly-Flo® (Polyethylene) P PE	1/8 5/32 3/16 1/4 5/16 3/8 1/2	.020 .025 .030 .040 .062 .062 .062	1/2 5/8 3/4 1 1 1/8 1 1/4 2 1/2	125 125 125 100 150 90 65	500 500 500 400 600 350 250	Poly-Flo® Poly-Flo® Kwik-Connect Couplings (1/4 & 3/8 O.D.)
Impolene (Polyallomar) PP PY	1/8 3/16 1/4 3/8 1/2	.023 .034 .040 .062 .062	1/2 3/4 1 1 1/4 2 1/2	225 225 225 225 188	900 900 900 900 750	Poly-Flo® with 261UB Universal Nut & Sleeve Poly-Flo® Kwik-Connect Couplings (1/4 & 3/8 O.D.) with 261UB Universal Nut & Sleeve
Nylo-Seal® (Nylon 11) SN NT	1/8 5/32 3/16 1/4 5/16 3/8 1/2	.017 .022 .024 .033 .040 .048 .062	1/2 5/8 3/4 1 1 1/2 1 3/4 2 3/8	375 375 375 375 375 375 375	1500 1500 1500 1500 1500 1500 1500	Poly-Flo® with 261UB Universal Nut & Sleeve Poly-Flo® Kwik-Connect Couplings (1/4 & 3/8 O.D.) with 261UB Universal Nut & Sleeve OmegaFlo® Hi-Duty®* Hi-Seal®*
Nylo-Seal® (Nylon 11) NSR	1/8 3/16 1/4 3/8 1/2	.026 .039 .050 .075 .075	3/8 5/8 7/8 1 1/2 2 1/2	625 625 625 625 500	2500 2500 2500 2500 2000	Poly-Flo® (1/8 & 3/16 O.D. only) with 261UB Universal Nut & Sleeve OmegaFlo® Hi-Duty®* Hi-Seal®*
Nylo-Seal® (Nylon 11) NF	1/8 5/32 3/16 1/4 1/4 5/16 3/8 3/8 1/2	.023 .024 .024 .033 .040 .040 .048 .060 .062	3/8 1/2 5/8 7/8 1/2 1 1/4 1 1/2 3/4 2	250 250 250 250 300 250 250 300 250	1000 1000 1000 1000 1200 1000 1000 1200 1000	Poly-Flo® with 261UB Universal Nut & Sleeve Poly-Flo® Kwik-Connect Couplings (1/4 & 3/8 O.D.) OmegaFlo® Hi-Duty®* Hi-Seal®*
Polyvinyl Chloride PVC	1/4 3/8 1/2	.040 .062 .062	1/2 1 2	50 40 35	200 160 140	Poly-Flo® Poly-Flo® Kwik-Connect Couplings (1/4 & 3/8 O.D.)
Poly-Flo® Flame Retardant	1/4 3/8 1/2	.040 .062 .062	1 1 1/4 2 1/2	100 88 63	400 350 250	Poly-Flo® Poly-Flo® Kwik-Connect Couplings (1/4 & 3/8 O.D.)

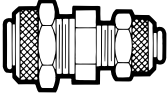
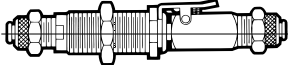
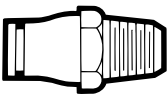
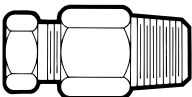
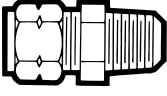
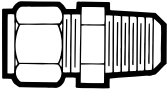
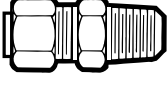
\*Consult factory for further information.

<sup>1</sup> Insert must be used with SN tubing when temperature exceeds 180° F and with NF tubing under all temperature conditions.

<sup>2</sup> Insert must be used with Poly-Flo® tubing under all temperature conditions.

# General Information

## Fitting Descriptions

Style	Working Pressure		Construction	Application	Compatible Tubing
	Maximum	Nominal			
Poly-Flo®	500 PSI	125 PSI	<ul style="list-style-type: none"> <li>• Three-piece: body, nut sleeve</li> <li>• Shapes: brass, forged SAE CA377 or equal</li> <li>• Straights: brass, SAE CA360 or equal</li> <li>• Sleeves: Celcon® or Brass</li> </ul>	<ul style="list-style-type: none"> <li>• Pneumatic instrumentation circuits</li> <li>• Fluid piping systems</li> </ul>	<ul style="list-style-type: none"> <li>• Polyethylene</li> <li>• Polypropylene</li> <li>• Nylon</li> <li>• Polyvinyl chloride</li> <li>• Polyallomar</li> <li>• Soft metal</li> <li>• Poly-Flo®</li> <li>• Nylo-Seal® (SN, NF)</li> <li>• Impolene</li> </ul>
					
Poly-Flo® Kwik-Connect	500 PSI	125 PSI	<ul style="list-style-type: none"> <li>• Body and nuts: Chrome-plated brass or Type 316 stainless steel</li> <li>• Sleeves: Celcon®</li> <li>• Springs: Stainless steel</li> <li>• O-Rings: Buna N on brass couplings, Viton® on stainless steel couplings</li> </ul>	<ul style="list-style-type: none"> <li>• Low pressure instrumentation lines requiring frequent connecting and disconnecting</li> <li>• Medical and dental equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Polyethylene</li> <li>• Polypropylene</li> <li>• Nylon</li> <li>• Polyvinyl chloride</li> <li>• Polyallomar</li> <li>• Soft copper</li> <li>• Poly-Flo®</li> <li>• Nylo-Seal®</li> <li>• Impolene</li> </ul>
					
OmegaFlo™	300 PSI	125 PSI	<ul style="list-style-type: none"> <li>• One-piece unit</li> <li>• Shapes: brass, forged SAE CA377 or equal</li> <li>• Sleeves: SAE CA360 or equal</li> <li>• Straights: brass SAE CA360 or equal</li> </ul>	<ul style="list-style-type: none"> <li>• Pneumatic instrumentation circuits</li> <li>• Fluid piping systems</li> </ul>	<ul style="list-style-type: none"> <li>• Polyethylene</li> <li>• Nylon 11</li> <li>• Soft copper</li> <li>• Poly-Flo®</li> <li>• Nylo-Seal®</li> <li>• Impolene</li> </ul>
					
Hi-Duty®	4,300 PSI <sup>A</sup>	800 PSI	<ul style="list-style-type: none"> <li>• Two piece: body and nut/sleeve</li> <li>• Shapes: brass, forged SAE CA360 or equal</li> <li>• Flareless compression design</li> </ul>	<ul style="list-style-type: none"> <li>• Instrumentation systems</li> <li>• Mobile farm and mobile construction equipment</li> <li>• Hydraulic and pneumatic controls</li> <li>• Process control systems</li> <li>• Laboratory equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Copper</li> <li>• Brass</li> <li>• Seamless steel</li> <li>• Thermoplastic</li> </ul>
					
Flex®	1,000 PSI <sup>A</sup>	200 PSI	<ul style="list-style-type: none"> <li>• Three piece: body, nut and elastomeric sleeve</li> <li>• Shapes: brass, forged SAE CA377 or equal</li> <li>• Straights: brass, SAE CA360 or equal</li> <li>• Flareless</li> <li>• Special compound sleeves available to 450°F</li> </ul>	<ul style="list-style-type: none"> <li>• High vibration and shock conditions</li> <li>• Diesel engine fuel lines</li> <li>• Lubrication systems</li> <li>• Gasoline, air and water lines</li> </ul>	<ul style="list-style-type: none"> <li>• Copper</li> <li>• Brass</li> <li>• Aluminum</li> <li>• Steel</li> <li>• Glass</li> <li>• Thermoplastic</li> </ul>
					
Compression	400 PSI <sup>A</sup>	250 PSI	<ul style="list-style-type: none"> <li>• Three-piece: body, nut and sleeve</li> <li>• Shapes: brass, forged SAE CA377 or equal</li> <li>• Straights: brass, SAE CA360 or equal</li> </ul>	<ul style="list-style-type: none"> <li>• Low pressure air, oil, water and gas piping</li> <li>• Meets SAE J512</li> </ul>	<ul style="list-style-type: none"> <li>• Copper</li> <li>• Brass</li> <li>• Aluminum</li> <li>• Thermoplastic</li> </ul>
					
CompresaMatic™	4,500 PSI <sup>A</sup>	850 PSI	<ul style="list-style-type: none"> <li>• Two-piece: body and nut/sleeve</li> <li>• Shapes: brass, forged SAE CA377 or equal</li> <li>• Straights: brass, SAE CA360 or equal</li> <li>• Nuts and sleeves interchangeable with standard compression bodies</li> </ul>	<ul style="list-style-type: none"> <li>• Air, oil, water and gas piping</li> <li>• Meets SAE J512 Except for the nut and sleeve</li> </ul>	<ul style="list-style-type: none"> <li>• Copper</li> <li>• Brass</li> <li>• Aluminum</li> <li>• Thermoplastic</li> <li>• Seamless steel</li> </ul>
					

<sup>A</sup>Maximum working pressure based on 1/8" O.D. dead soft copper tubing. Please consult Imperial Eastman for additional information.

# General Information

## Thread Size Chart

Use this chart to determine fitting thread sizes per tube O.D. size.

**For example:** Thread sizes for a Hi-Duty® 1/8" fitting, with Part No. 88LB02X02 are: .5/16-24 tube thread size x 1/8-27 pipe thread size, as below:

**PART NUMBER = 88LB02X02**

### TUBE SIZE (O.D.)

	"Dash" No.	- 02	- 03	- 04	- 05	- 06	- 07	- 08	- 10	- 12	- 14	- 16
FITTINGS	Size	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	7/8"	1"

### TUBE END THREADS

	5/16-24	3/8-24	7/16-24	1/2-20	9/16-20	11/16-16	7/8-18	1-18	1 1/4-18	
Hi-Duty®										
45° Flare					5/8-18	11/16-16	3/4-16	7/8-14	1 1/16-14	1 1/4-12
CompresaMatic®				1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	
Compression				1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	
Flex®	3/8-24	7/16-24	1/2-24	9/16-24	5/8-24		13/16-18	1-18	1 1/8-18	
Poly-Flo® and Kwik-Connect			3/8-24	7/16-24	1/2-24		11/16-20			

### PIPE END THREADS

	1/8-27	1/4-18	3/8-18	1/2-14	3/4-14	1-11 1/2
Pipe Fittings						

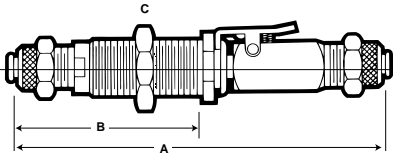
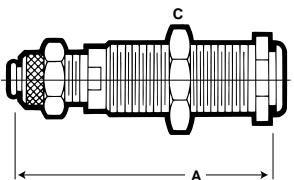
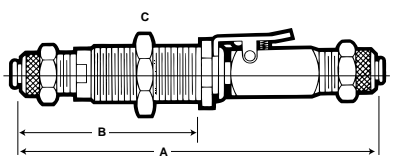
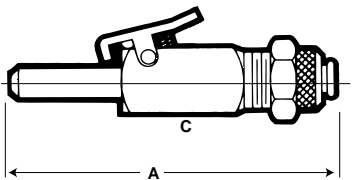
# General Information

## Assembly Instructions

Fitting	To Assemble	To Reconnect
Hi-Duty® Flareless Tube Fittings	<ol style="list-style-type: none"><li>1. Using a tube cutter, cut tube squarely and cleanly, removing all burrs.</li><li>2. Grasp fitting. Do not remove nut.</li><li>3. Insert tube in fitting through nut until tube seats firmly against tube shoulder in body.</li><li>4. Grip tube firmly to prevent turning and tighten nut until a slight “give” is felt. This “give” indicates the sleeve has been sheared from the nut.</li><li>5. Continue tightening for one and one-half additional turns for a positive, leakproof seal. It is not necessary to tighten the nut all the way down.</li></ol>	<ol style="list-style-type: none"><li>1. Reinsert tubing</li><li>2. Tighten nut one eighth of a turn more than previous make-up. NOTE: The Hi-Duty® fitting can be disconnected and reconnected repeatedly and will always reconnect tightly.</li></ol>
45° Flare Tube Fittings	<ol style="list-style-type: none"><li>1. Using a tube cutter, cut tubing squarely and cleanly, removing all burrs.</li><li>2. Slide nut onto tubing with the open threaded end of the nut facing toward the end to be flared.</li><li>3. Flare tubing end with a good quality flaring tool.</li><li>4. Position the flare against the nose of the fitting body and align the tube with the fitting.</li><li>5. Assemble nut to body, tightening finger tight.</li><li>6. Tighten nut with a wrench one-quarter to one-half turn for a leakproof connection.</li></ol>	<ol style="list-style-type: none"><li>1. Tighten to original make-up position, plus an additional one-sixth turn of the nut (one flat of the hex).</li></ol>
Compression Flareless Tube Fittings	<ol style="list-style-type: none"><li>1. Using a tube cutter, cut tube squarely and cleanly, removing all burrs.</li><li>2. Insert tubing into the fitting body until it rests against the shoulder.</li><li>3. Move sleeve into position and tighten the nut. NOTE: No flaring, soldering or other special preparation of the tubing is necessary before assembly.</li></ol>	<ol style="list-style-type: none"><li>1. Tighten to original make-up position, plus an additional one-sixth turn of the nut (one flat of the hex).</li></ol>
CompresaMatic™	<ol style="list-style-type: none"><li>1. Using a tube cutter, cut tube squarely and cleanly, removing all burrs.</li><li>2. Insert the tube into fitting. Be sure the tube “bottoms” on the fitting shoulder.</li><li>3. Tighten (hand-tight), and complete the seal with <b>one</b> wrench turn on all sizes.</li></ol>	<ol style="list-style-type: none"><li>1. Tighten to original make-up position, plus an additional one sixth turn of the nut (one flat of the hex).</li></ol>
Poly-Flo® Flareless Tube Fittings	<ol style="list-style-type: none"><li>1. Using a tube cutter, cut tubing squarely and cleanly, removing all burrs.</li><li>2. Push tubing into fitting and tighten the nut. NOTE: There is no need to disassemble the fitting before assembly. When used with Poly-Flo® or PVC tubing, fitting is assembled finger tight. No wrenches needed.</li></ol>	<ol style="list-style-type: none"><li>1. Tighten nut to original make-up position, tightening finger tight.</li></ol>
Poly-Flo® Kwik-Connect Couplers	<ol style="list-style-type: none"><li>1. Using a tube cutter, cut tubing squarely and cleanly, removing all burrs.</li><li>2. Push tubing into fitting and tighten the nut. NOTE: There is no need to disassemble the fitting before assembly. When used with Poly-Flo® or PVC tubing, assembly is finger tight.</li></ol>	<ol style="list-style-type: none"><li>1. Tighten nut to original make-up position, tightening finger tight.</li></ol>
OmegaFlo™ Push-to-Connect/ Push-to-Release Pneumatic Fittings	<ol style="list-style-type: none"><li>1. Using a tube cutter, cut tubing cleanly and squarely.</li><li>2. Firmly push the tubing into the fitting until it will enter no further. A properly assembled tube cannot be pulled out by hand.</li><li>3. To disconnect, simply push back on the brass collet and release tubing.</li></ol>	<ol style="list-style-type: none"><li>1. Firmly push tubing into the fitting until it will enter no further. A properly assembled tube cannot be pulled out by hand.</li></ol>

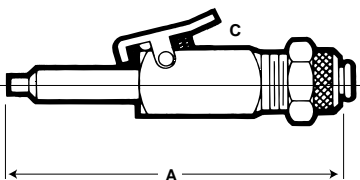
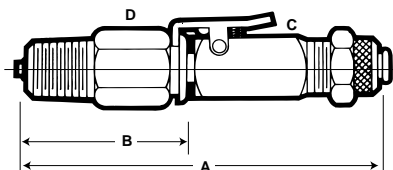
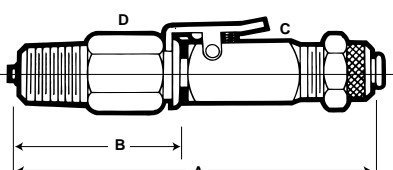
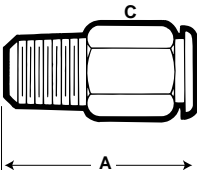
# Tube Fittings

Poly-Flo® Kwik-Connect Couplers Material: Brass Finish: Chrome-Plated

Style	Part No.	Tube O.D.	Pipe Thread	Bulkhead Thread	A	B	C	Wrench Pad/Hex D
<b>STYLE 294P</b> <b>Coupler</b> <b>Single End Shut-Off</b> 	294P04 294P06	1/4 3/8		1/2-24 11/16-24	2.899 3.461	1.718 1.921	0.625 0.812	
<b>STYLE 294PB</b> <b>Body</b> <b>Double End Shut-Off</b> 	294PB04 294PB06	1/4 3/8		1/2-24 11/16-24	1.790 1.965		0.625 0.812	
<b>STYLE 294PD</b> <b>Coupler</b> <b>Double End Shut-Off</b> 	294PD04 294PD06	1/4 3/8		1/2-24 11/16-24	3.180 3.458	1.790 1.965	0.625 0.812	
<b>STYLE 294PM</b> <b>Insert (Without Shut-Off. Used on double end shut-off models)</b> 	294PM04 294PM06	1/4 3/8		1/2-24 11/16-24	1.636 1.738		0.500 0.500	

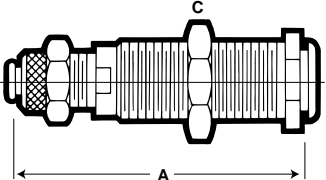
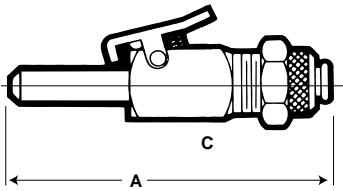
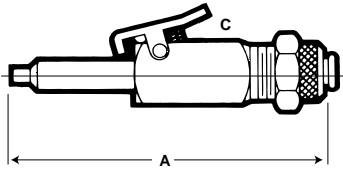
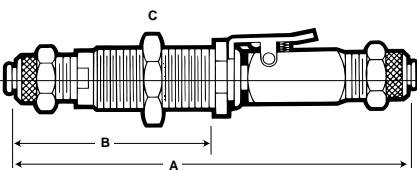
# Tube Fittings

Poly-Flo® Kwik-Connect Couplers Material: Brass Finish: Chrome-Plated

Style	Part No.	Tube O.D.	Pipe Thread	A	B	Wrench Pad/Hex C	Wrench Pad/Hex D
<b>STYLE 294PMD</b> Insert (With Shut-Off. Used on double end shut-off models) 	294PMD04 294PMD06	1/4 3/8		1.787 1.972		0.500 0.500	
<b>STYLE 298P</b> Coupler Single End Shut-Off 	298P04X02 298P04X04 298P06X04	1/4 1/4 3/8	1/8 1/4 1/4	2.261 2.261 2.323	1.260 1.260 1.400	0.500 0.500 0.500	0.500 0.562 0.625
<b>STYLE 298PD</b> Coupler Double End Shut-Off 	298PD04X02 298PD04X04 298PD06X04	1/4 1/4 3/8	1/8 1/4 1/4	2.802 2.824 2.962	1.260 1.260 1.400	0.500 0.500 0.500	0.500 0.562 0.625
<b>STYLE 298PT</b> Body with Shut-Off (Standard on both double and single shut-off models) 	298PT04X02 298PT04X04 298PT06X04	1/4 1/4 3/8	1/8 1/4 1/4	1.260 1.260 1.400		0.500 0.562 0.625	

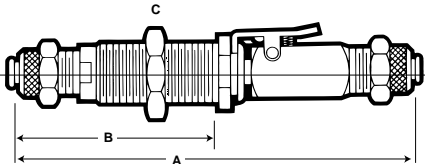
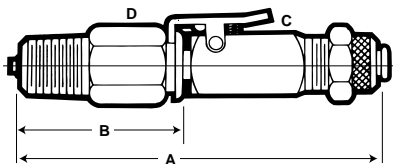
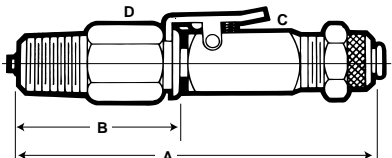
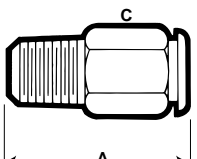
# Tube Fittings

Poly-Flo® Kwik-Connect Couplers Material: Stainless Steel

Style	Part No.	Tube O.D.	Pipe Thread	Bulkhead Thread	A	B	Wrench Pad/Hex C	Wrench Pad/Hex D
<b>STYLE 294PBSS</b> <b>Body</b> <b>Single End Shut-Off</b> 	294PBSS04 294PBSS06	1/4 3/8		1/2-24 1 1/16-24	1.790 1.965		0.625 0.812	
<b>STYLE 294PMSS</b> <b>Insert</b> <b>Single End Shut-Off</b> 	294PMSS04 294PMSS06	1/4 3/8			1.636 1.738		0.500 0.500	
<b>STYLE 294PMSSD</b> <b>Insert</b> <b>Double End Shut-Off</b> 	294PMSSD04 294PMSSD06	1/4 3/8			1.787 1.972		0.500 0.500	
<b>STYLE 294PSS</b> <b>Coupler</b> <b>Single End Shut-Off</b> 	294PSS04 294PSS06	1/4 3/8		1/2-24 1 1/16-24	2.899 3.461	1.718 1.921	0.625 0.812	

# Tube Fittings

Poly-Flo® Kwik-Connect Couplers Material: Stainless Steel

Style	Part No.	Tube O.D.	Pipe Thread	Bulkhead Thread	A	B	Wrench Pad/Hex C	Wrench Pad/Hex D
<b>STYLE 294PSSD</b> <b>Coupler</b> <b>Double End Shut-Off</b> 	294PSSD04	1/4		1/2-24	3.180	1.790	0.625	
	294PSSD06	3/8		1 1/16-24	3.458	1.965	0.812	
<b>STYLE 298PSS</b> <b>Coupler</b> <b>Single End Shut-Off</b> 	298PSS04X02	1/4	1/8		2.261	1.260	0.500	0.500
	298PSS04X04	1/4	1/4		2.261	1.260	0.500	0.562
	298PSS06X04	3/8	1/4		2.323	1.400	0.500	0.625
<b>STYLE 298PSSD</b> <b>Coupler</b> <b>Double End Shut-Off</b> 	298PSSD04X02	1/4	1/8		2.802	1.260	0.500	0.500
	298PSSD04X04	1/4	1/4		2.824	1.260	0.500	0.562
	298PSSD06X04	3/8	1/4		2.962	1.400	0.500	0.625
<b>STYLE 298PTSS</b> <b>Body with Shut-Off</b> <small>(Standard on both double and single shut-off models)</small> 	298PTSS04X02	1/4	1/8		1.260		0.500	
	298PTSS04X04	1/4	1/4		1.260		0.562	
	298PTSS06X04	3/8	1/4		1.400		0.625	

# General Information

## Metal Tubing/Fitting Reference Guide

Tubing	Tube Size O.D.	Tube Wall	Maximum Operating Pressure (PSI)		Fittings	
<b>COPPER DEAD SOFT SEAMLESS</b> ASTM B75 ANSI H23.3	1/8	.030	4300		Hi-Duty® 45° Flare Hi-Seal® Brass	
	3/16	.030	2850			
	1/4	.030	2100			
	5/16	.032	1800			
	3/8	.032	1500			
	1/2	.032	1150			
	5/8	.035	1000			
	3/4	.035	850			
	7/8	.035	650			
	1/8	.030	400			Compresamatic™ Compression Omega Flo Poly-Flo® with Universal Sleeve* Poly-Flo® Kwik-Connect Couplings* (1/4 & 3/8 O.D.) with 261UB Universal Nut & Sleeve
	3/16	.030	400			
	1/4	.030	300			
	5/16	.032	300			
	3/8	.032	500			
1/2	.032	200				
<b>COPPER DEAD SOFT SEAMLESS</b> ASTM B75 ANSI H23.3	5/8	.035	150			
	3/4	.035	150			
	Tubing	Tube Size O.D.	Tube Wall	Tubing Not Belled	Tubing Belled	Fittings
	<b>COPPER DEAD SOFT SEAMLESS</b> ASTM B75 ANSI H23.3	1/8	.030	1000	2000	Flex®
		3/16	.030	750	1500	
1/4		.030	500	1000		
5/16		.030	500	1000		
3/8		.032	350	700		
1/2		.032	200	500		
5/8		.035		400		
3/4		.035		350		
7/8		.035		300		
<b>COPPER PIPE RED BRASS</b> ASTM B43	1/8	.062	3000		Brass Pipe*	
	1/4	.082	3000			
	3/8	.090	3000			
	1/2	.107	2000		45° Flare	
	<b>STEEL COPPER BRAZED (BUNDY)</b> ASTM A254 DOUBLE LAP FLARE	1/8	.028	4600		
		3/16	.028	4000		
		1/4	.034	3600		
		5/16	.034	2750		
		3/8	.042	2500		
		1/2	.049	2250		
	<b>STEEL SEAMLESS</b> SAE J524 <b>WELDED</b> SAE J525	5/8	.049	2100		Hi-Seal® Steel*
		1/8	.028	6050		
3/16		.028	4180			
1/4		.035	3800			
5/16		.035	3340			
3/8		.049	3960			
1/2		.049	2900			
5/8		.049	2280			
3/4		.049	1880			
7/8		.065	2150			
1	.065	1860				
1 1/4	.083	1920				
1 1/2	.083	1580				
Tubing	Tube Size O.D.	Tube Wall	Type 316 Sleeves	Type 17-4 PH Sleeves	Fitting	
<b>STAINLESS STEEL ANNEALED SEAMLESS</b> TYPE 304 ASTM A213	1/8	.028	8180	8180	Hi-Seal® Stainless Steel*	
	3/16	.028	5650	5650		
	1/4	.035	5900	5900		
	3/8	.049	5500	5500		
	1/2	.049	4100	4100		
	5/8	.049	3300	3300		
	3/4	.049	2700	2700		
	1	.065		2510		
	1 1/4	.083		2580		
	1 1/2	.083		2130		

\* Consult factory for further information.