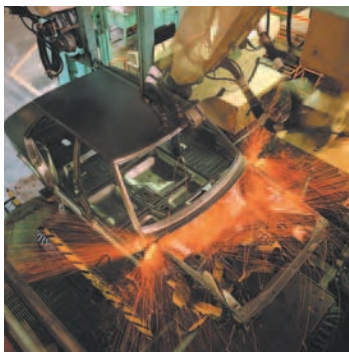


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Air Preparation Products

Filters, Regulators, Lubricators,
& Airline Accessories

Catalog 0700P-E



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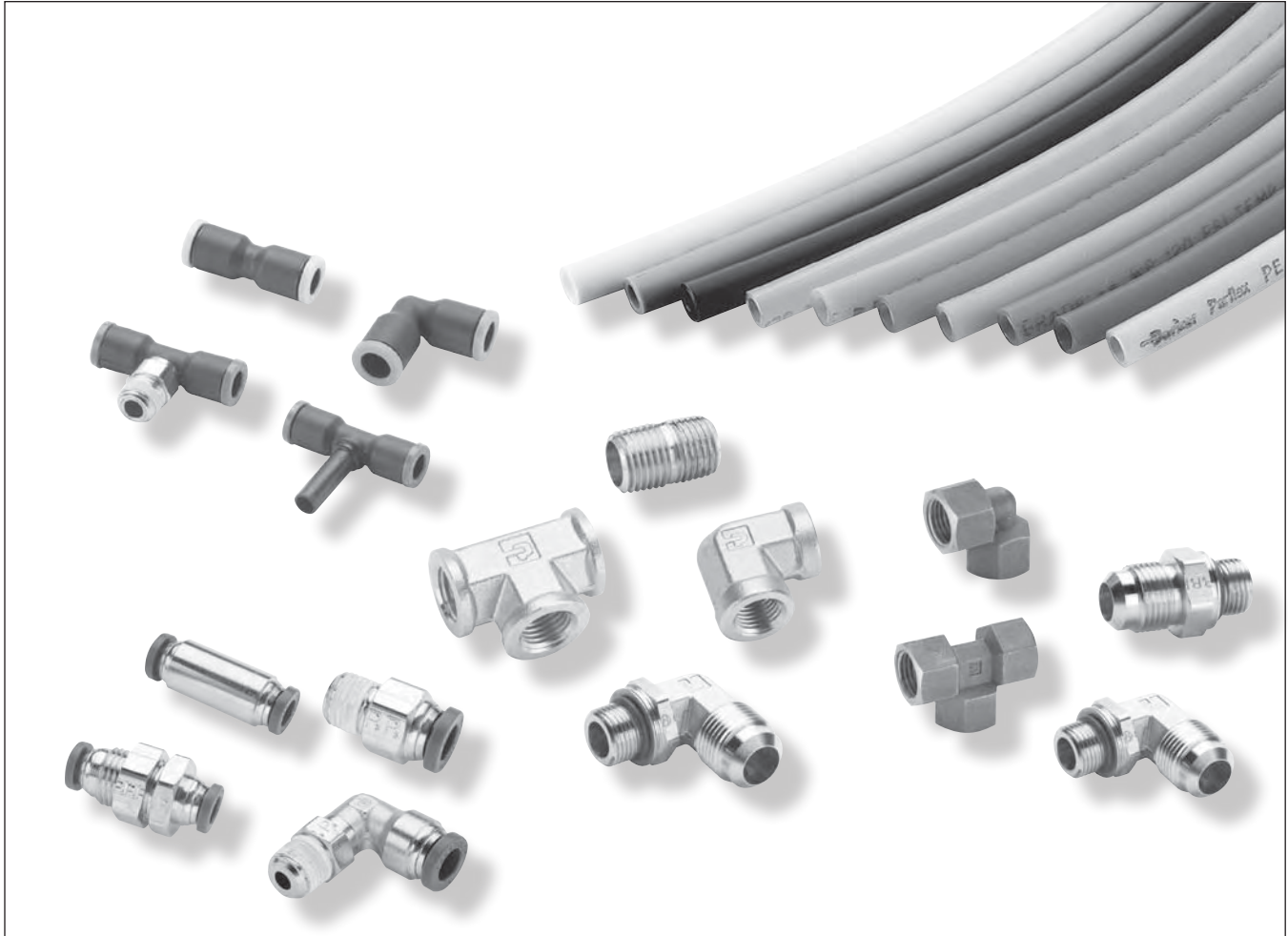
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<p>Introduction</p>	<p>A Introduction</p>
<p>Global Air Preparation System www.parker.com/globalfrl</p>	<p>B Global Air Preparation Systems</p>
<p>Filters, Regulators, Lubricators www.parker.com/pneu/frl</p>	<p>C Filters, Regulators, Lubricators</p>
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<p>Quick Couplings</p>	<p>L Quick Couplings</p>
<p>Hose & Fittings</p>	<p>M Hose and Fittings</p>
<p>Tubing & Fittings</p>	<p>N Tubing and Fittings</p>
<p>Safety Guide, Offer of Sale</p>	<p>P Model to Page Number Index</p>

Section N



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Nylon Tubing.....	N4-N5
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Push-to-Connect, Prestolok Composite Fittings	N8-N25
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Pipe Fittings
& Adapters

Prestolok
Metal

Prestolok
Composite

Tubing

N

Advantages

Chemical resistant, flexible, low cost, eight colors, five tube sizes and choice of reel lengths.

Construction

Flexible polyethylene thermoplastic tubing is extruded from high molecular weight resin for increased dimensional stability, uniformity and long-term strength. Its resistance to environmental stress cracking greatly exceeds that of ordinary polyethylene tubing as measured by ASTM D-1693, (10% IGEPAL).

Applications & Approvals

Polyethylene tubing is available in black as well as seven coding colors as recommended by the Instrument Society of America. Black (EB) tubing contains an ultra-violet inhibitor which is recommended for use in sunlit areas. Ingredients of natural and color tubing (except black) listed below meet FDA requirements for food contact applications. All tubing conforms to ASTM D-1248, Type I, Class A, Category 4, Grade E5.

Temperature Range

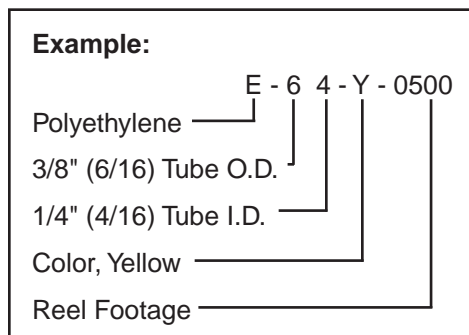
Suggested operating temperature range is -80°F to 150°F (-62°C to 66°C).

Fitting Recommendation

- Brass fittings

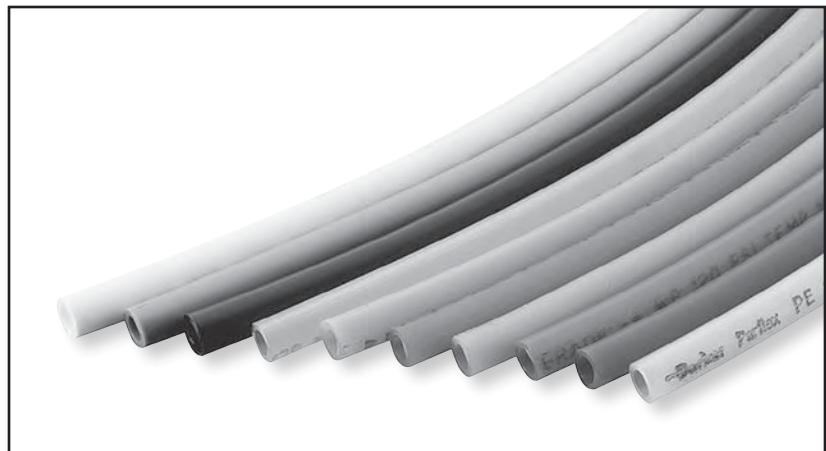
Nomenclature

Part numbers are constructed from symbols that identify the style and size of the fitting. Letters identify style and material. Numbers identify size in 1/16's of an inch.



E Instrument Grade Tubing

Part Number	Color	O.D.	I.D.	Wall	Reel Length Feet	Working Pressure psi at 73°F	Min. Burst psi at 73°F	Min. Bend Radius Inches	Weight Per 100 Feet
E-43-0100	Natural	1/4	.170	.040	100	120	625	1	1.1
E-43-0500	Natural	1/4	.170	.040	500	120	625	1	1.1
E-43-1000	Natural	1/4	.170	.040	1000	120	625	1	1.1
EB-43-0100	Black	1/4	.170	.040	100	120	625	1	1.1
EB-43-0500	Black	1/4	.170	.040	500	120	625	1	1.1
EB-43-1000	Black	1/4	.170	.040	1000	120	625	1	1.1
E-43-R-0100	Red	1/4	.170	.040	100	120	625	1	1.1
E-43-R-0500	Red	1/4	.170	.040	500	120	625	1	1.1
E-43-B-0100	Blue	1/4	.170	.040	100	120	625	1	1.1
E-43-B-0500	Blue	1/4	.170	.040	500	120	625	1	1.1
E-43-O-0500	Orange	1/4	.170	.040	500	120	625	1	1.1
E-43-Y-0500	Yellow	1/4	.170	.040	500	120	625	1	1.1
E-43-P-0500	Purple	1/4	.170	.040	500	120	625	1	1.1
E-43-G-0500	Green	1/4	.170	.040	500	120	625	1	1.1
E-53-0500	Natural	5/16	.187	.062	500	145	800	1-1/8	2.1
EB-53-0500	Black	5/16	.187	.062	500	145	800	1-1/8	2.1
E-64-0100	Natural	3/8	.250	.062	100	125	675	1-1/4	2.5
E-64-0500	Natural	3/8	.250	.062	500	125	675	1-1/4	2.5
EB-64-0100	Black	3/8	.250	.062	100	125	675	1-1/4	2.5
EB-64-0500	Black	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-R-0500	Red	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-B-0500	Blue	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-O-0500	Orange	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-Y-0500	Yellow	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-P-0500	Purple	3/8	.250	.062	500	125	675	1-1/4	2.5
E-64-G-0500	Green	3/8	.250	.062	500	125	675	1-1/4	2.5
E-86-0100	Natural	1/2	.375	.062	100	90	425	2-1/2	3.6
EB-86-0100	Black	1/2	.375	.062	100	90	425	2-1/2	3.6
E-108-0100	Natural	5/8	.500	.062	100	70	325	4	4.6
EB-108-0100	Black	5/8	.500	.062	Coil	70	325	4	4.6



Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

N

Features & Part Numbers



PEFR Flame Resistant Tubing

Part Number	Color	O.D.	I.D.	Wall	Reel Length Feet	Working Pressure psi at 73°F	Min. Burst psi at 73°F	Min. Bend Radius Inches	Weight Per 100 Feet
PEFR-2.5-0500	Black	5/32	.096	.030	500	225	900	1/2	.56
PEFR-4-0500	Black	1/4	.170	.040	500	160	650	3/4	1.24
PEFR-4-1000	Black	1/4	.170	.040	1000	160	650	3/4	1.24
PEFR-6-0500	Black	3/8	.250	.062	500	195	780	1-1/2	2.90
PEFR-8-0250	Black	1/2	.375	.062	250	135	540	1-3/4	4.05

Construction & Approvals

Flame resistant polyethylene is manufactured from a distinctively formulated compound which meets the UL94 V-2 flame classification. It also meets the flame spread, fuel contribution and smoke density requirements of the ASTM E84-81a tunnel test.

Applications

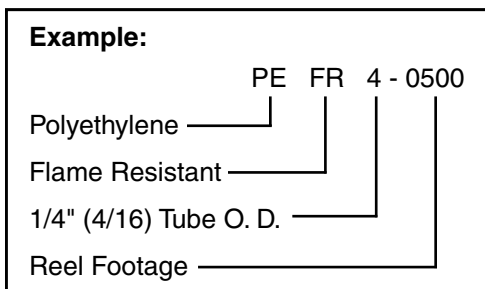
Parker series PEFR tubing is the preferred product for pneumatic control applications in the heating - ventilating - air conditioning - energy conservation industry. It is also suitable for use in petrochemical plants, petroleum refineries, pulp and paper mills, mines, steel mills and other industries where protection against intermittent flame and hot sparks is necessary.

Temperature Range

Suggested operating temperature range is -85°F to 150°F (-65°C to +66°C).

Nomenclature

Order by tubing part number and name.



Pipe Fittings & Adapters
Prestolok Metal
Prestolok Composite
Tubing
N



Advantages

Flexible nylon tubing is carefully made from high-grade, abrasion-resistant, heat- and light-stabilized nylon. Resistance to stress-cracking greatly exceeds that of ordinary nylon tubing. Extremely low level water absorption.

Chemical-resistant nylon tubing has the additional benefits of better flexibility, lighter weight and resistance to flexural fatigue.

Colors

Available in natural (NN) and black (NB). Black tubing is recommended for use outdoors and in sunlit areas.

Temperature Range

Operating temperatures, depending upon conditions, are -65°F to 200°F (-54°C to 93°C) continuous.

Fitting Recommendations

- Brass fittings

Nomenclature

Order by tubing part number and name.

Example:

N N - 2 - 016

Nylon _____

Color Natural _____

1/8" (2/16) Tube O. D. _____

Wall Thickness (in thousandths of an inch) _____

N Flexible Tubing

Nylon Part No.	Color	Nom. Tube O.D.	Nom. Tube I.D.	Average Wall Thick.	*Min. Burst Pressure at 73°F psi	Min. Bend Radius Inches	Std. Reel Length Feet
NN-2-016	Natural	1/8	.093	.016	1000	1/4	250
NB-2-016	Black	1/8	.093	.016	1000	1/4	250
NN-2-031	Natural	1/8	.064	.031	2000	1/4	250
NB-2-031	Black	1/8	.064	.031	2000	1/4	250
NN-2.5-025	Natural	5/32	.106	.025	1200	1/2	250
NB-2.5-025	Black	5/32	.106	.025	1200	1/2	250
NN-3-025	Natural	3/16	.138	.025	1000	5/8	250
NB-3-025	Black	3/16	.138	.025	1000	5/8	250
NN-3-046	Natural	3/16	.096	.046	2000	7/16	250
NB-3-046	Black	3/16	.096	.046	2000	7/16	250
NN-4-035	Natural	1/4	.180	.035	1000	7/8	250
NB-4-035	Black	1/4	.180	.035	1000	7/8	250
NN-4-040	Natural	1/4	.170	.040	1250	7/8	250
NB-4-040	Black	1/4	.170	.040	1250	7/8	250
NN-4-062	Natural	1/4	.127	.062	2000	1/2	250
NB-4-062	Black	1/4	.127	.062	2000	1/2	250
NN-5-040	Natural	5/16	.233	.040	1250	1-1/8	250
NB-5-040	Black	5/16	.233	.049	1250	1-1/8	250
NN-6-050	Natural	3/8	.275	.050	1250	1-1/8	250
NB-6-050	Black	3/8	.275	.050	1250	1-1/8	250
NN-6-093	Natural	3/8	.190	.093	2000	3/4	250
NB-6-093	Black	3/8	.190	.093	2000	3/4	250
NN-8-062	Natural	1/2	.375	.062	1000	1-1/4	250
NB-8-062	Black	1/2	.375	.062	1000	1-1/4	250
NN-8-124	Natural	1/2	.253	.124	2000	1	250
NB-8-124	Black	1/2	.253	.124	2000	1	250

*Suggested working pressure is 1/4 of burst pressure.

Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

N



NR Semi-rigid High Strength Tubing

Nylon Part No.	Color	Nom. Tube O.D.	Nom. Tube I.D.	Average Wall Thick.	*Min. Burst Pressure at 73°F psi	Min. Bend Radius Inches	Std. Reel Length Feet
NNR-2-017	Natural	1/8	.091	.017	1700	1/2	500
NBR-2-017	Black	1/8	.091	.017	1700	1/2	500
NNR-2-026	Natural	1/8	.073	.026	2500	3/8	500
NBR-2-026	Black	1/8	.073	.026	2500	3/8	500
NNR-3-024	Natural	3/16	.140	.024	1700	3/4	500
NBR-3-024	Black	3/16	.140	.024	1700	3/4	500
NNR-3-039	Natural	3/16	.110	.039	2500	5/8	500
NBR-3-039	Black	3/16	.110	.039	2500	5/8	500
NNR-4-035	Natural	1/4	.180	.035	1700	1	250
NBR-4-035	Black	1/4	.180	.035	1700	1	250
NNR-4-050	Natural	1/4	.150	.050	2500	7/8	250
NBR-4-050	Black	1/4	.150	.050	2500	7/8	250
NNR-5-040	Natural	5/16	.233	.040	1700	1-1/2	250
NBR-5-040	Black	5/16	.233	.040	1700	1-1/2	250
NNR-6-048	Natural	3/8	.279	.048	1700	1-3/4	250
NBR-6-048	Black	3/8	.279	.048	1700	1-3/4	250
NNR-6-075	Natural	3/8	.225	.075	2500	1-1/2	250
NBR-6-075	Black	3/8	.225	.075	2500	1-1/2	250
NNR-8-062	Natural	1/2	.376	.062	1500	2-3/8	250
NBR-8-062	Black	1/2	.376	.062	1500	2-3/8	250
NNR-8-075	Natural	1/2	.350	.075	2200	2-1/2	250
NBR-8-075	Black	1/2	.350	.075	2200	2-1/2	250

*Suggested working pressure is 1/4 of burst pressure.

Advantages

Series NR semi-rigid nylon tubing offers better chemical resistance than series N, good resistance to high ambient temperature and low moisture absorption. NR has a high tensile strength which will give excellent coupling retention in high pressure, temperature and vibration environments.

Construction

Parker series NR tubing is manufactured from a semi-rigid nylon II material. The tubing does not contain plasticizers.

Applications & Approvals

NR tubing is specified for machine tool lubricating systems, marine control systems, process lines for chemicals and oils and other applications requiring a high quality nylon tube.

Temperature Range

The recommended operating temperature range for service at rated pressures with compatible fluids is -60°F to 200°F (-51°C to 93°C).

Fitting Recommendations

- Brass fittings

Nomenclature

Order by tubing part number and name.

Example:

N B R 2 016

Nylon _____

Color, Black _____

Rigid _____

1/8" (2/16) Tube O.D. _____

Wall Thickness (in thousandths of an inch) _____

PTC Plastic Tube Cutter

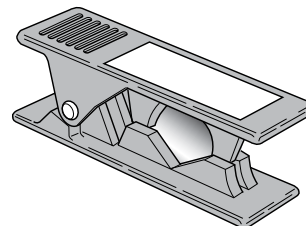
Part No. PTC-001

An easy to handle razor/edged tube cutter, closes automatically, assuring clean and square cuts.

May be used with polyethylene, polypropylene, nylon and other plastic tubing.

How To Use

Insert plastic tube to desired length, allow tube cutter to close, then apply pressure until tube snaps off.



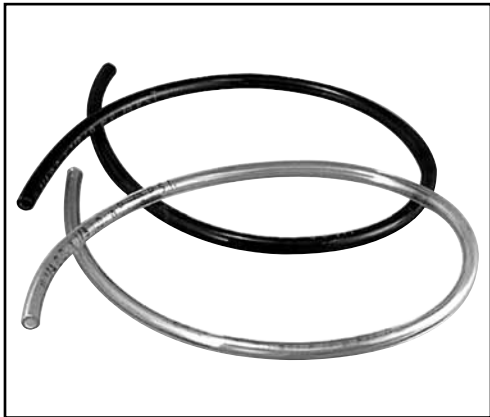
Pipe Fittings & Adapters

Prestolok Metal

Presolok Composite

Tubing

N



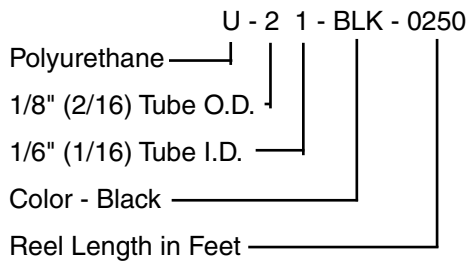
Fitting Recommendations

- Thermoplastic fittings
- Brass fittings

Nomenclature

Order by tubing part number and name.

Example:



Advantages

Polyurethane tubing is a high quality, precision-made tubing used in a wide range of demanding and critical applications.

Polyether based, polyurethane tubing occupies a unique position among polymers, sharing the best properties of both rubber and plastic. Urethane exhibits the elongation and recovery characteristics of rubber and the chemical resistance associated with plastics. The tubing is tough, strong, kink-resistant and abrasion resistant, yet it's flexible and easy to assemble onto designated fittings.

- Tough
- Flexible
- Broad Temperature Range
- Eight Colors
- Abrasion Resistant
- Chemical Resistant

U Polyether Base Tubing

Part No.*	Nom. Tube O.D.	Nom. Tube I.D.	Wall Thick.	Working** Pressure (PSI)	Burst Pressure (PSI)	Reel Length Feet
U-21-xxx-0500	1/8	1/16	1/32	125	375	500
U-21-xxx-0250						250
U-42-xxx-0500	1/4	1/8	1/16	125	375	500
U-42-xxx-0250						250
U-64-xxx-0250	3/8	1/4	1/16	125	375	250
U-64-xxx-0100						100 (coil)
U-86-xxx-0250	1/2	3/8	1/16	85	255	250
U-86-xxx-0100						100 (coil)

* xxx = Colors: Clear-BLK, Black-BLK, Green-GRN, Red-RED, Yellow-YEL, Blue-BLU, Orange-ORG, Gray-GRA

** Based on a full 4:1 safety factor.

Applications & Approvals

Polyurethane tubing is used for a wide variety of applications. Typical usage includes air tools, robotics, pneumatic logic and actuation systems, analytical instrumentation, vacuum equipment, pressure measurement apparatus, semiconductor equipment manufacturers and a variety of medical and laboratory applications.

Temperature Range

Suggested operating temperatures, depending upon conditions are 0°F to 200°F (-18°C to 93°C).

Pipe Fittings & Adapters
 Prestolok Metal
 Prestolok Composite
 Tubing
N

Notes






























Pipe Fittings
& Adapters




































Prestolok
Metal

Prestolok
Composite

Tubing

N

Pipe Fittings & Adapters Prestolok Metal Prestolok Composite Tubing	Tube to Male NPTF	W369PLP Male Elbow  Page N11	W369PLPX Extended Male Elbow  Page N12	W379PLP Male Elbow 45°  Page N12	W372PLP Branch Tee Swivel  Page N13	W371PLP Male Run Tee Swivel  Page N14
		W68PLPSP Male Standpipe  Page N15	W368PLP Male Y Connector  Page N15	Tube to Tube	32PLP Equal Union  Page N17	365PLP Union Elbow  Page N17
	362PLP Union Y Connector  Page N16	362PLPD Double Y Connector  Page N19	24PLP Multiple Tee  Page N19		24PLPD Double Multiple Tee  Page N20	347PLP Equal Cross  Page N20
	32PLPDRC Connector for 3 Tubes  Page N24	Tube to Female NPTF	377PLP Female Branch Tee Swivel  Page N13	370PLP Female Elbow Swivel  Page N16		
	Bulkhead Unions		32PLPBH Bulkhead Union  Page N19	365PLPBH Equal Bulkhead Elbow  Page N19	Plug-Ins	369PLPSP Plug-In Elbow  Page N20
		379PLPSP 45° Plug-In Elbow  Page N21	372PLPSP Plug-In Branch Tee  Page N21	371PLPSP Plug-In Run Tee  Page N21		362PLPSP Plug-In Y  Page N22
	322PLPSP Barbed Connector  Page N24	Auxiliary Components	63PLP Double Male Union  Page N22	639PLP Plug  Page N24		
	Metric Tube to Male NPTF		W369PLP Male Elbow  Page N11	W372PLP Male Branch Tee Swivel  Page N13		

Metric Tube to Metric Tube	32PLP Union  Page N17	365PLP Union Elbow  Page N17	364PLP Union Tee  Page N18	362PLP Union Y Connector  Page N22	362PLPD Double Y Connector  Page N19
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Metric Bulkhead Unions	32PLPBH Bulkhead Union  Page N19	365PLPBH Equal Bulkhead Elbow  Page N19	Metric Tube to Female BSPP	370PLP Female Elbow  Page N16	
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68PLPSP Male Standpipe  Page N15	368PLP Male Y Connector  Page N15	368PLPD Double Y Male Connector  Page N16	Metric Tube to Metric Straight Thread	369PLP Male Elbow  Page N11	369PLPX Male Elbow  Page N12
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Metric Plug-Ins	369PLPSP Plug-In Elbow  Page N20	369PLPXSP Extended Plug-In Elbow  Page N21	379PLPSP 45° Plug-In Elbow  Page N21	372PLPSP Plug-In Branch Tee  Page N21	371PLPSP Plug-In Run Tee  Page N22
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Pipe Fittings & Adapters
Prestolok Metal
Presolok Composite
Tubing

N

Features

Materials of Construction	
Body:	Glass reinforced nylon 6.6
Collar:	Nylon
Gripping Ring:	Stainless Steel
D Seal:	Nitrile
O-Rings:	Nitrile
Base:	Nickel plated brass with thread sealant on tapered components and captive seal on parallel threads.

Nomenclature	
Example: W369PLP-4-2	Attribute:
w	White Thread Sealant
3	composite body
69	male elbow
PLP	Prestolok
4	1/4" (4/16) Tube O.D.
2	1/8" (2/16) Pipe Thread

Pressure and Temperature Range	
Gripping Ring:	-4°F to +175°F at up to 290 PSI depending on tubing
Collet Technology:	+5°F to +155°F at up to 260 PSI depending on tubing
Vacuum Capability:	28" Hg

Applicable Tube	
Tube O.D.:	1/8, 5/32, 3/16, 1/4, 5/16, 3/8, 1/2
Tube O.D. (mm):	3, 4, 6, 8, 10, 12, 14



A compact one piece push-to-connect fitting. All items in the Prestolok composite range are silicone free. The stainless steel gripping ring ensures excellent tube retention while the D seal within the fitting provides a positive seal on the O.D. of the tube, in both static and dynamic positions, due to an optimized design of the fitting cavity. Prestolok composite should not be used for live swivel applications.

Recommended Tubing

Prestolok composite fittings are designed to be used with the following tubing.

- Nylon Semi-Rigid
- Polyurethane
- Nylon
- Fluoropolymer

Assembly Instructions

1. Achieve a square cut edge with a tube cutter
2. Simply push the tubing until it can go no further. Holding and sealing is accomplished instantaneously.
3. Pull on the tubing to verify gripping action
4. To disassemble make sure there is no air flow
5. Depress the manual push button, then pull the tube out.

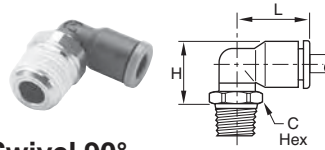
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

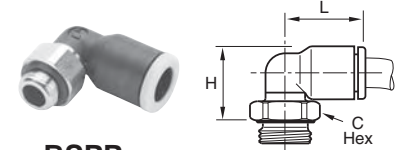
Tubing

N



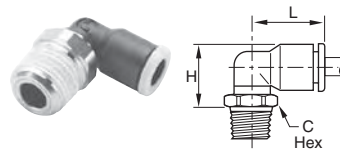
W369PLP Male Elbow Swivel 90°

Part No.	Tube Size (In.)	Thread NPT / UNF	C Hex (mm)	L	H
369PLP-2-0	1/8	10-32	8	0.57	0.52
W369PLP-2-1	1/8	1/16	10	0.57	0.53
W369PLP-2-2	1/8	1/8	11	0.57	0.53
W369PLP-2-4	1/8	1/4	14	0.57	0.55
369PLP-5/32-0	5/32	10-32	8	0.55	0.53
W369PLP-5/32-2	5/32	1/8	11	0.55	0.53
W369PLP-5/32-4	5/32	1/4	14	0.55	0.55
W369PLP-3-2	3/16	1/8	11	0.85	0.67
369PLP-4-0	1/4	10-32	11	0.71	0.63
W369PLP-4-2	1/4	1/8	11	0.71	0.67
W369PLP-4-4	1/4	1/4	14	0.71	0.63
W369PLP-4-6	1/4	3/8	18	0.71	0.65
W369PLP-5-2	5/16	1/8	11	0.91	0.75
W369PLP-5-4	5/16	1/4	14	0.91	0.71
W369PLP-5-6	5/16	3/8	18	0.91	0.73
W369PLP-6-2	3/8	1/8	15	1.08	0.91
W369PLP-6-4	3/8	1/4	15	1.08	0.91
W369PLP-6-6	3/8	3/8	18	1.08	0.87
W369PLP-6-8	3/8	1/2	22	1.08	0.91
W369PLP-8-4	1/2	1/4	20	1.38	1.22
W369PLP-8-6	1/2	3/8	20	1.38	1.22
W369PLP-8-8	1/2	1/2	24	1.38	1.12



369PLP Male Elbow - BSPP

Part No.	Tube Size (mm)	BSPP / Metric	C Hex (mm)	H	L
369PLP-3M-M3	3	M3X0.5	8	15.0	14.5
369PLP-3M-M5	3	M5X0.8	8	13.5	14.5
369PLP-4M-M3	4	M3X0.5	8	15.0	14.5
369PLP-4M-M5	4	M5X0.8	8	13.5	14.0
369PLP-4M-M7	4	M7X1	10	15.0	14.0
369PLP-4M-2G	4	1/8	13	13.0	14.0
369PLP-4M-4G	4	1/4	16	13.0	14.0
369PLP-6M-M5	6	M5X0.8	8	15.5	16.0
369PLP-6M-M7	6	M7X1	10	17.5	16.0
369PLP-6M-M10	6	M10X1	13	15.0	14.0
369PLP-6M-M12	6	M12X1.5	15	15.0	16.0
369PLP-6M-2G	6	1/8	13	15.0	16.0
369PLP-6M-4G	6	1/4	16	15.0	16.0
369PLP-6M-6G	6	3/8	20	15.5	16.0
369PLP-6M-8G	6	1/2	24	16.0	16.0
369PLP-8M-M10	8	M10X1	13	20.5	23.0
369PLP-8M-M12	8	M12X1.5	15	19.5	23.0
369PLP-8M-2G	8	1/8	13	20.5	23.0
369PLP-8M-4G	8	1/4	16	18.5	23.0
369PLP-8M-6G	8	3/8	20	18.5	23.0
369PLP-8M-8G	8	1/2	24	19.0	23.0
369PLP-10M-4G	10	1/4	16	23.5	26.5
369PLP-10M-6G	10	3/8	20	22.0	26.5
369PLP-10M-8G	10	1/2	24	22.0	26.5
369PLP-12M-4G	12	1/4	16	26.5	31.0
369PLP-12M-6G	12	3/8	20	25.0	31.0
369PLP-12M-8G	12	1/2	24	25.0	31.0
369PLP-14M-6G	14	3/8	20	32.5	35.5
369PLP-14M-8G	14	1/2	24	27.0	35.5



W369PLP Male Elbow

Part No.	Tube Size (mm)	Thread NPT	C Hex (mm)	H	L
W369PLP-4M-2	4	1/8	11	0.5	0.6
W369PLP-4M-4	4	1/4	14	0.6	0.6
W369PLP-6M-2	6	1/8	11	0.6	0.6
W369PLP-6M-4	6	1/4	14	0.6	0.6
W369PLP-8M-2	8	1/8	11	0.8	0.9
W369PLP-8M-4	8	1/4	14	0.7	0.9
W369PLP-8M-6	8	3/8	18	0.7	0.9
W369PLP-10M-4	10	1/4	15	0.9	1.0
W369PLP-10M-6	10	3/8	18	0.9	1.0
W369PLP-10M-8	10	1/2	22	0.9	1.0
W369PLP-12M-6	12	3/8	18	1.0	1.2
W369PLP-12M-8	12	1/2	22	1.0	1.2

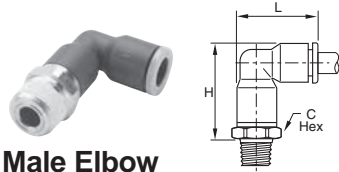
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

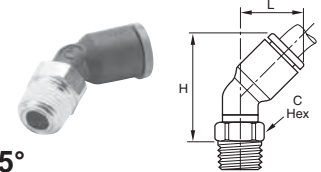
Tubing

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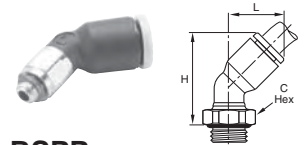
W369PLPX Extended Male Elbow

Part No.	Tube Size (In.)	Thread NPT / UNF	C Hex (mm)	H	L
369PLPX-2-0	1/8	10-32	8	0.91	0.75
W369PLPX-2-2	1/8	1/8	11	0.91	0.75
W369PLPX-2-4	1/8	1/4	14	0.93	0.75
369PLPX-5/32-0	5/32	10-32	8	0.91	0.75
W369PLPX-5/32-2	5/32	1/8	11	0.91	0.75
W369PLPX-5/32-4	5/32	1/4	14	0.93	0.75
369PLPX-4-0	1/4	10-32	11	1.10	0.93
369PLPX-4-M7	1/4	M7	9	1.17	0.93
W369PLPX-4-2	1/4	1/8	11	1.12	0.93
W369PLPX-4-4	1/4	1/4	14	1.08	0.93
W369PLPX-4-6	1/4	3/8	17	1.12	0.93
W369PLPX-5-2	5/16	1/8	13	1.32	1.16
W369PLPX-5-4	5/16	1/4	14	1.28	1.16
W369PLPX-6-2	3/8	1/8	17	1.40	1.34
W369PLPX-6-4	3/8	1/4	17	1.41	1.33
W369PLPX-6-6	3/8	3/8	18	1.45	1.33



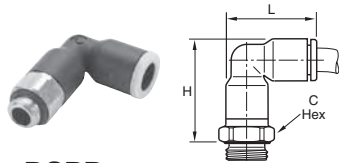
W379PLP Male Elbow 45°

Part No.	Tube Size (In.)	Thread NPT / UNF	C Hex (mm)	H	L
379PLP-2-0	1/8	10-32	8	0.91	0.49
W379PLP-2-2	1/8	1/8	11	0.81	0.49
W379PLP-4-2	1/4	1/8	11	0.98	0.57
W379PLP-4-4	1/4	1/4	14	0.98	0.57
W379PLP-4-M7	1/4	M7	9	1.14	0.57
W379PLP-6-4	3/8	1/4	17	1.36	0.91
W379PLP-6-6	3/8	3/8	18	1.36	0.91



379PLP 45° Male Elbow - BSPP

Part No.	Tube Size (mm)	BSPP / M5	C Hex (mm)	H	L
379PLP-4M-M5	4	M5X0.8	8	23.0	13.0
379PLP-4M-2G	4	1/8	13	25.0	13.0
379PLP-6M-M5	6	M5X0.8	8	30.0	14.5
379PLP-6M-2G	6	1/8	13	28.5	14.5
379PLP-6M-4G	6	1/4	16	29.5	14.5
379PLP-8M-2G	8	1/8	13	36.0	19.5
379PLP-8M-4G	8	1/4	16	34.5	19.5
379PLP-8M-6G	8	3/8	20	34.5	19.5
379PLP-10M-4G	10	1/4	16	40.5	23.0
379PLP-10M-6G	10	3/8	20	39.0	23.0
379PLP-10M-8G	10	1/2	24	41.0	23.0
379PLP-12M-4G	12	1/4	16	46.0	26.0
379PLP-12M-6G	12	3/8	20	44.5	26.0
379PLP-12M-8G	12	1/2	24	46.0	26.0



369PLPX Male Elbow - BSPP

Part No.	Tube Size (mm)	BSPP / Metric	C Hex (mm)	H
369PLPX-4M-M5	4	M5X0.8	8	23.0
369PLPX-4M-M7	4	M7X1	10	22.5
369PLPX-4M-2G	4	1/8	13	22.5
369PLPX-4M-4G	4	1/4	16	22.5
369PLPX-6M-M5	6	M5X0.8	10	27.5
369PLPX-6M-M7	6	M7X1	10	26.0
369PLPX-6M-2G	6	1/8	13	27.0
369PLPX-6M-4G	6	1/4	16	27.0
369PLPX-8M-2G	8	1/8	13	36.0
369PLPX-8M-4G	8	1/4	16	33.0
369PLPX-8M-6G	8	3/8	20	33.0
369PLPX-10M-4G	10	1/4	16	40.5
369PLPX-10M-6G	10	3/8	20	40.5
369PLPX-10M-8G	10	1/2	24	40.5
369PLPX-12M-4G	12	1/4	19	44.5
369PLPX-12M-6G	12	3/8	20	42.0
369PLPX-12M-8G	12	1/2	24	42.0
369PLPX-14M-6G	14	3/8	22	51.0
369PLPX-14M-8G	14	1/2	24	48.5

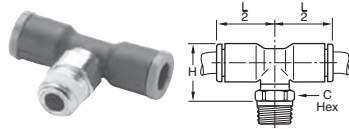
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

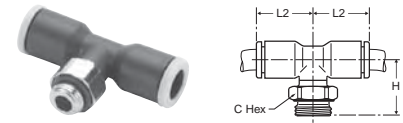
Tubing

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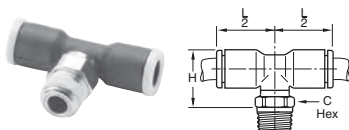
W372PLP Male Branch Tee Swivel

Part No.	Tube Size (In.)	Thread NPT / UNF	C Hex (mm)	L/2	H
372PLP-2-0	1/8	10-32	8	0.57	0.61
W372PLP-2-1	1/8	1/16	10	0.57	0.61
W372PLP-2-2	1/8	1/8	11	0.57	0.61
W372PLP-2-4	1/8	1/4	14	0.57	0.63
372PLP-5/32-0	5/32	10-32	8	0.55	0.71
W372PLP-5/32-2	5/32	1/8	11	0.55	0.61
W372PLP-5/32-4	5/32	1/4	14	0.55	0.63
W372PLP-3-2	3/16	1/8	11	0.85	0.67
W372PLP-4-2	1/4	1/8	11	0.71	0.67
W372PLP-4-4	1/4	1/4	14	0.71	0.63
W372PLP-4-6	1/4	3/8	18	0.71	0.65
W372PLP-5-2	5/16	1/8	11	0.91	0.87
W372PLP-5-4	5/16	1/4	14	0.91	0.83
W372PLP-5-6	5/16	3/8	18	0.91	0.85
W372PLP-6-2	3/8	1/8	15	1.04	0.99
W372PLP-6-4	3/8	1/4	15	1.04	0.99
W372PLP-6-6	3/8	3/8	18	1.04	0.95
W372PLP-6-8	3/8	1/2	22	1.04	0.98
W372PLP-8-4	1/2	1/4	20	1.38	1.22
W372PLP-8-6	1/2	3/8	20	1.38	1.22
W372PLP-8-8	1/2	1/2	24	1.38	1.21



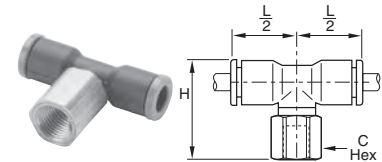
372PLP Male Branch Tee - BSPP

Part No.	Tube Size (mm)	BSPP / M5	C Hex (mm)	H	L/2
372PLP-4M-M5	4	M5X0.8	8	17.5	14.0
372PLP-4M-2G	4	1/8	13	15.0	14.0
372PLP-4M-4G	4	1/4	16	15.0	14.0
372PLP-6M-M5	6	M5X0.8	8	19.5	16.0
372PLP-6M-2G	6	1/8	13	17.0	16.0
372PLP-6M-4G	6	1/4	16	17.0	16.0
372PLP-8M-2G	8	1/8	13	23.5	23.0
372PLP-8M-4G	8	1/4	16	21.5	23.0
372PLP-8M-6G	8	3/8	20	21.5	23.0
372PLP-10M-4G	10	1/4	16	26.0	26.5
372PLP-10M-6G	10	3/8	20	24.0	26.5
372PLP-10M-8G	10	1/2	24	24.0	26.5
372PLP-12M-4G	12	1/4	16	29.0	31.0
372PLP-12M-6G	12	3/8	20	27.0	31.0
372PLP-12M-8G	12	1/2	24	27.0	31.0
372PLP-14M-6G	14	3/8	20	32.5	35.5
372PLP-14M-8G	14	1/2	24	27.0	35.5



W372PLP Male Branch Tee - NPT

Part No.	Tube Size (mm)	NPT	C Hex (mm)	H	L/2
W372PLP-4M-2	4	1/8	11	0.61	0.55
W372PLP-4M-4	4	1/4	14	0.63	0.55
W372PLP-6M-2	6	1/8	11	0.69	0.63
W372PLP-6M-4	6	1/4	14	0.71	0.63
W372PLP-8M-2	8	1/8	11	0.87	0.91
W372PLP-8M-4	8	1/4	14	0.83	0.91
W372PLP-8M-6	8	3/8	18	0.85	0.91
W372PLP-10M-4	10	1/4	15	0.98	1.04
W372PLP-10M-6	10	3/8	18	0.95	1.04
W372PLP-10M-8	10	1/2	22	0.98	1.04
W372PLP-12M-6	12	3/8	18	1.06	1.22
W372PLP-12M-8	12	1/2	22	0.98	1.22



377PLP Female Branch Tee Swivel

Part No.	Tube Size (In.)	Thread NPT / UNF	C Hex (mm)	L/2	H
377PLP-2-2	1/8	1/8	13	0.57	0.99
377PLP-5/32-2	5/32	1/8	13	0.55	0.91
377PLP-5/32-4	5/32	1/4	16	0.55	1.08
377PLP-4-2	1/4	1/8	13	0.71	1.02
377PLP-4-4	1/4	1/4	16	0.71	1.18
377PLP-5-2	5/16	1/8	13	0.91	1.24
377PLP-5-4	5/16	1/4	16	0.91	1.40
377PLP-6-4	3/8	1/4	16	1.04	1.60
377PLP-8-6	1/2	3/8	22	1.38	1.88

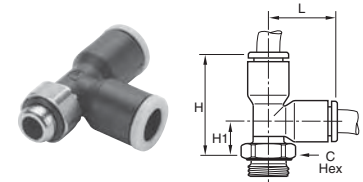
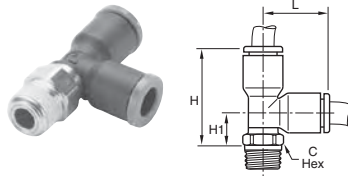
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

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W371PLP Male Run Tee Swivel

Part No.	Tube Size (In.)	Thread NPT / UNF	C Hex (mm)	L	H	H1
371PLP-2-0	1/8	10-32	8	0.57	0.92	0.35
W371PLP-2-1	1/8	1/16	10	0.57	0.93	0.35
W371PLP-2-2	1/8	1/8	11	0.57	0.93	0.35
371PLP-5/32-0	5/32	10-32	8	0.57	1.02	0.45
W371PLP-5/32-2	5/32	1/8	11	0.57	0.93	0.53
W371PLP-5/32-4	5/32	1/4	14	0.57	0.94	0.37
W371PLP-3-2	3/16	1/8	11	0.85	1.31	0.45
W371PLP-4-2	1/4	1/8	11	0.69	1.16	0.45
W371PLP-4-4	1/4	1/4	14	0.69	1.12	0.41
W371PLP-4-6	1/4	3/8	18	0.69	1.14	0.43
W371PLP-5-2	5/16	1/8	11	0.91	1.38	0.49
W371PLP-5-4	5/16	1/4	14	0.91	1.34	0.45
W371PLP-5-6	5/16	3/8	18	0.91	1.36	0.47
W371PLP-6-2	3/8	1/8	15	1.04	1.63	0.60
W371PLP-6-4	3/8	1/4	15	1.04	1.63	0.60
W371PLP-6-6	3/8	3/8	18	1.04	1.60	0.55
W371PLP-6-8	3/8	1/2	22	1.04	1.63	0.59
W371PLP-8-4	1/2	1/4	20	1.38	2.17	0.79
W371PLP-8-6	1/2	3/8	20	1.38	2.17	0.79
W371PLP-8-8	1/2	1/2	24	1.38	2.07	0.79

371PLP Male Run Tee - BSPP

Part No.	Tube Size (mm)	BSPP / M5	C Hex (mm)	H	H1	L
371PLP-4M-M5	4	M5X0.8	8	26.0	11.5	14.5
371PLP-4M-2G	4	1/8	13	23.0	8.5	14.5
371PLP-4M-4G	4	1/4	16	23.0	8.5	14.5
371PLP-6M-M5	6	M5X0.8	8	29.5	12.5	17.5
371PLP-6M-2G	6	1/8	13	27.0	10.0	17.5
371PLP-6M-4G	6	1/4	16	27.0	10.0	17.5
371PLP-8M-2G	8	1/8	13	36.5	14.0	23.0
371PLP-8M-4G	8	1/4	16	34.5	12.0	23.0
371PLP-8M-6G	8	3/8	20	34.5	12.0	23.0
371PLP-10M-4G	10	1/4	16	42.0	15.5	26.5
371PLP-10M-6G	10	3/8	20	40.5	14.0	26.5
371PLP-10M-8G	10	1/2	24	40.5	14.0	26.5
371PLP-12M-4G	12	1/4	16	48.0	17.0	31.0
371PLP-12M-6G	12	3/8	20	46.5	15.5	31.0
371PLP-12M-8G	12	1/2	24	46.5	15.5	31.0
371PLP-14M-6G	14	3/8	20	56.5	21.5	35.5
371PLP-14M-8G	14	1/2	24	51.0	16.0	35.5

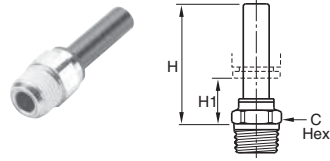
Pipe Fittings
& Adapters

Prestolok
Metal

Prestolok
Composite

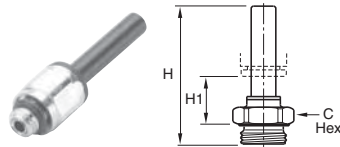
Tubing

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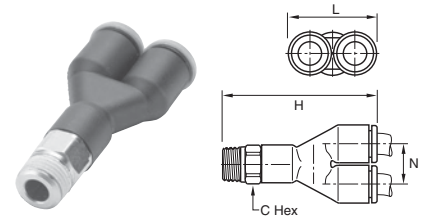
W68PLPSP Male Standpipe

Part No.	Tube Size (In.)	Thread NPT / UNF	C Hex (mm)	H	H1
68PLPSP-5/32-0	5/32	10-32	8	1.24	
W68PLPSP-5/32-2	5/32	1/8	11	1.02	0.57
W68PLPSP-5/32-4	5/32	1/4	14	1.04	0.59
W68PLPSP-4-2	1/4	1/8	11	1.18	0.61
W68PLPSP-4-4	1/4	1/4	14	1.12	0.57
W68PLPSP-5-2	5/16	1/8	11	1.16	0.43
W68PLPSP-5-4	5/16	1/4	14	1.12	0.39
W68PLPSP-6-2	3/8	1/8	15	1.75	0.65
W68PLPSP-6-4	3/8	1/4	15	1.42	0.67
W68PLPSP-6-6	3/8	3/8	17	1.42	0.61
W68PLPSP-8-6	1/2	3/8	17	1.44	0.37
W68PLPSP-8-8	1/2	1/2	21	1.46	0.39



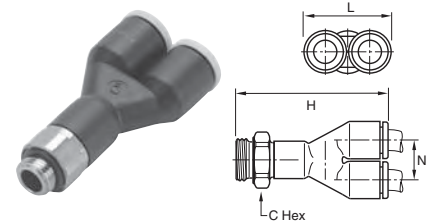
68PLPSP Male Standpipe - BSPP

Part No.	Tube Size (mm)	BSPT	C Hex (mm)	H	H1
68PLPSP-4M-M5	4	M5X0.8	8	31.0	16.0
68PLPSP-4M-2G	4	1/8	13	30.0	13.5
68PLPSP-4M-4G	4	1/4	16	31.0	13.5
68PLPSP-6M-2G	6	1/8	13	32.0	13.5
68PLPSP-6M-4G	6	1/4	16	33.0	13.5
68PLPSP-8M-2G	8	1/8	13	35.5	12.5
68PLPSP-8M-4G	8	1/4	16	34.5	10.5
68PLPSP-8M-6G	8	3/8	20	34.5	10.5
68PLPSP-10M-4G	10	1/4	16	43.5	17.5
68PLPSP-10M-6G	10	3/8	20	41.5	15.5
68PLPSP-10M-8G	10	1/2	24	41.5	15.5
68PLPSP-12M-6G	12	3/8	20	42.0	12.0
68PLPSP-12M-8G	12	1/2	24	43.5	12.0
68PLPSP-14M-6G	14	3/8	20	46.5	14.0
68PLPSP-14M-8G	14	1/2	24	48.0	13.5



W368PLP Male Y Connector

Part No.	Tube Size (In.)	Thread NPT	C Hex (mm)	H	L	N
W368PLP-5/32-2	5/32	1/8	11	1.28	0.69	0.35
W368PLP-5/32-4	5/32	1/4	14	1.30	0.69	0.35
W368PLP-4-2	1/4	1/8	11	1.61	0.87	0.45
W368PLP-4-4	1/4	1/4	14	1.56	0.87	0.45
W368PLP-6-4	3/8	1/4	17	2.24	1.30	0.67
W368PLP-6-6	3/8	3/8	18	2.28	1.30	0.67



368PLP Male Y Connector - BSPP

Part No.	Tube Size (mm)	BSPP / M5	C Hex (mm)	H	L	N
368PLP-4M-M5	4	M5X0.8	8	32.5	17.5	9.0
368PLP-4M-2G	4	1/8	13	32.0	17.5	9.0
368PLP-4M-4G	4	1/4	16	32.0	17.5	9.0
368PLP-6M-M5	6	M5X0.8	10	39.5	21.5	11.0
368PLP-6M-2G	6	1/8	13	39.0	21.5	11.0
368PLP-6M-4G	6	1/4	16	39.0	21.5	11.0
368PLP-8M-2G	8	1/8	13	56.0	28.0	14.5
368PLP-8M-4G	8	1/4	16	55.0	28.0	14.5
368PLP-8M-6G	8	3/8	19	54.0	28.0	14.5
368PLP-10M-4G	10	1/4	16	63.5	33.0	17.0
368PLP-10M-6G	10	3/8	20	63.5	33.0	17.0
368PLP-10M-8G	10	1/2	20	65.0	33.0	17.0
368PLP-12M-6G	12	3/8	19	68.0	39.0	20.0
368PLP-12M-8G	12	1/2	24	70.0	39.0	20.0

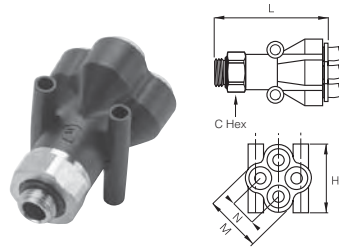
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

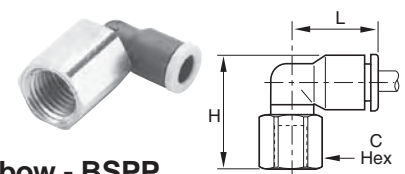
Tubing

N



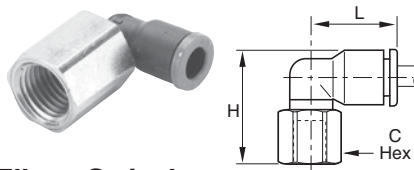
368PLPD Double Y Male Connector - BSPP

Part No.	Tube Size (mm)	BSPP	C Hex (mm)	H	L	M	N	Mounting Hole Dia.
368PLPD-4M-2G	4	1/8	13	25.5	41.0	21.0	10.0	3.7
368PLPD-4M-4G	4	1/4	16	25.5	40.0	21.0	10.0	3.7
368PLPD-6M-2G	6	1/8	19	31.5	52.5	26.5	12.0	3.7
368PLPD-6M-4G	6	1/4	19	31.5	53.5	26.5	12.0	3.7



370PLP Female Elbow - BSPP

Part No.	Tube Size (mm)	BSPP	C Hex (mm)	H	L
370PLP-4M-2G	4	1/8	13	23.0	14.0
370PLP-4M-4G	4	1/4	16	27.0	14.0
370PLP-6M-2G	6	1/8	13	25.0	16.0
370PLP-6M-4G	6	1/4	16	29.0	16.0
370PLP-8M-2G	8	1/8	13	28.0	23.0
370PLP-8M-4G	8	1/4	16	32.0	23.0
370PLP-8M-6G	8	3/8	19	33.0	23.0
370PLP-10M-4G	10	1/4	16	34.5	26.5
370PLP-10M-6G	10	3/8	19	35.0	26.5
370PLP-10M-8G	10	1/2	24	41.0	26.5
370PLP-12M-4G	12	1/4	16	38.0	30.5
370PLP-12M-6G	12	3/8	19	38.5	30.5
370PLP-12M-8G	12	1/2	24	43.5	30.5



370PLP Female Elbow Swivel

Part No.	Tube Size (In.)	Thread NPT	C Hex (mm)	L	H
370PLP-2-2	1/8	1/8	13	0.57	0.91
370PLP-5/32-2	5/32	1/8	13	0.55	0.91
370PLP-5/32-4	5/32	1/4	16	0.55	1.08
370PLP-4-2	1/4	1/8	13	0.71	1.02
370PLP-4-4	1/4	1/4	16	0.71	1.18
370PLP-5-2	5/16	1/8	13	0.91	1.12
370PLP-5-4	5/16	1/4	16	0.91	1.28
370PLP-6-4	3/8	1/4	16	1.04	1.52
370PLP-8-6	1/2	3/8	22	1.38	1.88

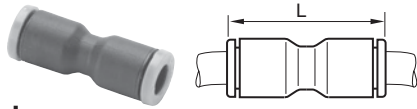
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

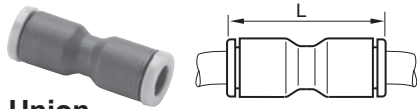
Tubing

N



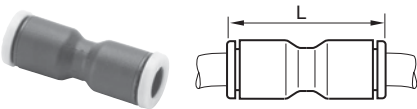
32PLP Equal Union

Part No.	Tube Size (In.)	L
32PLP-2	1/8	0.97
32PLP-5/32	5/32	0.98
32PLP-3	3/16	1.44
32PLP-4	1/4	1.16
32PLP-5	5/16	1.50
32PLP-6	3/8	1.65
32PLP-8	1/2	2.17



32PLP Unequal Union

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	L
32PLP-5/32-2	5/32	1/8	0.96
32PLP-5/32-4	5/32	1/4	1.16
32PLP-4-2	1/4	1/8	1.32
32PLP-5-4	5/16	1/4	1.44
32PLP-6-4	3/8	1/4	1.61
32PLP-6-8	3/8	1/2	2.17



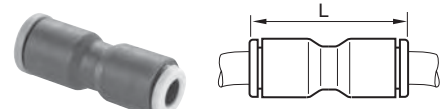
32PLP Union

Part No.	Tube Size (mm)	L
32PLP-3M	3	25.0
32PLP-4M	4	25.0
32PLP-6M	6	28.5
32PLP-8M	8	38.0
32PLP-10M	10	42.0
32PLP-12M	12	50.5
32PLP-14M	14	56.0



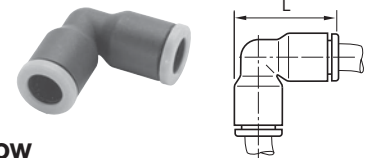
32PLP Unequal Union

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	L
32PLP-3M-4M	3	4	25.0
32PLP-6M-4M	6	4	28.0
32PLP-8M-4M	8	4	28.0
32PLP-8M-6M	8	6	38.0
32PLP-10M-6M	10	6	42.0
32PLP-10M-8M	10	8	42.0
32PLP-12M-10M	12	10	50.5
32PLP-12M-14M	12	14	56.0
32PLP-12M-8M	12	8	50.5



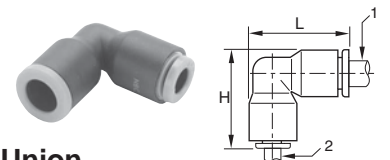
32PLP Converter

Part No.	Tube Size (In.)	Tube Size (mm)	L
32PLP-6M-4	1/4	6	1.18
32PLP-10M-6	3/8	10	1.99
32PLP-12M-8	1/2	12	2.25



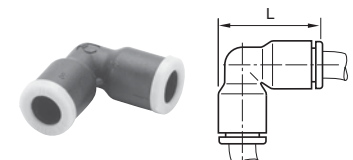
365PLP Union Elbow

Part No.	Tube Size (In.)	L
365PLP-2	1/8	0.71
365PLP-5/32	5/32	0.75
365PLP-3	3/16	1.07
365PLP-4	1/4	0.93
365PLP-5	5/16	1.16
365PLP-6	3/8	1.33
365PLP-8	1/2	1.38



365PLP Unequal Union

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	L	H
365PLP-2-4	1/8	1/4	0.93	0.93
365PLP-5/32-4	5/32	1/4	0.93	0.93
365PLP-6-4	3/8	1/4	1.33	1.30
365PLP-6-8	3/8	1/2	1.81	1.81



365PLP Union Elbow

Part No.	Tube Size (mm)	L
365PLP-4M	4	19.0
365PLP-6M	6	22.5
365PLP-8M	8	29.5
365PLP-10M	10	34.5
365PLP-12M	12	40.5
365PLP-14M	14	46.5

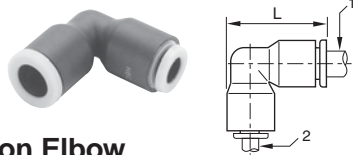
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

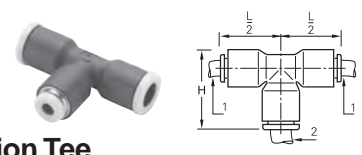
Tubing

N



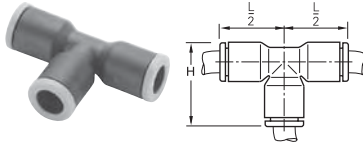
365PLP Unequal Union Elbow

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	L
365PLP-4M-6M	4	6	22.5
365PLP-6M-8M	6	8	29.5
365PLP-8M-10M	8	10	34.5
365PLP-10M-12M	10	12	40.5



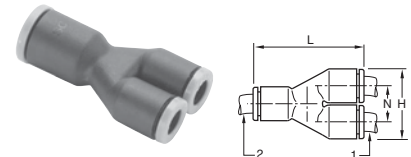
364PLP Unequal Union Tee

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	L/2
364PLP-4M-6M	4	6	22.5	17.5
364PLP-6M-4M	6	4	22.5	17.5
364PLP-6M-8M	6	8	29.5	23.0
364PLP-8M-6M	8	6	29.5	23.0
364PLP-8M-10M	8	10	34.5	26.5
364PLP-10M-12M	10	12	34.5	26.5
364PLP-10M-8M	10	8	40.5	31.0
364PLP-12M-10M	12	10	40.5	31.0
364PLP-14M-8M	14	8	46.0	35.5



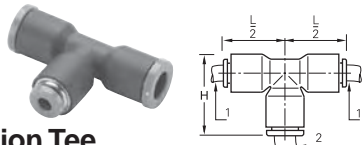
364PLP Union Tee

Part No.	Tube Size (In.)	L/2	H
364PLP-2	1/8	0.57	0.75
364PLP-5/32	5/32	0.57	0.75
364PLP-3	3/16	0.85	1.07
364PLP-4	1/4	0.93	0.89
364PLP-5	5/16	0.91	1.16
364PLP-6	3/8	1.02	1.34
364PLP-8	1/2	1.38	1.81



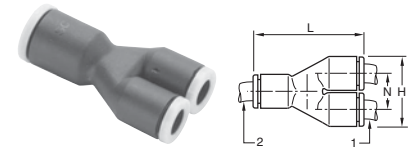
362PLP Union Y Connector

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	L	H	N
362PLP-2	1/8	1/8	1.12	0.69	0.35
362PLP-2-4	1/8	1/4	1.42	0.87	0.45
362PLP-5/32	5/32	5/32	1.12	0.69	0.35
362PLP-5/32-4	5/32	1/4	1.42	0.87	0.45
362PLP-4	1/4	1/4	1.42	0.87	0.45
362PLP-4-6	1/4	3/8	1.31	1.30	0.67
362PLP-5	5/16	5/16	1.77	1.10	0.57
362PLP-6	3/8	3/8	2.09	1.30	0.67



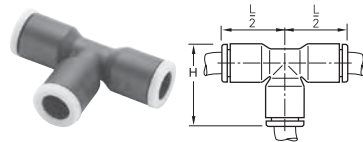
364PLP Unequal Union Tee

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	L/2	H
364PLP-2-4	1/8	1/4	0.71	0.93
364PLP-5/32-4	5/32	1/4	0.71	0.93
364PLP-4-2	1/4	1/8	0.73	0.93
364PLP-4-5/32	1/4	5/32	0.73	0.93
364PLP-4-6	1/4	3/8	0.96	1.32
364PLP-6-4	3/8	1/4	1.00	1.28
364PLP-6-8	3/8	1/2	1.38	1.81
364PLP-8-4	1/2	1/4	1.38	1.81
364PLP-8-6	1/2	3/8	1.38	1.81



362PLP Union Y Connector

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	L	N
362PLP-4M	4	4	17.5	28.5	9.0
362PLP-6M	6	6	21.5	35.0	11.0
362PLP-8M	8	8	28.0	45.0	14.5
362PLP-10M	10	10	33.0	53.0	17.0
362PLP-12M	12	12	39.0	57.0	20.0
362PLP-4M-6M	4	6	17.5	33.0	9.0
362PLP-6M-8M	6	8	22.5	41.0	11.5
362PLP-8M-10M	8	10	28.0	47.0	14.5
362PLP-10M-12M	10	12	33.0	57.0	17.0



364PLP Union Tee

Part No.	Tube Size (mm)	H	L/2
364PLP-3M	3	19.0	14.5
364PLP-4M	4	19.0	14.5
364PLP-6M	6	23.5	18.0
364PLP-8M	8	29.5	23.0
364PLP-10M	10	34.5	26.5
364PLP-12M	12	40.5	31.0
364PLP-14M	14	46.0	35.5

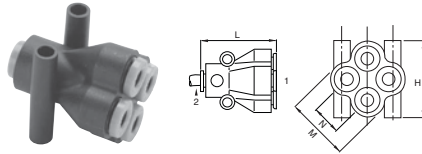
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

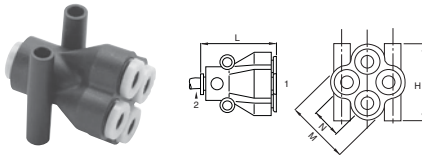
Tubing

N



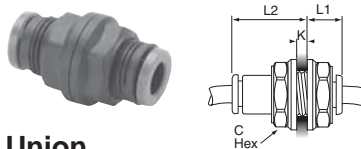
362PLPD Double Y Connector

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	H	L	M	N	Mounting Hole Dia.
362PLPD-5/32	5/32	5/32	1.00	1.20	0.83	0.39	0.15
362PLPD-5/32-4	5/32	1/4	1.00	1.18	0.83	0.39	0.15



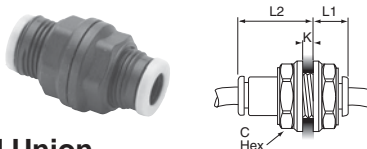
362PLPD Double Y Connector

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	L	M	N	Mounting Hole Dia.
362PLPD-4M	4	4	25.5	30.5	21.0	10.0	3.7
362PLPD-6M	6	6	31.5	37.5	26.5	12.0	3.7
362PLPD-4M-6M	4	6	25.5	30.5	21.0	10.0	3.7
362PLPD-6M-8M	6	8	31.5	38.0	26.5	12.0	3.7



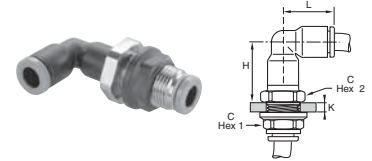
32PLPBH Bulkhead Union

Part No.	Tube Size (In.)	C Hex (mm)	K Max	L1	L2
32PLPBH-2	1/8	13	0.22	0.37	0.61
32PLPBH-5/32	5/32	13	0.22	0.59	0.39
32PLPBH-4	1/4	16	0.35	0.37	0.81
32PLPBH-5	5/16	18	0.57	0.98	0.53
32PLPBH-6	3/8	22	0.57	0.51	1.18
32PLPBH-8	1/2	29	0.81	0.67	1.61



32PLPBH Bulkhead Union

Part No.	Tube Size (mm)	C Hex (mm)	K Max	L1	L2
32PLPBH-4M	4	13	5.5	15.0	10.0
32PLPBH-6M	6	15	8.5	18.0	10.5
32PLPBH-8M	8	18	14.5	25.0	13.5
32PLPBH-10M	10	22	14.5	27.5	15.5
32PLPBH-12M	12	26	18.5	33.0	18.0
32PLPBH-14M	14	29	20.5	37.5	20.5



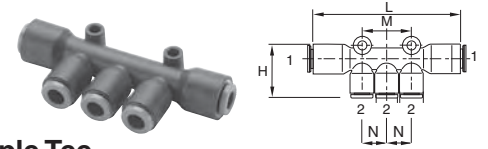
365PLPBH Equal Bulkhead Elbow

Part No.	Tube Size (In.)	C1 Hex	C2 Hex	K Max	H	L
365PLPBH-2	1/8	13	13	0.28	0.71	0.57
365PLPBH-5/32	5/32		13	0.26	0.83	0.67
365PLPBH-4	1/4	18	17	0.32	0.87	0.71
365PLPBH-5	5/16		18	0.31	1.22	0.94
365PLPBH-6	3/8	22	22	0.33	1.08	1.00
365PLPBH-8	1/2	29	27	0.41	1.54	1.38



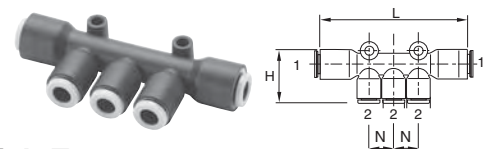
365PLPBH Equal Bulkhead Elbow

Part No.	Tube Size (mm)	C1 Hex	C2 Hex	K Max	H	L
365PLPBH-4M	4	13	13	6.5	21.0	17.0
365PLPBH-6M	6	15	15	7.0	24.5	19.5
365PLPBH-8M	8	18	18	8.0	31.0	24.0
365PLPBH-10M	10	22	22	8.5	36.0	28.0
365PLPBH-12M	12	26	26	8.5	42.0	33.0



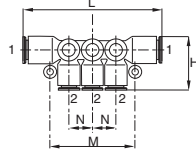
24PLP Multiple Tee

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	H	L	M	N	Mounting Hole Dia.
24PLP-4-5/32	1/4	5/32	0.97	2.81	0.90	0.45	0.17
24PLP-4-4	1/4	1/4	1.22	3.14	1.21	0.61	0.17
24PLP-5-5/32	5/16	5/32	0.96	2.91		0.45	0.17
24PLP-6-4	3/8	1/4	1.34	3.21	1.22	0.61	0.17



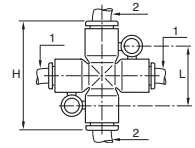
24PLP Multiple Tee

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	L	N	Mounting Hole Dia.
24PLP-6M-4M	6	4	24.5	74	11.5	4.2
24PLP-8M-4M	8	4	24.5	74	11.5	4.2
24PLP-8M-6M	8	6	24.5	74	11.5	4.2
24PLP-10M-6M	10	6	36.0	81	14.5	4.2
24PLP-10M-8M	10	8	36.0	81	14.5	4.2



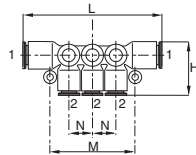
24PLPD Double Multiple Tee

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	H	L	M	N	Mounting Hole Dia.
24PLPD-4-5/32	1/4	5/32	0.73	2.84	1.69	0.45	0.17
24PLPD-4-4	1/4	1/4	0.73	2.84	1.69	0.45	0.17
24PLPD-5-5/32	5/16	5/32	0.77	2.87	1.69	0.45	0.17
24PLPD-6-4	3/8	1/4	0.91	3.31	2.05	0.57	0.17



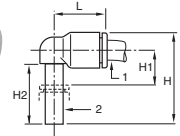
347PLP Unequal Cross

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	L	Mounting Hole Dia.
347PLP-4M-6M	4	6	36	20.0	4.2
347PLP-6M-8M	6	8	46	22.5	4.2
347PLP-4M-6M	4	6	36	20.0	4.2
374PLP-6M-8M	6	8	46	22.5	4.2



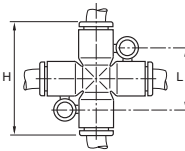
24PLPD Double Multiple Tee

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	L	M	N	Mounting Hole Dia.
24PLPD-6M-4M	6	4	18.5	72.0	43.0	11.5	4.2
24PLPD-8M-4M	8	4	18.5	73.0	43.0	11.5	4.2
24PLPD-8M-6M	8	6	18.5	73.0	43.0	11.5	4.2
24PLPD-10M-6M	10	6	23.0	84.0	52.0	14.5	4.2
24PLPD-10M-8M	10	8	23.5	84.0	52.0	14.5	4.2



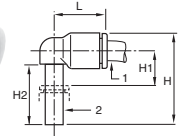
369PLPSP Plug-In Elbow

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	H	H1	H2	L
369PLPSP-2	1/8	1/8	0.92	0.31	0.64	0.57
369PLPSP-5/32	5/32	5/32	0.91	0.24	0.61	0.55
369PLPSP-5/32-4	5/32	1/4	1.08	0.30	0.71	0.71
369PLPSP-4	1/4	1/4	1.20	0.43	0.83	0.73
369PLPSP-4-6	1/4	3/8	1.52	0.35	0.96	0.98
369PLPSP-5	5/16	5/16	1.32	0.32	0.85	0.91
369PLPSP-6	3/8	3/8	1.52	0.35	0.96	1.02
369PLPSP-8	1/2	1/2	2.00	0.51	1.12	1.38



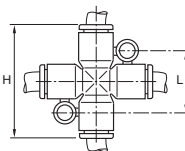
347PLP Equal Cross

Part No.	Tube Size (In.)	H	L	Mounting Hole Dia.
347PLP-5/32	5/32	1.42	0.79	0.17
347PLP-4	1/4	1.40	0.79	0.17
347PLP-5	5/16	1.81	0.89	0.17



369PLPSP Plug-In Elbow

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	H1	H2	L
369PLPSP-4M	4	4	23.0	6.0	15.5	14.0
369PLPSP-6M	6	6	26.5	7.0	17.0	16.0
369PLPSP-8M	8	8	33.5	8.0	21.5	23.0
369PLPSP-10M	10	10	39.0	9.5	24.5	23.5
369PLPSP-12M	12	12	44.5	10.0	27.5	31.0
369PLPSP-4M-6M	4	6	26.5	7.0	17.0	16.0
369PLPSP-6M-4M	6	4	24.5	7.0	15.5	16.0
369PLPSP-6M-8M	6	8	33.5	8.0	21.5	22.0
369PLPSP-8M-10M	8	10	39.0	8.5	24.5	26.5
369PLPSP-10M-12M	10	12	44.5	10.0	27.5	31.0



347PLP Equal Cross

Part No.	Tube Size (mm)	H	L	Mounting Hole Dia.
347PLP-4M	4	36	20.0	4.2
347PLP-6M	6	36	20.0	4.2
347PLP-8M	8	46	22.5	4.2

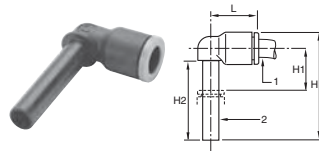
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

N



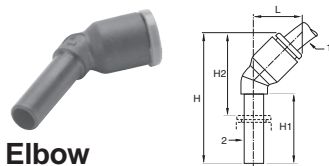
369PLPSPX Extended Plug-In Elbow

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	H	H1	H2	L
369PLPSPX-2	1/8	1/8	1.26	0.65	0.98	0.57
369PLPSPX-5/32	5/32	5/32	1.28	0.61	0.98	0.55
369PLPSPX-4	1/4	1/4	1.56	0.77	1.18	0.71
369PLPSPX-5	5/16	5/16	1.93	0.93	1.46	0.91
369PLPSPX-6	3/8	3/8	2.19	1.02	1.63	1.02



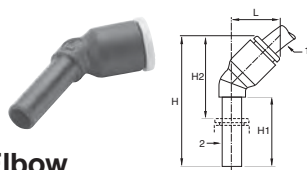
369PLPXSP Extended Plug-In Elbow

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	H1	H2	L
369PLPXSP-4M	4	4	32.5	15.5	25.0	14.0
369PLPXSP-6M	6	6	38.5	19.0	29.0	16.0
369PLPXSP-8M	8	8	49.0	23.5	37.0	23.0
369PLPXSP-10M	10	10	56.0	26.5	41.5	26.5
369PLPXSP-12M	12	12	62.5	28.0	45.5	31.0
369PLPXSP-4M-6M	4	6	38.5	19.0	29.0	16.0
369PLPXSP-6M-8M	6	8	49.0	23.5	37.0	23.0
369PLPXSP-8M-10M	8	10	56.0	26.5	41.5	26.5
369PLPXSP-10M-12M	10	12	62.5	28.0	45.5	31.0



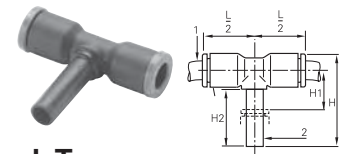
379PLPSP 45° Plug-In Elbow

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	H	H1	H2	L
379PLPSP-2	1/8	1/8	1.14	0.59	0.69	0.47
379PLPSP-5/32	5/32	5/32	1.32	0.75	0.83	0.51
379PLPSP-4	1/4	1/4	1.44	0.71	0.87	0.57
379PLPSP-5	5/16	5/16	1.73	0.85	1.00	0.77
379PLPSP-6	3/8	3/8	2.00	0.96	1.16	0.91



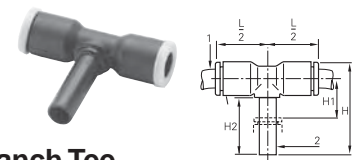
379PLPSP 45° Plug-In Elbow

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	H1	H2	L
379PLPSP-4M	4	4	33.5	19.0	21.0	13.0
379PLPSP-6M	6	6	39.0	21.0	25.0	14.5
379PLPSP-8M	8	8	44.0	21.5	25.5	19.5
379PLPSP-10M	10	10	53.0	27.0	32.5	23.0
379PLPSP-12M	12	12	58.5	27.5	34.0	26.5



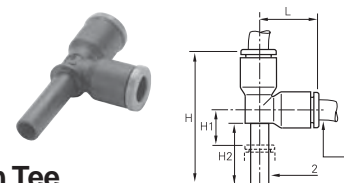
372PLPSP Plug-In Branch Tee

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	H	H1	H2	L/2
372PLPSP-2	1/8	1/8	0.95	0.26	0.59	0.57
372PLPSP-5/32	5/32	5/32	0.91	0.24	0.61	0.57
372PLPSP-4	1/4	1/4	0.98	0.43	0.77	0.73
372PLPSP-5	5/16	5/16	1.32	0.32	0.85	0.91
372PLPSP-6	3/8	3/8	1.61	0.35	0.96	0.98
372PLPSP-8	1/2	1/2	2.01	0.51	1.12	1.38



372PLPSP Plug-In Branch Tee

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	H1	H2	L/2
372PLPSP-4M	4	4	23.0	6.0	15.5	14.5
372PLPSP-6M	6	6	26.5	7.0	17.0	16.0
372PLPSP-8M	8	8	33.5	8.0	21.5	23.0
372PLPSP-10M	10	10	39.0	9.5	24.5	26.5
372PLPSP-12M	12	12	44.5	10.0	27.5	31.0
372PLPSP-4M-6M	4	6	26.5	7.0	17.0	16.0
372PLPSP-6M-8M	6	8	33.5	8.0	21.5	23.0
372PLPSP-8M-10M	8	10	39.0	9.5	24.5	26.5
372PLPSP-10M-12M	10	12	44.5	10.0	27.5	31.0



371PLPSP Plug-In Run Tee

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	H	H1	H2	L
371PLPSP-5/32	5/32	5/32	1.30	0.24	0.61	0.57
371PLPSP-4	1/4	1/4	1.69	0.43	0.83	0.73
371PLPSP-5	5/16	5/16	1.93	0.32	0.85	0.91
371PLPSP-6	3/8	3/8	2.23	0.33	0.96	1.00
371PLPSP-8	1/2	1/2	2.86	0.51	1.12	1.38

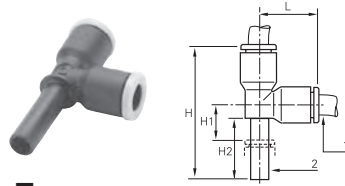
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

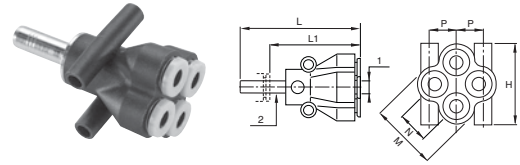
Tubing

N



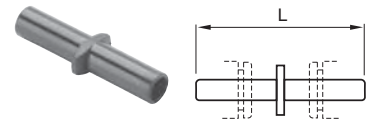
371PLPSP Plug-In Run Tee

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	H1	H2	L
371PLPSP-4M	4	4	33.0	6.0	15.5	14.5
371PLPSP-6M	6	6	38.5	7.0	17.0	17.5
371PLPSP-8M	8	8	49.0	8.0	21.5	23.0
371PLPSP-10M	10	10	57.0	10.5	24.5	26.5
371PLPSP-12M	12	12	65.5	10.5	27.5	31.0
371PLPSP-4M-6M	4	6	10.5	7.0	17.0	17.5
371PLPSP-6M-8M	6	8	13.5	8.0	21.5	23.0
371PLPSP-8M-10M	8	10	16.0	10.5	24.5	26.5
371PLPSP-10M-12M	10	12	19.0	10.5	27.5	31.0



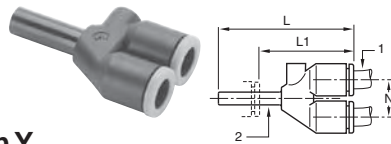
362PLPDSP Plug-In Multiple Y

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	H	L	L1	M	N
362PLPDSP-6M-4M	6	4	25.5	45.0	31.0	21.0	10.0
362PLPDSP-8M-4M	8	4	25.5	49.5	31.0	21.0	10.0
362PLPDSP-8M-6M	8	6	31.5	59.5	41.0	26.5	12.0



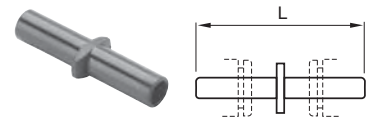
63PLP Double Male Union

Part No.	Tube Size (In.)	L
63PLP-5/32	5/32	1.36
63PLP-4	1/4	1.52
63PLP-5	5/16	1.61
63PLP-6	3/8	2.03
63PLP-8	1/2	2.13



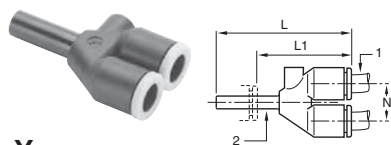
362PLPSP Plug-In Y

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	L	L1	N
362PLPSP-2	1/8	1/8	1.36	1.00	0.35
362PLPSP-5/32	5/32	5/32	1.34	0.85	0.35
362PLPSP-4	1/4	1/4	1.60	1.02	0.45
362PLPSP-5	5/16	5/16	2.00	1.26	0.57
362PLPSP-6	3/8	3/8	2.23	1.42	0.67



63PLP Double Male Union

Part No.	Tube Size (mm)	L
63PLP4M	4	34 1/2
63PLP6M	6	38 1/2
63PLP8M	8	41
63PLP10M	10	51 1/2
63PLP12M	12	60
63PLP14M	14	69 1/2



362PLPSP Plug-In Y

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	L	L1	N
362PLPSP-4M	4	4	34.0	21.5	9.0
362PLPSP-6M	6	6	39.5	25.5	11.0
362PLPSP-8M	8	8	50.5	32.0	14.5
362PLPSP-10M	10	10	57.5	36.0	17.0
362PLPSP-12M	12	12	66.0	41.0	20.0
362PLPSP-4M-6M	4	6	35.5	21.5	9.0
362PLPSP-6M-8M	6	8	44.0	25.5	11.0
362PLPSP-8M-10M	8	10	53.5	32.0	14.5
362PLPSP-10M-12M	10	12	60.0	35.0	17.0

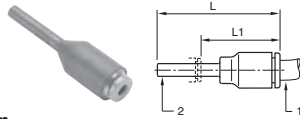
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

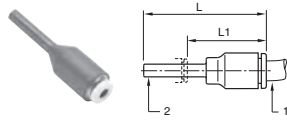
Tubing

N



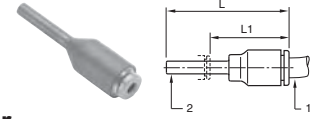
67PLP Tube End Reducer

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	L	L1
67PLP-2-5/32	1/8	5/32	1.79	1.32
67PLP-2-3	1/8	3/16	1.79	1.14
67PLP-2-4	1/8	1/4	1.79	1.22
67PLP-5/32-3	5/32	3/16	1.48	.83
67PLP-5/32-4	5/32	1/4	1.48	.91
67PLP-5/32-5	5/32	5/16	1.48	.75
67PLP-5/32-6	5/32	3/8	1.61	.81
67PLP-3-5	3/16	5/16	1.79	1.06
67PLP-3-4	3/16	1/4	1.79	1.22
67PLP-4-5	1/4	5/16	1.61	.89
67PLP-4-6	1/4	3/8	1.61	.81
67PLP-4-8	1/4	1/2	1.97	.98
67PLP-5-6	5/16	3/8	1.93	1.12
67PLP-5-8	5/16	1/2	2.01	1.02
67PLP-6-8	3/8	1/2	2.01	1.04



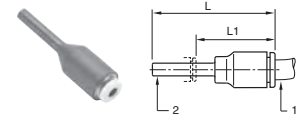
67PLP Tube Reducer

Part No.	1 Tube Size (mm)	2 Tube Size (mm)	L	L1
67PLP-6M-4M	6	4	37.5	23.5
67PLP-8M-4M	8	4	37.5	19.0
67PLP-8M-6M	8	6	36.0	20.5
67PLP-10M-4M	10	4	44.0	22.5
67PLP-10M-6M	10	6	38.0	17.5
67PLP-10M-8M	10	8	49.0	28.5
67PLP-12M-10M	12	10	56.5	33.5
67PLP-12M-6M	12	6	46.0	23.0
67PLP-12M-8M	12	8	49.0	24.5
67PLP-14M-10M	14	10	58.5	33.5
67PLP-14M-12M	14	12	58.5	33.5
67PLP-14M-6M	14	6	48.0	23.0
67PLP-14M-8M	14	8	48.0	23.0



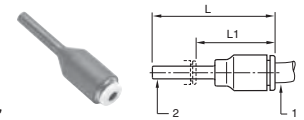
32PLPSP Tube Expander

Part No.	1 Tube Size (In.)	2 Tube Size (In.)	L	L1
32PLPSP-4-2	1/4	1/8	1.61	1.16
32PLPSP-4-6M	1/4	6M	1.75	1.02
32PLPSP-4-5/32	1/4	5/32	1.61	1.14
32PLPSP-4-3	1/4	3/16	1.61	1.00
32PLPSP-6-4	3/8	1/4	1.58	1.00



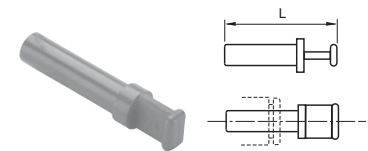
32PLPSP Tube Expander

Part No.	Tube Size (mm)	Tube Size (mm)	L	L1
32PLPSP-6M-4M	6	4	35.0	23.0
32PLPSP-8M-6M	8	6	45.0	31.5
32PLPSP-10M-8M	10	8	42.5	21.0
32PLPSP-12M-10M	12	10	49.0	24.5



32PLPSP Tube Converter

Part No.	1 Tube Size (mm)	2 Tube Size (In.)	L	L1
32PLPSP-4M-2	4M	1/8	1.61	1.16
32PLPSP-8M-4	8M	1/4	1.58	1.00



639PLP Plug

Part No.	Tube Size (In.)	L
639PLP-2	1/8	1.30
639PLP-5/32	5/32	1.18
639PLP-3	3/16	1.36
639PLP-4	1/4	1.44
639PLP-5	5/16	1.38
639PLP-6	3/8	1.67
639PLP-8	1/2	1.91

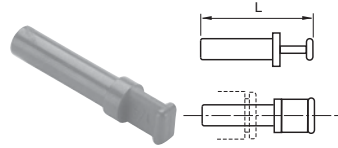
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

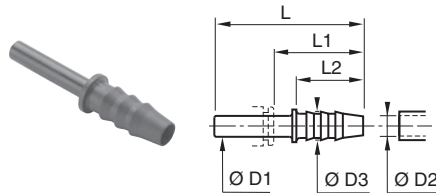
Tubing

N



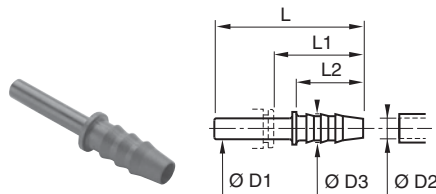
639PLP Plug

Part No.	Tube Size (mm)	L
639PLP-3M	3	25
639PLP-4M	4	30
639PLP-6M	6	33
639PLP-8M	8	33
639PLP-10M	10	42
639PLP-12M	12	45
639PLP-14M	14	49



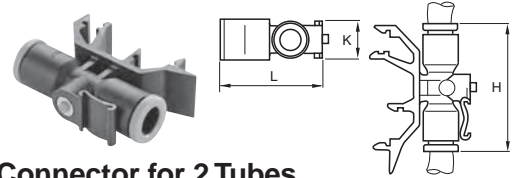
322PLPSP Barbed Connector

Part No.	OD 1	OD 2	OD 3	L	L1	L2
322PLPSP-2-5/32	5/32	0.12	0.20	1.46	0.98	0.67
322PLPSP-5M-5/32	5/32	0.20	0.28	1.46	0.98	0.67
322PLPSP-3-4	1/4	3/16		1.65	1.00	
322PLPSP-4-5	5/16	0.25	0.34	1.55	0.83	0.67
322PLPSP-5-5	3/8	0.32	0.39	1.75	1.02	0.87
322PLPSP-5-6	3/8	0.32	0.39	1.97	1.16	0.87



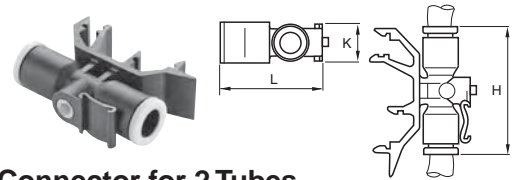
322PLPSP Barbed Connector

Part No.	OD 1	OD 2	OD 3	L	L1	L2
322PLPSP-3M-4M	4	3.2	5.0	37.0	25.0	17.0
322PLPSP-5M-4M	4	5.0	7.0	37.0	25.0	17.0
322PLPSP-5M-6M	6	5.0	7.0	39.0	25.0	17.0
322PLPSP-6M-8M	8	6.3	8.5	39.5	21.0	17.0
322PLPSP-8M-8M	8	8.0	10.0	44.5	26.0	22.0
322PLPSP-6M-10M	10	6.3	8.0	45.0	24.5	17.0
322PLPSP-8M-10M	10	8.0	10.0	50.0	29.5	22.0
322PLPSP-8M-12M	12	8.0	10.0	50.0	26.0	22.0
322PLPSP-1012M	12	10.0	12.0	48.5	25.5	22.5
322PLPSP-1212M	12	12.5	14.5	57.0	34.0	22.5
322PLPSP-1214M	14	12.5	14.5	59.5	34.5	22.5
322PLPSP-1414M	14	14.0	16.0	59.5	34.5	22.5



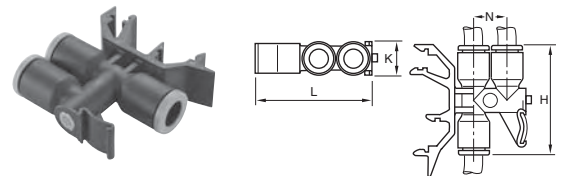
32PLPRC Connector for 2 Tubes

Part No.	Tube Size (In.)	H	K	L
32PLPRC-5/32	5/32	1.44	0.47	1.18
32PLPRC-4	1/4	1.44	0.47	1.18
32PLPRC-5	5/16	1.81	0.51	1.28



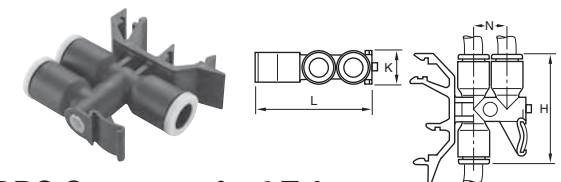
32PLPRC Connector for 2 Tubes

Part No.	Tube Size (mm)	H	K	L
32PLPRC-4M	4	36.5	11.0	39.5
32PLPRC-6M	6	36.5	11.0	39.5
32PLPRC-8M	8	46.0	13.0	44.5



32PLPDRC Connector for 3 Tubes

Part No.	Tube Size (In.)	H	K	L	N
32PLPDRC-5/32	5/32	1.44	0.43	1.56	0.45
32PLPDRC-5	5/16	1.81	0.51	1.75	0.57



32PLPDRC Connector for 3 Tubes

Part No.	Tube Size (mm)	H	K	L	N
32PLPDRC-4M	4	36.5	11.0	39.5	
32PLPDRC-6M	6	36.5	11.0	39.5	
32PLPDRC-8M	8	46.0	13.0	14.5	

Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

N











Pipe Fittings
& Adapters

Prestolok
Metal

Prestolok
Composite

Tubing

N

Tube to Male NPTF	W68PLP Male Connector  Page N30	W68PLPR Male Connector Round Body  Page N31	W68PW Male Connector  Page N36	W169PLP Male Elbow Swivel  Page N33	W169PLPNS Male Elbow  Page N33
	W169PW Male Elbow Swivel  Page N37	W171PLP Male Run Tee Swivel  Page N34	W171PW Male Run Tee Swivel  Page N37	W172PLP Male Branch Tee Swivel  Page N35	W172PW Male Branch Tee Swivel  Page N37
Tube to Tube	62PLP Union  Page N29	62PW Union  Page N36	164PLP Union Tee  Page N32	164PW Union Tee  Page N37	165PLP Union Elbow  Page N32
	165PW Union Elbow  Page N37	Tube to Female NPTF	66PLP Female Connector  Page N30	66PW Female Connector  Page N36	
Bulkhead Unions	62PLPBH Union Bulkhead  Page N29		66PLPBH Female Bulkhead  Page N29	62PWBH Union Bulkhead  Page N36	66PWBH Female Bulkhead  Page N36
	Tube to Male BSPP	PLHBF4-B Male Connector  Page N31	Auxiliary Components	DB Dust/Weld Spatter Boot  Page N36	
Metric Tube to Male NPTF		FPB Male Connector  Page N31		C6PB Male Elbow  Page N33	Metric Tube to Metric Tube
	EPB Union Elbow  Page N32	Metric Bulkhead Unions	WBMPB Mixed Bulkhead Union  Page N29	WPB Union Bulkhead  Page N29	








Pipe Fittings
& Adapters

Prestolok
Metal

Prestolok
Composite

Tubing

N

Metric Tube to Female BSPP	G4PB Female Connector  Page N30	WG4PB Union Female Bulkhead  Page N30	Metric Tube to Male BSPP	C64PB Male Elbow Swivel  Page N33	C64SPB Male Elbow Swivel  Page N34
	F4PB Male Connector  Page N31	R64PB Male Run Tee Swivel  Page N34		S64PB Male Branch Tee Swivel  Page N35	Metric Tube to Metric Straight Thread
F28PB Male Connector  Page N31	F8PB Male Connector  Page N31	R68PB Male Run Tee Swivel  Page N34	S68PB Male Branch Tee Swivel  Page N35		
Metric Auxiliary Components	TRPB Tube End Reducer  Page N35	FNPB Plug  Page N36	TEPB Tube End Expander  Page N35		

Pipe Fittings & Adapters

Prestolok Metal

Presolok Composite

Tubing

N

Features

Materials of Construction	
Nickel Plated Bodies:	Nickel plated brass
O-ring:	Nitrile (other compounds available on request)
Release Button:	Polyacetal
Grab Ring:	Stainless Steel
Note:	For brass body Prestolok replace PLP with PLN

Nomenclature	
Example: W68PLP-4-2	Attribute:
W	White Arcylic Thread Sealant
68	Male Connector
PIP	Prestolok
4	1/4" (4/16) Tube O.D.
2	1/8" (2/16) Pipe Thread

Specifications	
Pressure Range:	Up to 300 PSI depending on tubing
Temperature Range:	0° to +200°F
Note:	Vacuum applications are dependent upon temperature and type of tubing used.

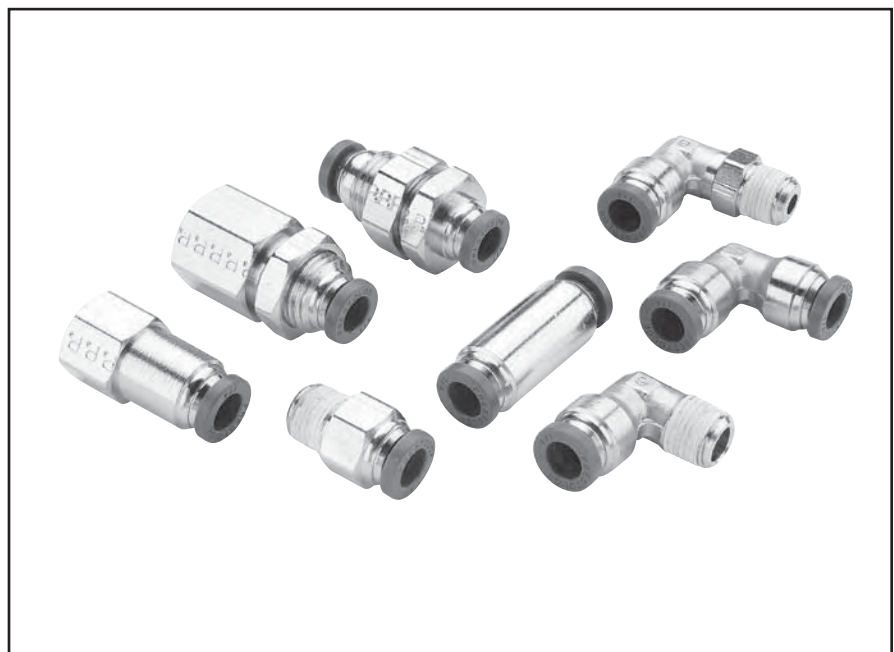
Tubing sizes	
Tube O.D.:	1/8, 3/16, 5/32, 1/4, 5/16, 3/8, 1/2
Tube O.D. (mm):	4,6,8,10,12,14

Recommended Tubing

Prestolok nickel plated and composite fittings are designed to be used with the following Parker Hannifin Parflex Division tubing.

Tubing Series	Tubing Material
E	Linear Low Density Polyethylene
PP	Polypropylene
N	Plasticized Polyamide (Nylon)
NR	Unplasticized Polyamide (Rigid Nylon)
U	Polyurethane 90 Durometer Shore A
HU	Polyurethane 95 Durometer Shore A

Other materials for Prestolok inch sized nickel plated fittings: Polyurethane 85 Durometer Shore A



A compact one-piece push-to-connect fitting. Designed for low pressure circuits where assembly, disassembly and reassembly is important. Stainless steel grab ring grips the tubing to provide retention. Swivels are featured on all male pipe threaded shapes for installation in tight places and for precise positioning. Prestolok should not be used for live swivel applications. Prestolok fittings come with a pre-applied white acrylic sealant.

CAUTION: All current manufacturers of 85A PU tubing do not approve the use of push-to-connect fittings with their product.

Testing has shown acceptable use with certain O.D – I.D. combinations. Applications and service conditions vary and therefore the use of a tube support may be required for any 85A PU tubing.

The following commercially available O.D. – I.D. 85A tubing sizes require the use of a tube support regardless of application.

5/32" – 3/32"	3/16" – 1/8"	1/4" - .170"	1/4" – 3/16"
5/16" – 1/4"	3/8" – 5/16"	1/2" – 3/8"	

Assembly Instructions

1. Cut thermoplastic tubing squarely, using Parker Tube Cutter PTC-001. Be certain the port or mating part is clean and free of debris.
2. Insert tubing into fitting until it bottoms. A slight twisting motion will ease the insertion. Pull on tubing to verify it is properly retained in the fitting.
3. To disassemble, simply push the release button against the body and remove tubing.
4. It is recommended to trim the tubing after every disassembly to insure a proper seal.

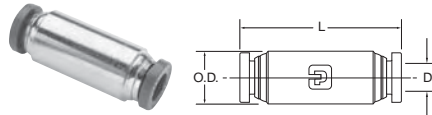
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

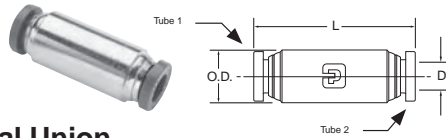
Tubing

N



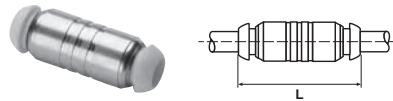
62PLP Union

Part No.	Tube Size (In.)	O.D.	L	Flow Dia. D
62PLP-2	1/8	.375	1.40	.094
62PLP-3	3/16	.437	1.41	.156
62PLP-5/32	5/32	.375	1.41	.125
62PLP-4	1/4	.500	1.43	.188
62PLP-5	5/16	.562	1.65	.250
62PLP-6	3/8	.625	1.66	.312
62PLP-8	1/2	.750	1.82	.375



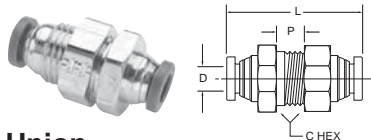
62PLP Unequal Union

Part No.	Tube 1 Size (In.)	Tube 2 Size (In.)	O.D.	L	Flow Dia. D
62PLP-5/32-2	5/32	1/8	.375	1.41	.094
62PLP-4-2	1/4	1/8	.500	1.43	.094
62PLP-4-5/32	1/4	5/32	.500	1.43	.125
62PLP-4-6	1/4	3/8	.625	1.66	.188
62PLP-6-8	3/8	1/2	.750	1.82	.312



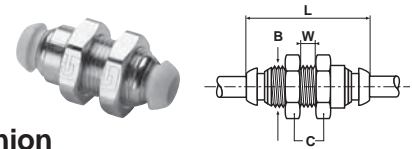
HPB Equal Union

Part No.	Tube Size (mm)	L
HPB4	4	33.0
HPB5	5	34.5
HPB6	6	36.0
HPB8	8	38.0
HPB10	10	48.0
HPB12	12	48.0
HPB14	14	54.0



62PLPBH Bulkhead Union

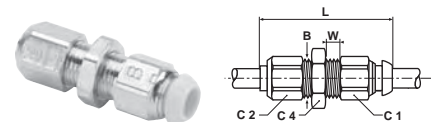
Part No.	Tube Size (In.)	Bulkhead Hole Dia. B	C Hex	P Max.	I	D
62PLPBH-2	1/8	7/16	9/16	.39	1.40	.094
62PLPBH-5/32	5/32	7/16	9/16	.39	1.41	.125
62PLPBH-4	1/4	9/16	11/16	.29	1.43	.188
62PLPBH-5	5/16	5/8	3/4	.60	1.65	.250
62PLPBH-6	3/8	3/4	7/8	.54	1.66	.312
62PLPBH-8	1/2	7/8	1	.66	2.04	.375



WPB Bulkhead Union

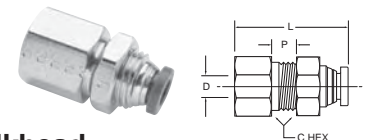
Part No.	Tube Size (mm)	B-mm Thread	C Hex	L	W	Bulkhead Hole Dia.
WPB4	4	M11x0.75	16	33	6	11mm
WPB6	6	M13x1	19	35	6	13mm
WPB8	8	M15x1.25	22	36	6	16mm
WPB10	10	M18x1	22	43	8	18mm
WPB12	12	M23x1.5	27	46	10	23mm
WPB14	14	M24x1.5	30	52	10	24mm

Jam nut is supplied loose in box



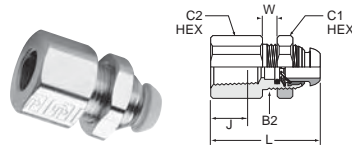
WBMPB Mixed Bulkhead Union

Part No.	Tube 1 Size (mm)	Tube 2 Size (mm)	B-mm Thread	C1	C2	C4	L	W	Bulkhead Hole Dia.
WBMPB4	4	4	M8x1	10	10	12	34	5	8mm
WBMPB6	6	6	M10x1	12	10	12	37	5	10mm
WBMPB8	8	8	M12x1	14	14	16	39	5	12mm
WBMPB10	10	10	M14x1	17	17	19	45	5	14mm
WBMPB12	12	12	M16x1	22	19	22	49	5	16mm
WBMPB14	14	14	M18x1	24	22	22	52	7	18mm



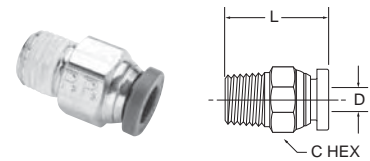
66PLPBH Female Bulkhead

Part No.	Tube Size (In.)	Pipe Thd (NPTF)	C Hex	P Max.	L	Flow Dia. D	Bkhd Hole Dia.
66PLPBH-5/32-4	5/32	1/4	11/16	.19	1.39	.125	1/2
66PLPBH-4-4	1/4	1/4	11/16	.24	1.35	.188	9/16
66PLPBH-6-6	3/8	3/8	1	.22	1.47	.312	7/8
66PLPBH-8-6	1/2	3/8	1 1/4	.35	1.56	.344	1



WG4PB Bulkhead Union Female BSPP

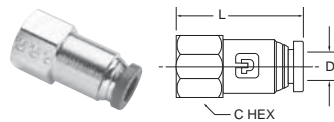
Part No.	Tube Size (mm)	BSPP	B2	C1 Hex	C2 Hex	J	L	W
WG4PB4-1/8	4	G1/8	M11x0.75	14	14	8	25.0	6
WG4PB6-1/8	6	G1/8	M13x1	17	17	8	25.0	6
WG4PB6-1/4	6	G1/4	M13x1	17	19	12	29.5	6
WG4PB8-1/8	8	G1/8	M15x1.25	19	17	8	25.0	6
WG4PB8-1/4	8	G1/4	M15x1.25	19	19	12	30.0	6
WG4PB10-3/8	10	G3/8	M18x1	22	22	12	34.0	8
WG4PB12-3/8	12	G3/8	M23x1.5	27	24	12	35.0	10
WG4PB12-1/2	12	G1/2	M23x1.5	27	27	14	40.0	10



W68PLP Male Connector

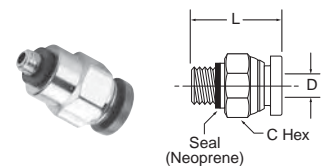
Part No.	Tube Size (In.)	Pipe Thd (NPTF)	C Hex	I	Flow Dia. D
W68PLP-2-1	1/8	1/16	3/8	.79	.094
W68PLP-2-2	1/8	1/8	7/16	.79	.094
W68PLP-2-4	1/8	1/4	9/16	1.02	.094
W68PLP-3-2	3/16	1/8	7/16	.85	.156
W68PLP-3-4	3/16	1/4	9/16	1.01	.156
W68PLP-5/32-1	5/32	1/16		.88	.940
W68PLP-5/32-2	5/32	1/8	7/16	.80	.125
W68PLP-5/32-4	5/32	1/4	9/16	1.03	.125
W68PLP-4-1	1/4	1/16	1/2	1.07	.141
W68PLP-4-2	1/4	1/8	1/2	.89	.188
W68PLP-4-4	1/4	1/4	9/16	1.00	.188
W68PLP-4-6	1/4	3/8	3/4	1.04	.188
W68PLP-5-2	5/16	1/8	9/16	1.18	.250
W68PLP-5-4	5/16	1/4	9/16	1.04	.250
W68PLP-5-6	5/16	3/8	11/16	1.04	.250
W68PLP-6-2	3/8	1/8	5/8	1.21	.250
W68PLP-6-4	3/8	1/4	5/8	1.08	.312
W68PLP-6-6	3/8	3/8	11/16	1.02	.312
W68PLP-6-8	3/8	1/2	7/8	1.28	.312
W68PLP-8-4	1/2	1/4	13/16	1.44	.344
W68PLP-8-6	1/2	3/8	13/16	1.24	.344
W68PLP-8-8	1/2	1/2	7/8	1.35	.375
68PLP-5/32-4LT*	5/32	1/4-28	7/16	.88	.093

*SAE-LT Threads



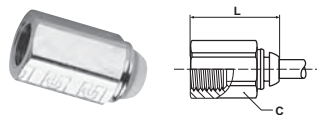
66PLP Female Connector

Part No.	Tube Size (In.)	Pipe Thread (NPTF)	C Hex	L	Flow Dia. D
66PLP-2-2	1/8	1/8	9/16	1.17	.094
66PLP-2-4	1/8	1/4	11/16	1.34	.094
66PLP-3-2	3/16	1/8	9/16	1.13	.156
66PLP-5/32-2	5/32	1/8	9/16	1.17	.125
66PLP-5/32-4	5/32	1/4	11/16	1.38	.125
66PLP-4-2	1/4	1/8	9/16	1.17	.188
66PLP-4-4	1/4	1/4	11/16	1.38	.188
66PLP-5-2	5/16	1/8	9/16	1.25	.250
66PLP-5-4	5/16	1/4	11/16	1.45	.250
66PLP-6-4	3/8	1/4	11/16	1.46	.312
66PLP-6-6	3/8	3/8	13/16	1.51	.312



68PLP-X-0 Male Connector

Part No.	Tube Size (In.)	Pipe Thread (NPTF)	C Hex	I	Flow Dia. D
68PLP-2-0	1/8	10x32	3/8	.92	.094
68PLP-5/32-0	5/32	10x32			
68PLP-4-0	1/4	10x32	1/2	.96	.094



G4PB Female Connector BSPP

Part No.	Tube Size (mm)	BSPP	C Hex	L
G4PB4-1/8	4	1/8	14	26.0
G4PB6-1/8	6	1/8	14	27.5
G4PB6-1/4	6	1/4	17	33.0
G4PB8-1/8	8	1/8	17	29.0
G4PB8-1/4	8	1/4	17	33.0

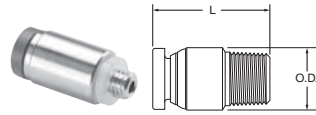
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

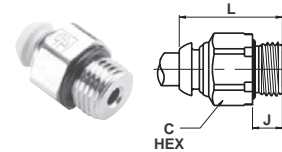
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68PLPR Round Body Male Connector

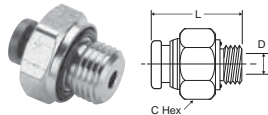
Part No.	Tube Size (In.)	Thread Size NPTF	Internal Hex Broach	Body Dia. O.D.	L	Flow Dia.
68PLPR-2-0*	1/8	10-32	3/32	3/8"	.89	.094
68PLPR-5/32-0*	5/32	10-32	3/32	3/8"	.91	.094
68PLPR-4-0*	1/4	10-32	3/32	1/2"	.95	.094
W68PLPR-5/32-1	5/32	1/16	1/8	7/16"	.87	.125
W68PLPR-5/32-2	5/32	1/8	1/8	7/16"	.79	.125
W68PLPR-4-1	1/4	1/16	5/32	1/2"	1.06	.156
W68PLPR-4-2	1/4	1/8	3/16	1/2"	.88	.188
W68PLPR-4-4	1/4	1/4	3/16	5/8"	.99	.188

*10-32 seal is neoprene



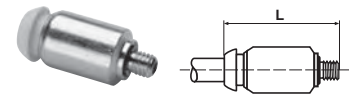
F4PB Compact Male Connector BSPP

Part No.	Tube Size (mm)	BSPP	C Hex	J	L
F4PB4-1/8	4	1/8	13	4.7	19.9
F4PB4-1/4	4	1/4	16	6.0	20.3
F4PB6-1/8	6	1/8	13	4.7	23.4
F4PB6-1/4	6	1/4	16	6.0	22.2
F4PB8-1/4	8	1/4	16	6.0	23.8
F4PB8-1/8	8	1/8	14	4.7	25.1
F4PB8-3/8	8	3/8	20	6.5	23.5
F4PB10-1/4	10	1/4	17	6.0	31.3
F4PB10-3/8	10	3/8	20	6.5	26.8
F4PB10-1/2	10	1/2	24	7.5	26.1
F4PB12-1/4	12	1/4	20	6.0	31.9
F4PB12-3/8	12	3/8	20	6.5	31.8
F4PB12-1/2	12	1/2	24	7.5	27.8
F4PB14-3/8	14	3/8	22	6.5	35.0
F4PB14-1/2	14	1/2	24	7.5	30.0



PLPHBF4-B Male Connector BSPP

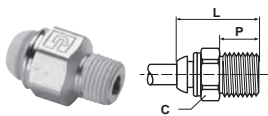
Part No.	Tube Size (In.)	Pipe Thd BSPP	C Hex	I	Flow Dia. D
3-1/8PLPHBF4-B	3/16	1/8-28	11/16	.96	.156
3-1/4PLPHBF4-B	3/16	1/4-19	3/4	.97	.156
4-1/8PLPHBF4-B	1/4	1/8-28	11/16	1.13	.188
4-1/4PLPHBF4-B	1/4	1/4-19	3/4	1.13	.188
4-3/8PLPHBF4-B	1/4	3/8-19	7/8	1.13	.188
6-1/4PLPHBF4-B	3/8	1/4-19	3/4	1.26	.256
6-3/8PLPHBF4-B	3/8	3/8-19	7/8	1.26	.312
6-1/2PLPHBF4-B	3/8	1/2-14	1-1/16	1.26	.312
8-3/8PLPHBF4-B	1/2	3/8-19	7/8	1.41	.452
8-1/2PLPHBF4-B	1/2	1/2-14	1-1/16	1.37	.452



F28PB Male Connector Metric Straight Thread

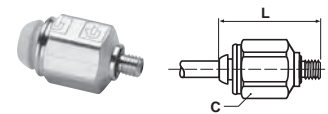
Part No.	Tube Size (mm)	Thread (mm)	L
F28PB4M3	4	M3x0.5	24
F28PB4M5	4	M5x0.8	25
F28PB6M5	6	M5x0.8	25

This fitting has been designed for use where space is at a premium. It is assembled using the internal hexagon and an allen key.



FPB Male Connector NPT

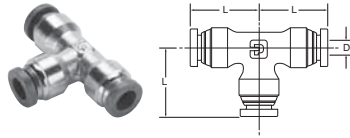
Part No.	Tube Size (mm)	NPT	C Hex	L	P	Int. Hex
W68PLP-5/32-2	4	1/8-27	7/16"	21.7	9.7	-
W68PLP-5/32-4	4	1/4-18	9/16"	28.1	14.2	-
FPB6-1/8	6	1/8-27	14	26.0	10.1	4
FPB6-1/4	6	1/4-18	14	28.5	14.6	4
FPB10-1/4	10	1/4-18	19	40.0	14.6	8
FPB10-3/8	10	3/8-18	19	34.0	14.6	8
FPB12-3/8	12	3/8-18	22	36.5	14.6	10



F8PB Male Connector Metric Straight Thread

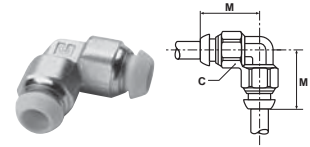
Part No.	Tube Size (mm)	Thread (mm)	C Hex	L
F8PB4M5	4	M5x0.8	10	26.6
F8PB4M10	4	M10x1	14	24.0
F8PB6M5	6	M5x0.8	12	27.8
F8PB6M10	6	M10x1	14	28.0
F8PB6M12	6	M12x1.5	17	23.5
F8PB8M12	8	M12x1.5	17	27.0
F8PB8M16	8	M16x1.5	22	28.0
F8PB8M22	8	M22x1.5	27	30.0





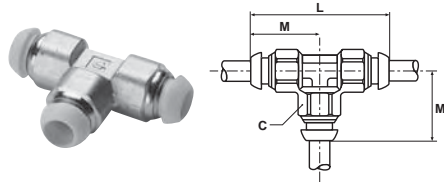
164PLP Union Tee

Part No.	Tube Size (In.)	L	Flow Dia. D
164PLP-2	1/8	.74	.094
164PLP-3	3/16	.82	.156
164PLP-5/32	5/32	.77	.125
164PLP-4	1/4	.85	.188
164PLP-5	5/16	.97	.250
164PLP-6	3/8	1.01	.250
164PLP-8	1/2	1.15	.375



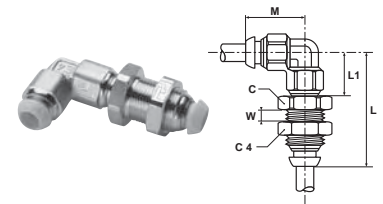
EPB 90° Union Elbow

Part No.	Tube Size (mm)	C Hex	M
EPB4	4	10	18.0
EPB5	5	12	20.5
EPB6	6	12	20.0
EPB8	8	14	22.0
EPB10	10	17	28.0
EPB12	12	22	30.0
EPB14	14	25	35.0



JPB Union Tee

Part No.	Tube Size (mm)	C	L	M
JPB4	4	10	36	18
JPB5	5	12	41	21
JPB6	6	12	40	20
JPB8	8	14	44	22
JPB10	10	17	56	28
JPB12	12	22	60	30
JPB14	14	25	68	34



WE6PB Adjustable Bulkhead Union Elbow

Part No.	Tube Size (mm)	Thread B (mm)	C Hex	C4 Hex	L	L1	M	W	Bkhd Hole Dia.
WE6PB4	4	M11x0.75	14	16	37	18.0	18.0	6	11mm
WE6PB6	6	M13x1	17	17	39	19.5	20.5	6	13mm
WE6PB8	8	M15x1.25	19	19	43	21.5	22.5	6	15mm
WE6PB10	10	M18x1	22	22	54	22.8	28.5	8	18mm
WE6PB12	12	M23x1.5	27	27	59	30.0	30.0	10	23mm

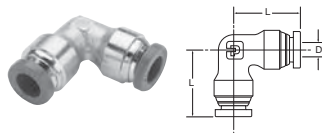
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

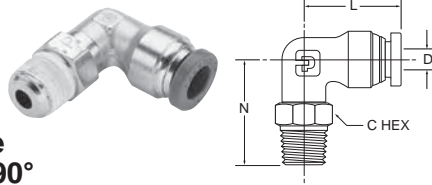
Tubing

N



165PLP Union Elbow

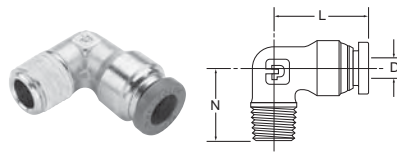
Part No.	Tube Size (In.)	L	Flow Dia. D
165PLP-2	1/8	.74	.094
165PLP-5/32	5/32	.77	.125
165PLP-3	3/16	.82	.156
165PLP-4	1/4	.85	.188
165PLP-5	5/16	.97	.250
165PLP-6	3/8	1.01	.312
165PLP-8	1/2	1.15	.375



W169PLP Male Elbow Swivel 90°

Part No.	Tube Size (In.)	Pipe Thread (NPTF)	C Hex	I	N	Flow ia. D
W169PLP-2-1	1/8	1/16	3/8	.74	.93	.160
W169PLP-2-2	1/8	1/8	7/16	.74	.92	.094
169PLP-2-0*	1/8	10-32	3/8	.74	.74	.080
W169PLP-2-4	1/8	1/4	9/16	.74	1.10	.094
W169PLP-3-2	3/16	1/8	7/16	.82	.92	.156
W169PLP-5/32-1	5/32	1/16	3/8	.84	.93	.160
W169PLP-5/32-2	5/32	1/8	7/16	.77	.92	.125
W169PLP-5/32-4	5/32	1/4	9/16	.77	1.10	.125
169PLP-5/32-0*	5/32	10-32	3/8	.85	.74	.080
W169PLP-4-1	1/4	1/16	3/8	.84	.93	.160
W169PLP-4-2	1/4	1/8	7/16	.85	.92	.156
W169PLP-4-4	1/4	1/4	9/16	.85	1.10	.156
W169PLP-4-6	1/4	3/8	11/16	.85	1.19	.156
169PLP-4-0*	1/4	10-32	3/8	.85	.74	.080
W169PLP-5-2	5/16	1/8	9/16	.97	1.02	.250
W169PLP-5-4	5/16	1/4	9/16	.97	1.24	.250
W169PLP-6-2	3/8	1/8	9/16	1.01	1.02	.250
W169PLP-6-4	3/8	1/4	9/16	1.01	1.24	.250
W169PLP-6-6	3/8	3/8	11/16	1.01	1.24	.250
W169PLP-6-8	3/8	1/2	7/8	1.01	1.48	.250
W169PLP-8-4	1/2	1/4	9/16	1.15	1.28	.312
W169PLP-8-6	1/2	3/8	11/16	1.15	1.31	.312
W169PLP-8-8	1/2	1/2	7/8	1.15	1.52	.312

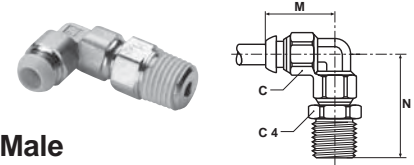
*10-32 seal is neoprene



W169PLPNS Male Elbow 90°

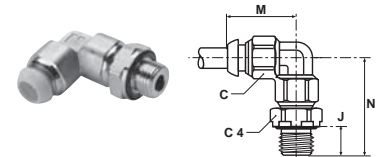
Part No.	Tube Size (In.)	Pipe Thread (NPTF)	L	N	Flow Dia. D
W169PLPNS-2-2	1/8	1/8	.74	.67	.094
W169PLPNS5/32-2	5/32	1/8	.77	.67	.125
W169PLPNS5/32-4	5/32	1/4	.77	.87	.125
W169PLPNS-4-2	1/4	1/8	.85	.67	.188
W169PLPNS-4-4	1/4	1/4	.85	.87	.188
W169PLPNS-5-2	5/16	1/8	.97	.75	.234
W169PLPNS-5-4	5/16	1/4	.97	.94	.250
W169PLPNS-6-4	3/8	1/4	1.01	.94	.312
W169PLPNS-6-6	3/8	3/8	1.01	1.01	.312
W169PLPNS-6-8	3/8	1/2	1.01	1.27	.312
W169PLPNS-8-6	1/2	3/8	1.15	1.00	.375
W169PLPNS-8-8	1/2	1/2	1.15	1.27	.375
169PLPNS532-4LT*	5/32	1/4-28	.60	.48	.090

* SAE-LT Threads



C6PB Adjustable Male Elbow NPT

Part No.	Tube Size (mm)	NPT	C Hex	C4 Hex	M	N
C6PB6-1/4	6	1/4-18	12	14	20	36.0
C6PB6-3/8	6	3/8-18	12	19	20	36.5
C6PB10-1/4	10	1/4-18	17	16	28	41.5
C6PB10-3/8	10	3/8-18	17	19	28	41.5
C6PB12-1/2	12	1/2-14	22	22	30	47.5



C64PB Adjustable Male Elbow BSPP

Part No.	Tube Size (mm)	BSPP	C Hex	C4 Hex	J	M	N
C64PB4-1/8	4	1/8	10	13	4.7	18	23.4
C64PB4-1/4	4	1/4	10	16	6.0	18	25.2
C64PB6-1/8	6	1/8	12	13	4.7	20	26.1
C64PB6-1/4	6	1/4	12	16	6.0	20	26.4
C64PB8-1/8	8	1/8	14	13	4.7	22	28.1
C64PB8-1/4	8	1/4	14	16	6.0	22	28.4
C64PB8-3/8	8	3/8	14	20	6.5	22	30.6
C64PB10-1/4	10	1/4	17	16	6.0	28	34.9
C64PB10-3/8	10	3/8	17	20	6.5	28	37.4
C64PB12-1/4	12	1/4	22	19	6.0	30	36.5
C64PB12-3/8	12	3/8	22	22	6.5	30	39.0
C64PB12-1/2	12	1/2	22	24	7.5	30	38.5
C64PB14-3/8	14	3/8	25	22	6.5	34	44.7
C64PB14-1/2	14	1/2	25	24	7.5	34	44.3

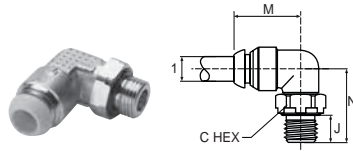
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

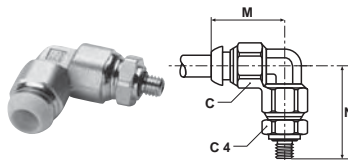
Tubing

N



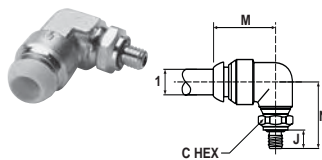
C64SPB Compact Adjustable Male Elbow BSPP

Part No.	Tube Size (mm)	BSPP	C Hex	J	M	N
C64SPB4-1/8	4	1/8	13	4.7	17	17.3
C64SPB6-1/8	6	1/8	13	4.7	22	17.3
C64SPB6-1/4	6	1/4	16	6.0	22	19.1
C64SPB8-1/8	8	1/8	13	4.7	24	16.9
C64SPB8-1/4	8	1/4	16	6.0	24	18.7
C64SPB8-3/8	8	3/8	20	6.5	24	20.7
C64SPB10-1/4	10	1/4	16	6.0	29	20.5
C64SPB10-3/8	10	3/8	20	6.5	29	22.5
C64SPB12-1/4	12	1/8	16	6.0	31	20.5
C64SPB12-3/8	12	3/8	20	6.5	31	23.2
C64SPB12-1/2	12	1/2	24	7.5	31	25.2



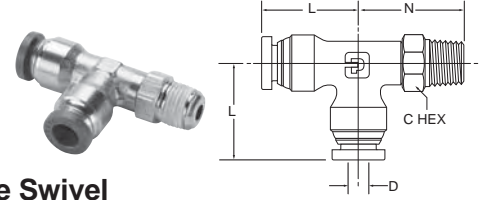
C68PB Adjustable Male Elbow Metric Straight Thread

Part No.	Tube Size (mm)	Thread (mm)	C Hex	C4 Hex	M	N
C68PB4M5	4	M5x0.8	11	10	17	18
C68PB6M5	6	M5x0.8	11	10	17	18



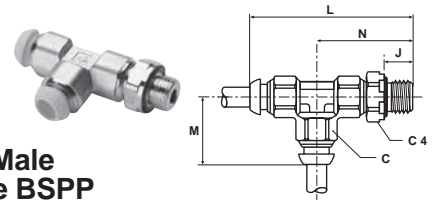
C68SPB Compact Adjustable Male Elbow Metric Straight Thread

Part No.	Tube Size (mm)	Thread (mm)	C Hex	J	M	N
C68SPB4M5	4	M5x0.8	12.5	5	17	18
C68SPB6M5	6	M5x0.8	12.5	5	17	18



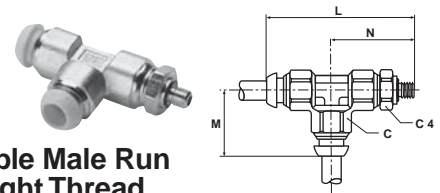
W171PLP Male Run Tee Swivel

Part No.	Tube Size (In.)	Pipe Thread (NPTF)	C Hex	L	N	Flow Dia. D
W171PLP-2-2	1/8	1/8	7/16	.74	.92	.094
W171PLP-5/32-2	5/32	1/8	7/16	.77	.92	.125
W171PLP-4-2	1/4	1/8	7/16	.85	.92	.156
W171PLP-4-4	1/4	1/4	9/16	.85	1.10	.156
W171PLP-4-6	1/4	3/8	11/16	.85	1.24	.156
W171PLP-5-2	5/16	1/8	9/16	.97	1.02	.250
W171PLP-5-4	5/16	1/4	9/16	.97	1.24	.250
W171PLP-6-4	3/8	1/4	9/16	1.01	1.24	.250
W171PLP-6-6	3/8	3/8	11/16	1.01	1.24	.250
W171PLP-8-6	1/2	3/8	11/16	1.15	1.31	.312
W171PLP-8-8	1/2	1/2	7/8	1.15	1.52	.312



R64PB Swivel Male Branch Run Tee BSPP

Part No.	Tube Size (mm)	BSPP	C Hex	C4 Hex	J	L	M	N
R64PB4-1/8	4	1/8	10	13	4.7	41.4	18	23.4
R64PB4-1/4	4	1/4	10	16	6.0	43.2	18	25.2
R64PB6-1/8	6	1/8	12	13	4.7	46.1	20	26.1
R64PB6-1/4	6	1/4	12	16	6.0	46.4	20	26.4
R64PB8-1/8	8	1/8	14	13	4.7	50.1	22	28.1
R64PB8-1/4	8	1/4	14	16	6.0	50.4	22	28.4
R64PB8-3/8	8	3/8	14	20	6.5	52.6	22	30.6
R64PB10-1/4	10	1/4	17	16	6.0	62.9	28	34.9
R64PB10-3/8	10	3/8	17	20	6.5	65.4	28	37.4
R64PB12-1/4	12	1/4	22	19	6.0	65.5	29	36.5
R64PB12-3/8	12	3/8	22	22	6.5	68.0	29	39.0
R64PB14-3/8	14	3/8	25	22	6.5	78.7	34	44.7
R64PB14-1/2	14	1/2	25	24	7.5	78.3	34	44.3



R68PB Adjustable Male Run Tee Metric Straight Thread

Part No.	Tube Size (mm)	Thread (mm)	C Hex	C4 Hex	L	M	N
R68PB4M3	4	M3x0.5	10	10	41.0	18	23.0
R68PB4M5	4	M5x0.8	10	10	42.5	18	24.5
R68PB6M5	6	M5x0.8	12	11	45.5	20	25.5

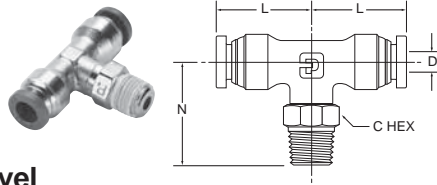
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

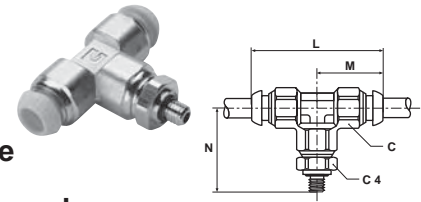
Tubing

N



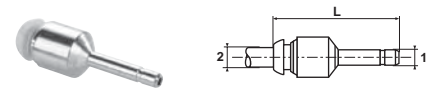
W172PLP Male Branch Tee Swivel

Part No.	Tube Size (In.)	Pipe Thread (NPTF)	C Hex	L	N	Flow Dia. D
W172PLP-2-2	1/8	1/8	7/16	.74	.92	.094
W172PLP-3-2	3/16	1/8	7/16	.82	.92	.156
W172PLP-5/32-2	5/32	1/8	7/16	.77	.92	.125
W172PLP-4-2	1/4	1/8	7/16	.85	.92	.156
W172PLP-4-4	1/4	1/4	9/16	.85	1.10	.156
W172PLP-4-6	1/4	3/8	11/16	.85	1.10	.156
W172PLP-5-2	5/16	1/8	9/16	.97	1.02	.250
W172PLP-5-4	5/16	1/4	9/16	.97	1.24	.250
W172PLP-6-4	3/8	1/4	9/16	1.01	1.24	.250
W172PLP-6-6	3/8	3/8	11/16	1.01	1.24	.250
W172PLP-8-4	1/2	1/4	9/16	1.15	1.30	.312
W172PLP-8-6	1/2	3/8	11/16	1.15	1.31	.312
W172PLP-8-8	1/2	1/2	7/8	1.15	1.52	.312



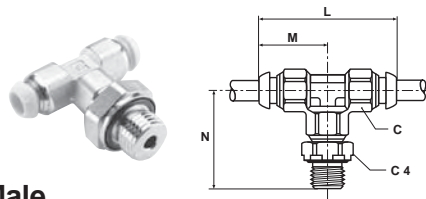
S68PB Adjustable Male Branch Tee Metric Straight Thread

Part No.	Tube Size (mm)	Thread (mm)	C Hex	C4 Hex	L	M	N
S68PB4M3	4	M3X0.5	10	10	36	18	23.0
S68PB4M5	4	M5X0.8	10	10	36	18	24.5
S68PB6M5	6	M5X0.8	12	11	40	20	25.5



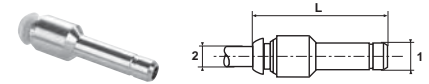
TEPB Tube End Expander

Part No.	Tube 1 Size (mm)	Tube 2 Size (mm)	L
TEPB4-6	4	6	39



S64PB Swivel Male Branch Tee BSPP

Part No.	Tube Size (mm)	BSPP	C Hex	C4 Hex	L	M	N
S64PB4-1/8	4	1/8	10	13	36	18	23.4
S64PB4-1/4	4	1/4	10	16	36	18	25.2
S64PB6-1/8	6	1/8	12	13	40	20	26.1
S64PB6-1/4	6	1/4	12	16	40	20	26.4
S64PB8-1/8	8	1/8	14	13	44	22	28.1
S64PB8-1/4	8	1/4	14	16	44	22	28.4
S64PB8-3/8	8	3/8	14	20	44	22	30.6
S64PB10-1/4	10	1/4	17	16	56	28	34.9
S64PB10-3/8	10	3/8	17	20	56	28	37.4
S64PB12-1/4	12	1/4	22	19	58	29	36.5
S64PB12-3/8	12	3/8	22	22	58	29	39.0
S64PB14-3/8	14	3/8	25	22	68	34	44.7
S64PB14-1/2	14	1/2	25	24	68	34	44.3



TRPB Tube End Reducer

Part No.	Tube 1 Size (mm)	Tube 2 Size (mm)	L
TRPB6-4	6	4	40.0
TRPB8-4	8	4	39.5
TRPB8-6	8	6	41.5
TRPB10-4	10	4	37.0
TRPB10-6	10	6	43.0
TRPB10-8	10	8	47.5
TRPB12-6	12	6	38.0
TRPB12-8	12	8	44.0
TRPB12-10	12	10	52.0
TRPB14-8	14	8	41.0
TRPB14-10	14	10	51.0
TRPB14-12	14	12	55.0

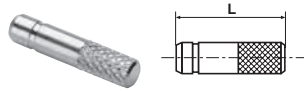
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

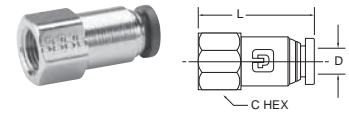
Tubing

N



FNPB Plug

Part No.	Tube Size (mm)	L
FNPB4	4	27
FNPB6	6	27
FNPB8	8	30
FNPB10	10	30
FNPB12	12	35
FNPB14	14	36



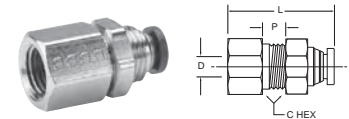
66PW Female Connector (Nickel Plated)

Part No.	Tube Size (In.)	Pipe Thread (NPTF)	C Hex	L	Flow Dia. D
66PW-4-2	1/4	1/8	9/16	1.17	.188
66PW-4-4	1/4	1/4	11/16	1.38	.188
66PW-5-2	5/16	1/8	9/16	1.25	.250
66PW-5-4	5/16	1/4	11/16	1.45	.250
66PW-6-4	3/8	1/4	11/16	1.46	.312
66PW-6-6	3/8	3/8	13/16	1.51	.312



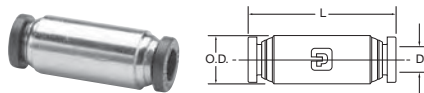
DB Dust/Weld Spatter Boot

Part No.	Tube Size (In.)	L	D
DB-4	1/4	.50	.53
DB-6	3/8	.50	.76
DB-8	1/2	.50	.88



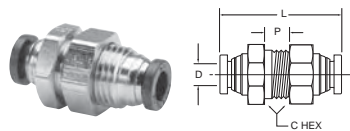
66PWBH Female Bulkhead (Nickel Plated)

Part No.	Tube Size (In.)	Thread (NPTF)	C Hex	P Max.	L	Flow Dia. D	Bulkhead Hole Dia.
66PWBH-4-4	1/4	1/4	11/16	.24	1.35	.188	9/16
66PWBH-6-6	3/8	3/8	1	.22	1.47	.312	7/8
66PWBH-8-6	1/2	3/8	1 1/4	.35	1.56	.344	1



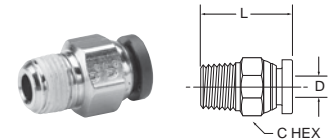
62PW Union (Nickel Plated)

Part No.	Tube Size (In.)	O.D.	L	Flow Dia. D
62PW-4	1/4	.500	1.43	.188
62PW-5	5/16	.562	1.65	.250
62PW-6	3/8	.625	1.66	.312
62PW-8	1/2	.750	1.82	.375



62PWBH Bulkhead Union (Nickel Plated)

Part No.	Tube Size (In.)	Bulkhead Hole Dia. B	C Hex	P Max.	L	D
62PWBH-4	1/4	9/16	11/16	.29	1.43	.188
62PWBH-5	5/16	5/8	3/4	.60	1.65	.250
62PWBH-6	3/8	3/4	7/8	.54	1.66	.312
62PWBH-8	1/2	7/8	1	.66	2.04	.375



W68PW Male Connector (Nickel Plated)

Part No.	Tube Size (In.)	Thread (NPTF)	C Hex	L	Flow Dia. D
W68PW-4-2	1/4	1/8	1/2	.89	.188
W68PW-4-4	1/4	1/4	9/16	1.00	.188
W68PW-4-6	1/4	3/8	3/4	1.04	.188
W68PW-5-2	5/16	1/8	9/16	1.18	.250
W68PW-5-4	5/16	1/4	9/16	1.04	.250
W68PW-5-6	5/16	3/8	11/16	1.04	.250
W68PW-6-2	3/8	1/8	5/8	1.21	.250
W68PW-6-4	3/8	1/4	5/8	1.08	.312
W68PW-6-6	3/8	3/8	11/16	1.02	.312
W68PW-6-8	3/8	1/2	7/8	1.28	.312
W68PW-8-4	1/2	1/4	13/16	1.44	.344
W68PW-8-6	1/2	3/8	13/16	1.24	.344
W68PW-8-8	1/2	1/2	7/8	1.35	.375

Pipe Fittings & Adapters

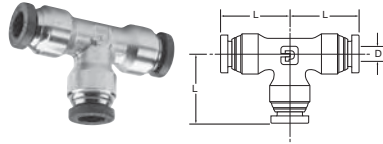
Prestolok Metal

Prestolok Composite

Tubing

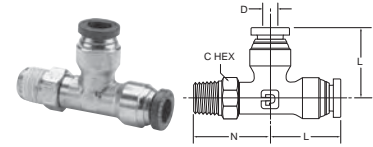
N

**164PW Union Tee
(Nickel Plated)**



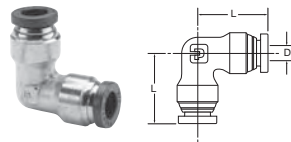
Part No.	Tube Size (In.)	L	Flow Dia. D
164PW-4	1/4	.85	.188
164PW-5	5/16	.97	.250
164PW-6	3/8	1.01	.250
164PW-8	1/2	1.15	.375

**W171PW Male
Run Tee Swivel
(Nickel Plated)**



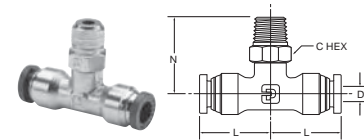
Part No.	Tube Size (In.)	Pipe Thread (NPTF)	C Hex	L	N	Flow Dia. D
W171PW-4-2	1/4	1/8	7/16	.85	.92	.156
W171PW-4-4	1/4	1/4	9/16	.85	1.10	.156
W171PW-4-6	1/4	3/8	11/16	.85	1.24	.156
W171PW-5-2	5/16	1/8	9/16	.97	1.02	.250
W171PW-5-4	5/16	1/4	9/16	.97	1.24	.250
W171PW-6-4	3/8	1/4	9/16	1.01	1.24	.250
W171PW-6-6	3/8	3/8	11/16	1.01	1.24	.250
W171PW-8-6	1/2	3/8	11/16	1.15	1.31	.312
W171PW-8-8	1/2	1/2	7/8	1.15	1.52	.312

**165PW Union Elbow
(Nickel Plated)**



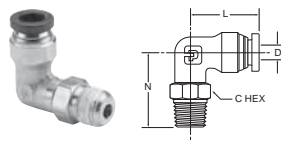
Part No.	Tube Size (In.)	L	Flow Dia. D
165PW-4	1/4	.85	.188
165PW-5	5/16	.97	.250
165PW-6	3/8	1.01	.312
165PW-8	1/2	1.15	.375

**W172PW Male
Branch Tee Swivel
(Nickel Plated)**



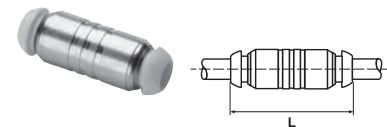
Part No.	Pipe Size (In.)	Thread (NPTF)	C Hex	L	N	Flow Dia. D
W172PW-4-2	1/4	1/8	7/16	.85	.92	.156
W172PW-4-4	1/4	1/4	9/16	.85	1.10	.156
W172PW-4-6	1/4	3/8	11/16	.85	1.10	.156
W172PW-5-2	5/16	1/8	9/16	.97	1.02	.250
W172PW-5-4	5/16	1/4	9/16	.97	1.24	.250
W172PW-6-4	3/8	1/4	9/16	1.01	1.24	.250
W172PW-6-6	3/8	3/8	11/16	1.01	1.24	.250
W172PW-8-4	1/2	1/4	9/16	1.15	1.30	.312
W172PW-8-6	1/2	3/8	11/16	1.15	1.31	.312
W172PW-8-8	1/2	1/2	7/8	1.15	1.52	.312

**W169PW Male Elbow
Swivel 90°
(Nickel Plated)**



Part No.	Pipe Size (In.)	Thread (NPTF)	C Hex	L	N	Flow Dia. D
W169PW-4-2	1/4	1/8	7/16	.85	.92	.156
W169PW-4-4	1/4	1/4	9/16	.85	1.10	.156
W169PW-4-6	1/4	3/8	11/16	.85	1.19	.156
W169PW-5-2	5/16	1/8	9/16	.97	1.02	.250
W169PW-5-4	5/16	1/4	9/16	.97	1.24	.250
W169PW-6-2	3/8	1/8	9/16	1.01	1.02	.250
W169PW-6-4	3/8	1/4	9/16	1.01	1.24	.250
W169PW-6-6	3/8	3/8	11/16	1.01	1.24	.250
W169PW-6-8	3/8	1/2	7/8	1.01	1.48	.250
W169PW-8-4	1/2	1/4	9/16	1.15	1.28	.312
W169PW-8-6	1/2	3/8	11/16	1.15	1.31	.312
W169PW-8-8	1/2	1/2	7/8	1.15	1.52	.312

HPB Equal Union



Part No.	Tube Size (mm)	L
HPB6	6	36.0
HPB8	8	38.0
HPB10	10	48.0
HPB12	12	48.0

Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

N

Industrial Pipe Fittings	207ACBH Anchor Coupling  Page N40	207P Pipe Coupling  Page N40	208P Reducer Coupling  Page N40	209P Pipe Bushing  Page N40	210P Lock Nut  Page N40	
	211P Square-head Plug  Page N40	212P Union  Page N40	213P Cap  Page N41	215PN Close Nipple  Page N41	215PNL Long Nipple  Page N41	216P Hex Nipple  Page N41
	218P Hex-Head Plug  Page N41	219P Countersunk Plug  Page N41	220P Slotted-Head Plug  Page N42	222P Adapter  Page N42	1200P-2200P Union Elbow  Page N42	1202P-2202P Street Elbow  Page N42
	1203P-2203P Union Tee  Page N42	1204P Male Elbow  Page N42	2224P Male Branch Tee  Page N43	2225P Street Tee  Page N43	1201P-2201P 45° Female Elbow  Page N43	2205P Cross  Page N43
	2214P 45° Street Elbow  Page N43	Metric Adapters BSP	DD44 90° Elbow  Page N45	FF44 BSPP Hex Nipple  Page N45	FHG4 Adapter Male-BSPP  Page N45	GG44 Pipe Connector  Page N45
	KMM004 BSPP Cross  Page N45		MM0444 Pipe Tee  Page N45	WGG44 Bulkhead Female Union  Page N45		

Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

N

Features

Materials of Construction	
Fittings:	CA345, CA360, CA377

Nomenclature	
Example: 2214P-2-2	Attribute:
2	Extrusion
1 (not shown)	Forging
214	45° Street Elbow
p	Pipe
2	1/8" Pipe Thread
2	1/8" Pipe Thread

Applicable Tube	
Tube Material:	Copper, brass, iron pipe
Thread size:	1/8, 1/4, 3/8, 1/2, 3/4, 1

Specifications	
Pressure Range:	Up to 1,000 PSI
Temperature Ranges:	-65° to +250°F

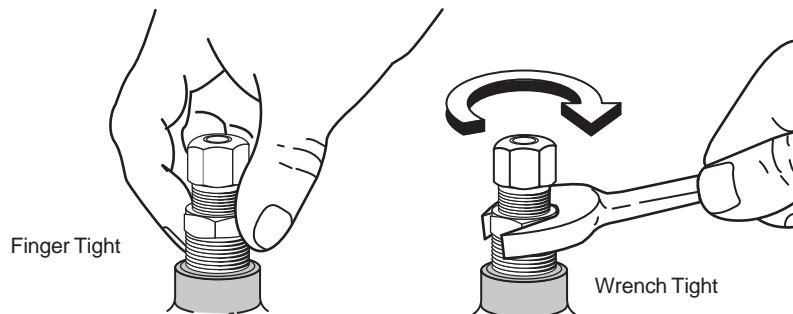


All pipe fittings meet functional requirements of SAE J530 and SAE J531. Threads are made to Dryseal standards.

Pipe thread assembly guide (turns method) for Dryseal threads with pre-applied Vibra Seal

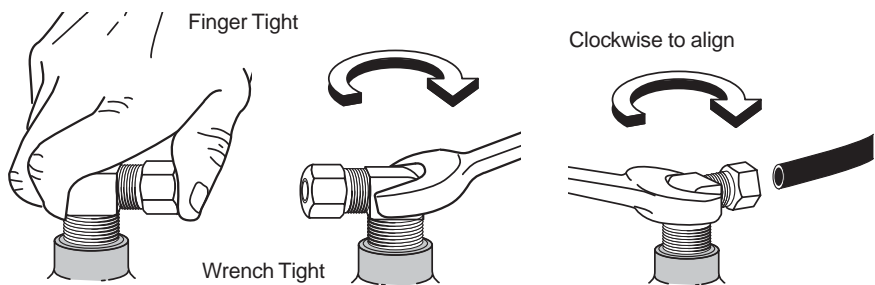
Straight Fittings

1. Tighten external thread into the internal thread.
2. Tighten an additional 2 revolutions with a wrench up to 1/2 in. male pipe thread. Above 1/2 in., 1-1/2 to 2-1/2 revolutions.



Elbow or Tee Fittings

1. Tighten external thread into the internal thread.
2. Tighten an additional 1 to 1-1/2 revolutions with a wrench.
3. Tighten fitting, Clockwise, to Align with Tubing (never counter clockwise).



Note: To minimize the possibility of a leaking threaded joint after assembling male to female pipe threads, neither end should be backed out (loosened) once the assembly has been made.

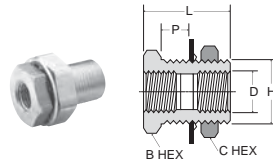
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

Tubing

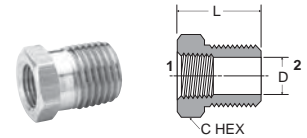




207ACBH Anchor Coupling

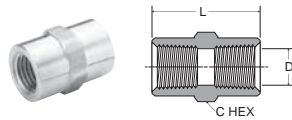
Part No.	Female Pipe Thread	Straight Thread	Max. Bulk Head P	B Hex	C Hex	L	Blkhd Hole Dia. H	Flow Dia. D
207ACBH-2	1/8	5/8-18	.89	7/8	15/16	1.50	5/8	.339
207ACBHS-2	1/8	5/8-18	.35	7/8	15/16	.96	5/8	.339
207ACBH-4	1/4	3/4-16	.81	1	1-1/8	1.50	3/4	.441
207ACBHS-4	1/4	3/4-16	.26	1	1	.94	3/4	.441
207ACBH-6	3/8	1-14	.62	1-1/8	1-1/4	1.31	1	.571
207ACBH-8	1/2	1-1/8-14	.75	1-1/4	1-3/8	1.50	1-1/8	.703
207ACBH-12	3/4	1-5/16-12	.65	1-1/2	1-1/2	1.50	1-5/16	.906
207ACBH-16*	1	1-5/8-14	1.00	2	2	1.68	1-5/8	1.140

*Lock Washer not Available



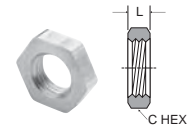
209P Bushing

Part No.	1 Pipe Thread	2 Pipe Thread	C Hex	L	Flow Dia. D
209P-4-2	1/8	1/4	9/16	.75	.339
209P-6-2	1/8	3/8	11/16	.75	.339
209P-6-4	1/4	3/8	3/4	.75	.441
209P-8-2	1/8	1/2	7/8	1.00	.339
209P-8-4	1/4	1/2	7/8	1.00	.441
209P-8-6	3/8	1/2	7/8	1.00	.571
209P-12-2	1/8	3/4	1-1/8	1.00	.339
209P-12-4	1/4	3/4	1-1/8	1.00	.441
209P-12-6	3/8	3/4	1-1/8	1.00	.571
209P-12-8	1/2	3/4	1-1/8	1.00	.703
209P-16-8	1/2	1	1-3/8	1.31	.703
209P-16-12	3/4	1	1-3/8	1.31	.906



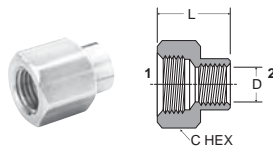
207P Coupling

Part No.	Pipe Thread	C Hex	L	Flow Dia. D
207P-2	1/8	9/16	.75	.339
207P-4	1/4	3/4	1.12	.441
207P-6	3/8	7/8	1.12	.571
207P-8	1/2	1-1/16	1.50	.703
207P-12	3/4	1-3/8	1.53	.906



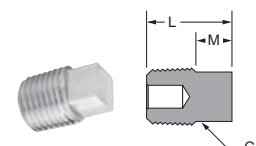
210P Lock Nut

Part No.	Pipe Thread	C Hex	L
210P-2	1/8 NPSL	11/16	.19
210P-4	1/4 NPSL	7/8	.25
210P-6	3/8 NPSL	1	.25
210P-8	1/2 NPSL	1-1/8	.25



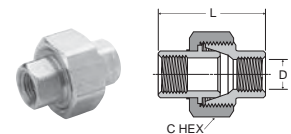
208P Reducer Coupling

Part No.	1 Pipe Thread	2 Pipe Thread	C Hex	L	Flow Dia. D
208P-4-2	1/4	1/8	3/4	.97	.339
208P-6-4	3/8	1/4	7/8	1.16	.441
208P-8-4	1/2	1/4	1-1/16	1.28	.441
208P-8-6	1/2	3/8	1-1/16	1.38	.571
208P-12-6	3/4	3/8	1-3/8	1.32	.571
208P-12-8	3/4	1/2	1-3/8	1.50	.703



211P Square-Head Plug

Part No.	Pipe Thread	C	L	M
211P-2	1/8	9/32	.59	.25
211P-4	1/4	3/8	.80	.29
211P-6	3/8	7/16	.83	.32
211P-8	1/2	9/16	1.07	.39
211P-12	3/4	5/8	1.14	.45



212P Union

Part No.	Pipe Thread	C Hex	L	D
212P-4	1/4	1-3/16	1.54	.441
212P-6	3/8	1-1/4	1.76	.571

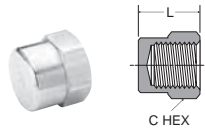
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

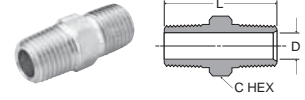
Tubing

N



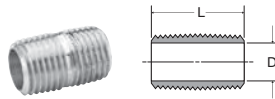
213P Cap

Part No.	Pipe Thread	C Hex	L
213P-2	1/8	9/16	.50
213P-4	1/4	11/16	.63
213P-6	3/8	13/16	.63
213P-8	1/2	1-1/16	.87
213P-12	3/4	1-1/4	.89



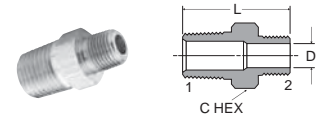
216P Hex Nipple

Part No.	Pipe Thread	C Hex	L	Flow Dia. D
216P-2	1/8	7/16	.97	.220
216P-4	1/4	9/16	1.38	.314
216P-6	3/8	11/16	1.41	.440
216P-8	1/2	7/8	1.81	.564
216P-12	3/4	1-1/16	1.81	.752



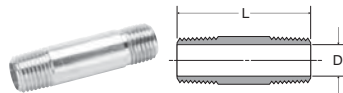
215PN Close Nipple

Part No.	Pipe Thread	L	Flow Dia. D
215PN-2	1/8	.75	.281
215PN-4	1/4	.88	.375
215PN-6	3/8	1.00	.500
215PN-8	1/2	1.13	.625
215PN-12	3/4	1.31	.750



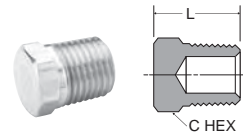
216P Hex Nipple Reducers

Part No.	1 Pipe Thread	2 Pipe Thread	C Hex	L	Flow Dia. D
216P-4-2	1/4	1/8	9/16	1.19	.220
216P-6-2	3/8	1/8	11/16	1.22	.220
216P-6-4	3/8	1/4	11/16	1.41	.314
216P-8-4	1/2	1/4	7/8	1.62	.314
216P-8-6	1/2	3/8	7/8	1.62	.440
216P-12-8	3/4	1/2	1-1/16	1.80	.564



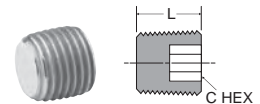
215PNL Long Nipple

Part No.	Pipe Thread	L	Flow Dia. D
215PNL-2-15	1/8	1-1/2	.250
215PNL-4-15	1/4	1-1/2	.375
215PNL-6-15	3/8	1-1/2	.500
215PNL-8-15	1/2	1-1/2	.625
215PNL-2-20	1/8	2	.250
215PNL-4-20	1/4	2	.375
215PNL-6-20	3/8	2	.500
215PNL-8-20	1/2	2	.625
215PNL-2-25	1/8	2-1/2	.250
215PNL-4-25	1/4	2-1/2	.375
215PNL-6-25	3/8	2-1/2	.500
215PNL-8-25	1/2	2-1/2	.625
215PNL-2-30	1/8	3	.250
215PNL-4-30	1/4	3	.375
215PNL-6-30	3/8	3	.500
215PNL-8-30	1/2	3	.625
215PNL-2-35	1/8	3-1/2	.250
215PNL-4-35	1/4	3-1/2	.375
215PNL-6-35	3/8	3-1/2	.500
215PNL-8-35	1/2	3-1/2	.625



218P Hex-Head Plug

Part No.	Pipe Thread	C Hex	L
218P-2	1/8	7/16	.560
218P-4	1/4	9/16	.747
218P-6	3/8	11/16	.780
218P-8	1/2	7/8	.970
218P-12	3/4	1-1/16	1.054



219P Countersunk Hex-Head Plug

Part No.	Pipe Thread	C Hex	L
219P-2	1/8	3/16	.30
219P-4	1/4	1/4	.46
219P-6	3/8	5/16	.46
219P-8	1/2	3/8	.61
219P-12	3/4	9/16	.62

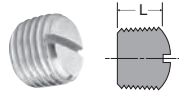
Pipe Fittings & Adapters

Prestolok Metal

Prestolok Composite

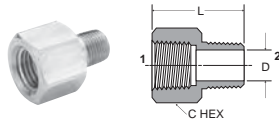
Tubing

N



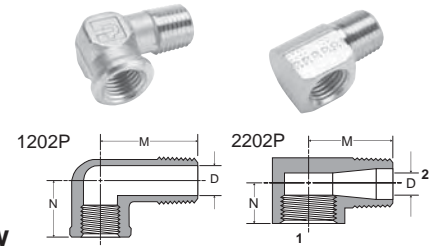
220P Slotted-Head Plug

Part No.	Pipe Thread	L
220P-2	1/8	.31
220P-4	1/4	.42
220P-6	3/8	.43



222P Adapter

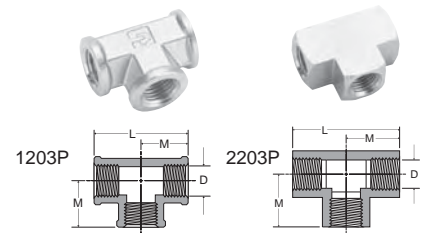
Part No.	1 Pipe Thread	2 Pipe Thread	C Hex	L	Flow Dia. D
222P-2-2	1/8	1/8	9/16	.88	.220
222P-4-2	1/4	1/8	3/4	1.06	.220
222P-4-4	1/4	1/4	3/4	1.25	.314
222P-6-2	3/8	1/8	7/8	1.10	.220
222P-6-4	3/8	1/4	7/8	1.25	.314
222P-6-6	3/8	3/8	7/8	1.25	.440
222P-8-4	1/2	1/4	1	1.47	.314
222P-8-6	1/2	3/8	1-1/16	1.47	.440
222P-8-8	1/2	1/2	1-1/16	1.66	.564
222P-12-6	3/4	3/8	1-3/8	1.50	.440
222P-12-8	3/4	1/2	1-3/8	1.69	.564
222P-12-12	3/4	3/4	1-3/8	1.69	.752



1202P-2202P 90° Street Elbow

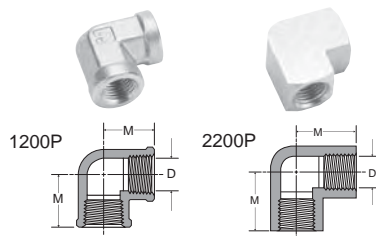
Part No.	1 Pipe Thread	2 Pipe Thread	M	N	Flow Dia. D
1202P-2-2	1/8	1/8	.81	.56	.22
2202P-2-2	1/8	1/8	.62	.48	.22
2202PA-2-2*	1/8	1/8	.66	.48	.22
2202P-4-2	1/4	1/8	.72	.45	.23
1202P-4-4	1/4	1/4	1.08	.69	.31
2202P-4-4	1/4	1/4	.91	.45	.34
2202PA-4-4*	1/4	1/4	.91	.72	.31
2202P-4-6	1/4	3/8	.97	.78	.43
1202P-6-4	3/8	1/4	1.25	.78	.31
1202P-6-6	3/8	3/8	1.25	.78	.42
2202P-6-6	3/8	3/8	.98	.54	.41
2202PA-6-6*	3/8	3/8	.97	.78	.43

*Meets SAE Dimensions



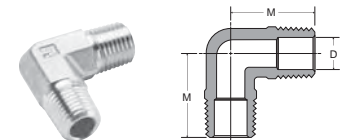
1203P-2203P Union Tee

Part No.	Pipe Thread	L	M	Flow Dia. D
1203P-2	1/8	1.12	.56	.339
2203P-2	1/8	1.06	.53	.339
1203P-4	1/4	1.38	.69	.441
2203P-4	1/4	1.52	.76	.441
2203P-6	3/8	1.68	.84	.571
1203P-8	1/2	2.14	1.07	.703
2203P-8	1/2	2.14	1.07	.703
2203P-12	3/4	2.28	1.14	.906



1200P-2200P 90° Union Elbow

Part No.	Pipe Thread	M	Flow Dia. D
1200P-2-2	1/8	.56	.329
2200P-2-2	1/8	.55	.339
1200P-4-4	1/4	.81	.441
2200P-4-4	1/4	.78	.441
1200P-6-6	3/8	.84	.571
2200P-6-6	3/8	.84	.571
2200P-8-8	1/2	1.07	.703



1204P Male Elbow

Part No.	Pipe Thread	M	Flow Dia. D
1204P-2	1/8	.71	.220
1204P-4	1/4	1.09	.312
1204P-6	3/8	1.09	.408
1204P-8	1/2	1.41	.502

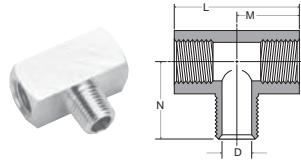
Pipe Fittings
& Adapters

Prestolok
Metal

Prestolok
Composite

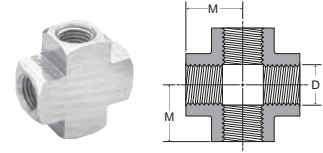
Tubing

N



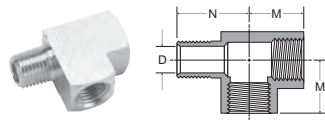
2224P Male Branch Tee

Part No.	Pipe Thread	L	M	N	Flow Dia. D
2224P-2	1/8	1.06	.53	.66	.220
2224P-4	1/4	1.52	.76	.91	.314
2224P-6	3/8	1.68	.84	.97	.440
2224P-8	1/2	2.18	1.09	1.25	.564
2224P-12	3/4	2.32	1.16	1.38	.752



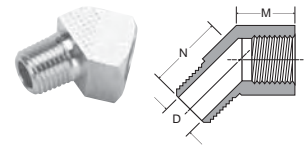
2205P Cross

Part No.	Pipe Thread	M	Flow Dia. D
2205P-2	1/8	.53	.339
2205P-4	1/4	.75	.441
2205P-6	3/8	.81	.571
2205P-8	1/2	1.07	.703
2205P-12	3/4	1.14	.906



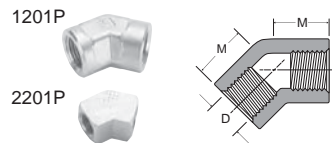
2225P Street Tee

Part No.	Pipe Thread	M	N	Flow Dia. D
2225P-2	1/8	.53	.66	.220
2225P-4	1/4	.76	.91	.314
2225P-6	3/8	.84	.98	.440
2225P-8	1/2	1.07	1.26	.564
2225P-12	3/4	1.14	1.38	.752



2214P 45° Street Elbow

Part No.	Pipe Thread	M	N	Flow Dia. D
2214P-2-2	1/8	.38	.50	.220
2214P-4-4	1/4	.54	.70	.314
2214P-6-6	3/8	.56	.78	.440
2214P-8-8	1/2	.73	1.00	.564



**1201P-2201P
45° Female Elbow**

Part No.	Pipe Thread	M	Flow Dia. D
2201P-2-2	1/8	.43	.339
1201P-8-8	1/2	.89	.703

Pipe Fittings
& Adapters

Prestolok
Metal

Presolok
Composite

Tubing

N

Features

Materials of Construction	
Adapters:	Brass

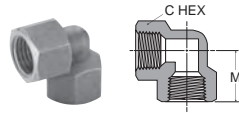
Applicable Tube	
Tube Material:	Copper, brass, iron pipe
NPT:	1/8, 1/4, 3/8, 1/2
BSPT:	1/8, 1/4, 3/8, 1/2, 3/4, 1
BSPP:	1/8, 1/4, 3/8, 1/2, 3/4, 1

Specifications	
Pressure Range:	Up to 1,000 PSI
Temperature Ranges:	-65° to +250°F



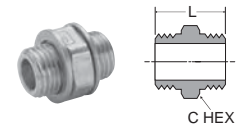
A comprehensive range of adapters for NPT, BSPT and BSPP pipe threads. Produced in both forgings and extrusions. Parker brass adapters are produced from forgings and extrusions to meet exacting requirements. The hot forging process increases the density of the material, refines the grain structure and improves material strength.

Pipe Fittings & Adapters
Prestolok Metal
Prestolok Composite
Tubing
N



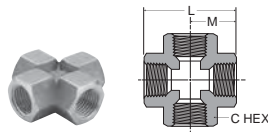
DD44 Pipe 90° Elbow BSPP

Part No.	BSPP	C Hex	M
1/8DD44B	1/8	14	15
1/4DD44B	1/4	17	18
3/8DD44B	3/8	22	22
1/2DD44B	1/2	27	29



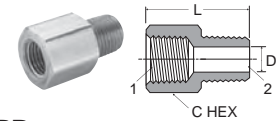
FF44 Pipe Nipples BSPP

Part No.	BSPP	C Hex	L
1/8FF44B	1/8	14	19
1/4FF44B	1/4	17	22
3/8FF44B	3/8	22	24
1/2FF44B	1/2	27	31



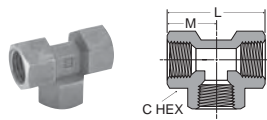
KMM004 Pipe Cross BSPP

Part No.	BSPP	C Hex	L	M
1/8KMM004B	1/8	14	29	14.5
1/4KMM004B	1/4	17	36	18.0
3/8KMM004B	3/8	22	44	22.0
1/2KMM004B	1/2	27	58	29.0



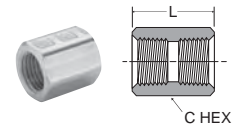
FHG4 Adapter Male NPTF BSPP

Part No.	BSPP 1	NPTF 2	C Hex	L	Flow D
1/8FHG4-B	1/8	1/8	0.562	0.87	.22
1/4FHG4-B	1/4	1/4	0.750	1.33	.31
3/8FHG4-B	3/8	3/8	0.875	1.44	.44
1/2FHG4-B	1/2	1/2	1.062	1.74	.56



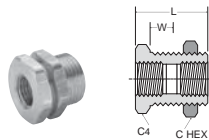
MM0444 Pipe Tee BSPP

Part No.	BSPP	C Hex	L	M
1/8MMO444B	1/8	14	29	14.5
1/4MMO444B	1/4	17	36	18.0
3/8MMO444B	3/8	22	44	22.0
1/2MMO444B	1/2	27	58	29.0
3/4MMO444B	3/4	32	62	31.0
1MMO444B	1	40	85	42.5



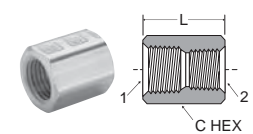
GG44 Pipe Connector BSPP

Part No.	BSPP	C Hex	L
1/8GG44B	1/8	14	16
1/4GG44B	1/4	17	20
3/8GG44B	3/8	22	24
1/2GG44B	1/2	27	28
3/4GG44B	3/4	32	32
1GG44B	1	41	36



WGG44 Bulkhead Female Union BSPP

Part No.	BSPP	Straight Thread	C Hex	C4	L	W
1/8WGG44B	1/8	M16x1.5	19	22	21.5	12
1/4WGG44B	1/4	M20x1.5	24	24	22.0	12
3/8WGG44B	3/8	M23x1.5	27	27	24.0	12
1/2WGG44B	1/2	M27x1.5	32	32	28.0	14
3/4WGG44B	3/4	M34x1.5	41	41	31.0	13
1WGG44B	1	M45x2	55	55	36.0	12



GG44 Unequal Pipe Connector BSPP

Part No.	BSPP 1	BSPP 2	C Hex	L
1/8x1/4GG44B	1/8	1/4	17	18
1/8x3/8GG44B	1/8	3/8	22	20
1/8x1/2GG44B	1/8	1/2	27	22
1/4x3/8GG44B	1/4	3/8	22	22
1/4x1/2GG44B	1/4	1/2	27	24
3/8x1/2GG44B	3/8	1/2	17	26

Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

WARNING:

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS (“PRODUCTS”) CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

- Unintended or mistimed cycling or motion of machine members or failure to cycle
- Work pieces or component parts being thrown off at high speeds.
- Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
- Explosion
- Suddenly moving or falling objects.
- Release of toxic or otherwise injurious liquids or gasses.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

1. GENERAL INSTRUCTIONS

- 1.1. Scope:** This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters, Pressure Regulators, and Lubricators), Vacuum products and related accessory components.
- 1.2. Fail-Safe:** Valves, FRLs, Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.
- 1.3. Relevant International Standards:** For a good guide to the application of a broad spectrum of pneumatic fluid power devices see: ISO 4414:1998, Pneumatic Fluid Power – General Rules Relating to Systems. See www.iso.org for ordering information.
- 1.4. Distribution:** Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the products considered or selected.
- 1.5. User Responsibility:** Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Parker and its distributors do not represent or warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:
 - Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
 - Assuring that all user's performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
 - Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
 - Assuring compliance with all applicable government and industry standards.
- 1.6. Safety Devices:** Safety devices should not be removed, or defeated.
- 1.7. Warning Labels:** Warning labels should not be removed, painted over or otherwise obscured.
- 1.8. Additional Questions:** Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.com, for telephone numbers of the appropriate technical service department.

2. PRODUCT SELECTION INSTRUCTIONS

- 2.1. Flow Rate:** The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.
- 2.2. Pressure Rating:** Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.
- 2.3. Temperature Rating:** Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.
- 2.4. Environment:** Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.
- 2.5. Lubrication and Compressor Carryover:** Some modern synthetic oils can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.
- 2.6. Polycarbonate Bowls and Sight Glasses:** To avoid potential polycarbonate bowl failures:
 - Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
 - Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, ketones, esters or certain alcohols.
 - Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

Safety Guide

2.7. Chemical Compatibility: For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5

- 2.8. Product Rupture:** Product rupture can cause death, serious personal injury, and property damage.
- Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
 - Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
 - Consult product labeling or product literature for pressure rating limitations.

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

3.1. Component Inspection: Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.

3.2. Installation Instructions: Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.com.

3.3. Air Supply: The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

4.1. Maintenance: Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.10.

4.2. Installation and Service Instructions: Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at www.parker.com.

4.3. Lockout / Tagout Procedures: Be sure to follow all required lockout and tagout procedures when servicing equipment. For more information see: OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – (Lockout / Tagout)

4.4. Visual Inspection: Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:

- Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
- Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation.
- Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
- Any observed improper system or component function: Immediately shut down the system and correct malfunction.
- Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

Caution: Leak detection solutions should be rinsed off after use.

4.5. Routine Maintenance Issues:

- Remove excessive dirt, grime and clutter from work areas.
- Make sure all required guards and shields are in place.

4.6. Functional Test: Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.

4.7. Service or Replacement Intervals: It is the user's responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Service intervals need to be established based on:

- Previous performance experiences.
- Government and / or industrial standards.
- When failures could result in unacceptable down time, equipment damage or personal injury risk.

4.8. Servicing or Replacing of any Worn or Damaged Parts: To avoid unpredictable system behavior that can cause death, personal injury and property damage:

- Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
- Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
- Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.

4.9. Putting Serviced System Back into Operation: Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.

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- 1. Terms and Conditions.** Seller's willingness to offer Products, or accept an order for Products, to or from Buyer is subject to these Terms and Conditions or any newer version of the terms and conditions found on-line at www.parker.com/saleterms/. Seller objects to any contrary or additional terms or conditions of Buyer's order or any other document issued by Buyer.
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- 3. Delivery Dates; Title and Risk; Shipment.** All delivery dates are approximate and Seller shall not be responsible for any damages resulting from any delay. Regardless of the manner of shipment, title to any products and risk of loss or damage shall pass to Buyer upon placement of the products with the shipment carrier at Seller's facility. Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferral of shipment at Buyers' request beyond the respective dates indicated will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions.
- 4. Warranty.** Seller warrants that the Products sold hereunder shall be free from defects in material or workmanship for a period of twelve months from the date of delivery to Buyer or 2,000 hours of normal use, whichever occurs first. The prices charged for Seller's products are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **DISCLAIMER OF WARRANTY: THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS PROVIDED HEREUNDER. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING DESIGN, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
- 5. Claims; Commencement of Actions.** Buyer shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless reported to the Seller within 10 days of delivery. No other claims against Seller will be allowed unless asserted in writing within 30 days after delivery. Buyer shall notify Seller of any alleged breach of warranty within 30 days after the date the defect is or should have been discovered by Buyer. Any action based upon breach of this agreement or upon any other claim arising out of this sale (other than an action by Seller for an amount due on any invoice) must be commenced within 12 months from the date of the breach without regard to the date breach is discovered.
- 6. LIMITATION OF LIABILITY.** UPON NOTIFICATION, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE. **IN NO EVENT SHALL SELLER BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, EVEN IF SELLER HAS BEEN NEGLIGENT, WHETHER IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.**
- 7. User Responsibility.** The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.
- 8. Loss to Buyer's Property.** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two consecutive years have elapsed without Buyer ordering the items manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.
- 9. Special Tooling.** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.
- 10. Buyer's Obligation; Rights of Seller.** To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.
- 11. Improper use and Indemnity.** Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright

infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

- 12. Cancellations and Changes.** Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.
- 13. Limitation on Assignment.** Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.
- 14. Force Majeure.** Seller does not assume the risk and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure") Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.
- 15. Waiver and Severability.** Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.
- 16. Termination.** Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days written notice of termination. Seller may immediately terminate this agreement, in writing, if Buyer: (a) commits a breach of any provision of this agreement (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or by a third party (d) makes an assignment for the benefit of creditors, or (e) the dissolves or liquidates all or a majority of its assets.
- 17. Governing Law.** This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.
- 18. Indemnity for Infringement of Intellectual Property Rights.** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.
- 19. Entire Agreement.** This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.
- 20. Compliance with Law, U. K. Bribery Act and U.S. Foreign Corrupt Practices Act.** Buyer agrees to comply with all applicable laws and regulations, including both those of the United Kingdom and the United States of America, and of the country or countries of the Territory in which the Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act ("FCPA") and the U.S. Anti-Kickback Act (the "Anti-Kickback Act"), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that they are familiar with the provisions of the U. K. Bribery Act, the FCPA and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer shall not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase products or otherwise benefit the business of Seller.

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