



cerrobrass™

FITTINGS, VALVES AND ACCESSORIES

Catalog | Spring 2020



cerrobrass™

TRUSTED • PROVEN • QUALITY

CerroBrass is a global provider of quality flow products for the residential, commercial and industrial markets. Delivering quality flow products and superior customer service for decades.

Since the company began in 1908, Cerro has always maintained its pioneering spirit. From the early days of smelting brass ingots to becoming one of the innovators in the production and handling of copper tubing worldwide, Cerro has been an industry leader.

While we maintain our focus on a tradition of copper, we have expanded into additional product lines that fit with the markets we serve. Reflecting this change, Cerro now hosts a variety of product options including CerroBrass fittings and copper tube.

Our expertise as a manufacturer of copper tubing has enabled us to grow into a full-service plumbing company. In this role, Cerro is proud to offer the strength and reliability of a trusted name as we begin our expansion into other plumbing product solutions.

To help you stay ahead of the competition, we look forward to providing you with the highest-quality, competitively-priced products and value-added services now and in the future.

To learn more about our entire range of products, visit www.cerroflow.com
or call us at (888) 237-7611.

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Brass Alloys

CerroBrass takes great pride in making certain our customers use the right brass alloy for their application. After all, while CA360 brass is an excellent material for many purposes, it isn't necessarily the best way to go for all scenarios.

To understand the advantages of different brass alloys, it is important to review the fundamental chemistry of brass. Each alloy is comprised of three main elements. In order of material content, these elements are Copper, Zinc and Lead. Different combinations of these elements affect the chemical resistance, thermal properties, machineability characteristics and applicability for potable water and other regulated applications.

The following table outlines the composition of several brass alloys CerroBrass machines for different applications.

	C36000 Yellow Brass	C37700 Yellow Brass	C23000 Red Brass	C31400 Red Brass	59-0 Lead Free Brass
Copper Min/Max	60.00% 63.00%	58.00% 62.00%	84.00% 86.00%	87.50% 90.50%	58.00% 59.00%
Zinc Min/Max	32.95% 37.50%	34.70% 40.80%	14.00% 16.00%	6.20% 11.20%	41.80% 39.75%
Lead Min/Max	2.50% 3.70%	1.20% 2.50%	0.00% 0.05%	1.30% 2.50%	00.20% 00.25%
Other Min/Max	0.00% 0.35%	00.00% 00.80%	0.00% 0.05%	0.00% 0.80%	00.00% 1.00%

To understand the importance of the different compositions, consider an example from the front page of most newspapers across the USA. Lead content in consumer products is facing increasing scrutiny by the media and government regulatory agencies. This is especially true where the product comes into direct contact with drinking water. Several states have either already regulated or will soon regulate the acceptable lead content in brass components for plumbing applications. CerroBrass's Lead Free #59-0 brass is the best solution available in the market today for addressing lead concerns in brass fittings.



WARNING: Products offered by CerroBrass can contain chemicals including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Numbering Systems

Each part number indicates the style and size of the fitting. The letters and/or numbers preceding the dash indicate the style and the letters and/or numbers following the dash indicate the size.

For example, E1-4A is an elbow, flare to male pipe thread. The size is 1/4" OD tube by 1/8" male pipe thread.

ALL TUBING SIZES USED IN THIS CATALOG ARE O.D. TUBE SIZE UNLESS OTHERWISE INDICATED.

The numbers and/or letters following the dash show the sizes of the fitting in accordance with the following specifications:

O.D. Tube Size	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	7/8"	1"
Part No.	-2	-3	-4	-5	-6	-7	-8	-10	-12	-14	-16

	STYLE IS GENERALLY IDENTIFIED BY LAST DIGIT	INVERTED FLARE	COMPRES- SION	NAB NYLON AIR BRAKE	FLARE
SLEEVES	0	X	60A-	60NAB-	X
NUTS	1	41I-	61A-	61NAB-	N1/ 41 Series
UNIONS	2	42I-	62A-	62NAB-	U2/ 42 Series
UNION TEES	4	44I-	64A-	64NAB-	T2/ 44 Series
FEMALE CONNECTORS	6	46I-	66A-	66NAB-	U3/ 46 Series
MALE CONNECTORS	8	48I-	68A-	VS68NAB-	U1/ 48 Series
MALE ELBOWS	9	49I-	69A-	VS69NAB-	E1/ 49 Series

Brass Fittings Selection & Application Guide

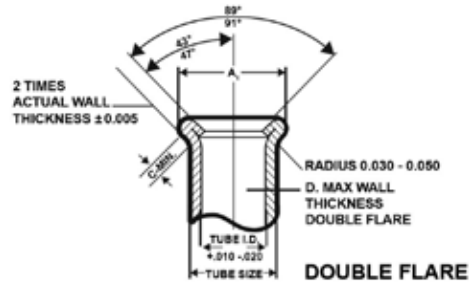
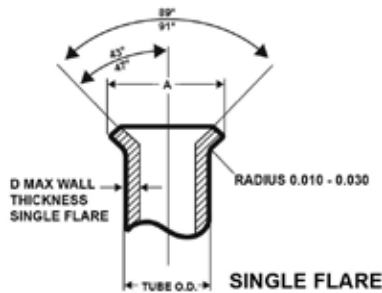
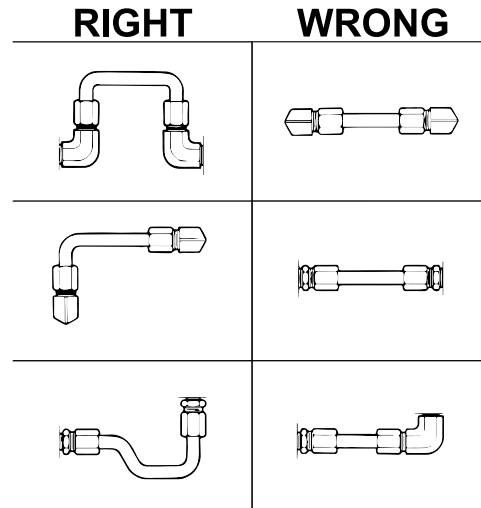
CATEGORIES	DOUBLE COMPRESSION	PIPE	INVERTED FLARE	SAE 45 FLARE	COMPRESSION	A-LIGN	COPPER AIR BRAKE	NYLON AIR BRAKE
	BRASS	BRASS	BRASS	BRASS	BRASS	BRASS	BRASS	BRASS
TUBE SIZE (O.D. RANGE IN INCHES)	1/8 3/8	1/8 1	1/8 5/8	1/8 1	1/8 7/8	1/8 3/4	1/4 3/4	1/4 3/4
MAXIMUM WORKING PRESSURE (PSI) DEPENDS ON TUBING MATERIAL, O.D. WALL THICKNESS AND FITTING	500	1200	2000	2000	400	800	150	150
VIBRATION CHARACTERISTICS								
	FAIR	*	*			*	*	
	GOOD				*		*	
EXCELLENT			*					*
TUBING								
	COPPER	*		*	*	*	*	
	STEEL			*	*			
	ALUMINUM	*		*	*	*	*	
	POLYETHYLENE					*	*	
	NYLON					*	*	*
	POLYVINYL CHLORIDE (PVC)					*	*	
BUNDY			*	*	2*	2*		
CONFORMANCE								
	SAE		*	*	*	*	*	*
	ASA	*	*	*	*	*		
	ASME	*	*	*	*	*		
	DOT						*	*
APPLICATION								
	INSTRUMENTATION		*	*	*	*	*	*
	OIL-AIR-WATER	*	*	*	*	*	*	*
	REFRIGERATION				*			
	HYDRAULIC SYSTEMS		*	*	*	*		
	COOLING SYSTEMS	*	*	*	*	*	*	*
	LUBRICATION SYSTEMS	*	*	*	*	*	*	*
AIR BRAKE							*	
1 - BRASS SLEEVE * - RECOMMENDED APPLICATION 2 - TIN DIPPED								

Published literature at the time of initial publication reflects all current design, dimensions and performance data. However, in keeping with our policy of upgrading products on an on-going basis, modifications may result in changes in design, dimensions and/or performance currently shown in this catalog. Working pressures and other technical information has been prepared from sources deemed to be reliable but no responsibility can be assumed by CerroBrass for the accuracy of this information under various field conditions. It should be considered as a recommendation only and not a guarantee.

How to Install Tubing

PRECAUTIONS

1. Avoid straight line connections wherever possible, especially in short runs.
2. Design piping systems symmetrically. They are easier to install and present a neat appearance.
3. Care should be taken to eliminate stress from tubing lines. Long tubing runs should be supported by brackets or clips. All parts installed on tubing lines such as heavy fittings, valves, etc., should be bolted down to eliminate tubing fatigue.
4. Before installing tubing, inspect the tube to see that it conforms to the required specifications, is of the correct diameter and wall thickness and is not out of round.
5. Cut tube ends reasonably square and lightly deburr inside and outside edge. Chamfer on outside edge will destroy bearing of tube end on the fitting seat.
6. To avoid difficulty in assembly and disconnecting, a sufficient straight length of tube must be allowed from the end of the tube to the start of the bend.
7. Allow twice the length of the nut as a minimum.
8. Tubes should be formed to assemble with true alignment to the center line of the fittings, without distortion or tension.



Nominal Tube OD		A Single Flare Diameter				A ₁ Double Flare Diameter				B Single Flare Radius		B ₁ Double Flare Radius		C Double Flare Coined Seat Length		D _b Single Flare Coined Seat Length		D _{1b} Double Flare Wall Thickness	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	±0.01	±0.25	±0.01	±0.25	Min.	Min.	Max.	Max.	Max.	Max.
1/8	3.18	0.181	0.171	4.59	4.35	0.213	0.198	5.41	5.03	0.02	0.51	0.04	1.02	0.040	1.02	0.035	0.88	0.025	0.63
3/16	4.76	0.249	0.239	6.32	6.08	0.280	0.265	7.11	6.74	0.02	0.51	0.04	1.02	0.040	1.02	0.035	0.88	0.028	0.71
1/4	6.35	0.325	0.315	8.25	8.01	0.360	0.345	9.14	8.77	0.02	0.51	0.04	1.02	0.040	1.02	0.049	1.24	0.035	0.83
5/16	7.94	0.404	0.388	10.26	9.86	0.425	0.410	10.79	10.42	0.02	0.51	0.04	1.02	0.062	1.57	0.049	1.24	0.035	0.88
3/8	9.52	0.487	0.471	12.36	11.97	0.500	0.485	12.70	12.32	0.02	0.51	0.04	1.02	0.062	1.57	0.065	1.65	0.049	1.24
7/16	11.11	0.561	0.545	14.24	13.85	0.570	0.555	14.47	14.10	0.02	0.51	0.04	1.02	0.062	1.57	0.065	1.65	0.049	1.24
1/2	12.70	0.623	0.607	15.82	15.42	0.640	0.625	16.25	15.88	0.02	0.51	0.04	1.02	0.062	1.57	0.083	2.10	0.049	1.24
9/16	14.29	0.676	0.660	17.17	16.77	0.712	0.697	18.08	17.71	0.02	0.51	0.04	1.02	0.062	1.57	0.083	2.10	0.049	1.24
5/8	15.88	0.748	0.732	18.99	18.60	0.772	0.757	19.60	19.23	0.02	0.51	0.04	1.02	0.062	1.57	0.095	2.41	0.049	1.24
3/4	19.05	0.916	0.900	23.26	22.86	0.912	0.897	23.16	22.79	0.02	0.51	0.04	1.02	0.062	1.57	0.109	2.76	0.049	1.24
7/8	22.22	1.041	1.025	26.44	26.04	-	-	-	-	0.02	0.51	-	-	-	-	0.109	2.76	-	-
1	25.40	1.157	1.141	29.38	28.99	-	-	-	-	0.02	0.51	-	-	-	-	0.120	3.04	-	-

Manufacturing Techniques

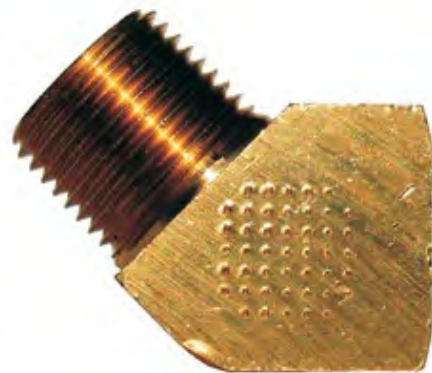


Forged Fittings

Brass for forged fittings is extruded into round bars, cut to length and then straightened. After straightening, the bars are cut into short lengths (slugs), reheated to the pliable state and pressed between upper and lower die cavities at a pressure in excess of 25,000 pounds per square inch. After cooling, the excess material is trimmed away and the forged blank is ready for machining. This process produces a uniform piece of brass with exceptional strength. Because the grain flow follows the contour of the blank, the finished fitting has high impact strength and is resistant to mechanical shock and vibration.

Extruded Fittings

Special shaped bars, as well as hexagon and round bars, are extruded to the required shape, then drawn to size, cut to length and straightened. To do this, the solid, round billet, varying from 8 to 12 inches in diameter, is heated and then forced by a pressure of approximately 80,000 pounds per square inch through a die of the desired shape. The resulting bar is cooled and then drawn again through additional dies to the desired shape. After straightening, the bar is ready for machining. The process produces a dense, non-porous material.



CerroBrass Dry Seal Pipe Thread

Dryseal Pipe Threads

Pipe threads are made to the Dryseal USA (American) Standard Taper Pipe Thread standard, known as NPTF, which seals joints pressure tight.

The dryseal pipe thread roots are wider than the crests. When the threads are wrenched together, the roots crush the sharper crests of the mating threads. This forms a metal to metal seat. Dryseal threads improve the seating characteristics, especially when a thread sealant is used.

Dryseal pipe threads hand-tight.	Dryseal pipe threads wrench-tight. Seals tightly on all sides for positive sealing action.	Regular pipe threads hand-tight. Seals joints on the sides only and does not prevent spiral leakage.






















































Decimal and Metric Equivalents of Fractions

FRACTION	DECIMAL	METRIC (mm)	FRACTION	DECIMAL	METRIC (mm)
1/64	0.0156	0.397	33/64	0.5156	13.097
1/32	0.0313	0.794	17/32	0.5313	13.494
3/64	0.0469	1.191	35/64	0.5469	13.891
1/16	0.0625	1.588	9/16	0.5625	14.288
5/64	0.0781	1.984	37/64	0.5781	14.684
3/32	0.0938	2.381	19/32	0.5938	15.081
7/64	0.1094	2.778	39/64	0.6094	15.478
1/8	0.1250	3.175	5/8	0.6250	15.875
9/64	0.1406	3.572	41/64	0.6406	16.272
5/32	0.1562	3.969	21/32	0.6562	16.669
11/64	0.1719	4.366	43/64	0.6719	17.066
3/16	0.1875	4.762	11/16	0.6875	17.462
13/64	0.2031	5.159	45/64	0.7031	17.859
7/32	0.2188	5.556	23/32	0.7188	18.256
15/64	0.2344	5.953	47/64	0.7344	18.653
1/4	0.2500	6.350	3/4	0.7500	19.050
17/64	0.2656	6.747	49/64	0.7656	19.447
9/32	0.2812	7.144	25/32	0.7812	19.844
19/64	0.2969	7.541	51/64	0.7969	20.241
5/16	0.3125	7.938	13/16	0.8125	20.638
21/64	0.3281	8.334	53/64	0.8281	21.034
11/32	0.3438	8.731	27/32	0.8438	21.431
23/64	0.3594	9.128	55/64	0.8594	21.828
3/8	0.3750	9.525	7/8	0.8750	22.225
25/64	0.3906	9.922	57/64	0.8906	22.822
13/32	0.4062	10.319	29/32	0.9062	23.019
27/64	0.4219	10.716	59/64	0.9219	23.416
7/16	0.4375	11.112	15/16	0.9375	23.812
29/64	0.4531	11.509	61/64	0.9531	24.209
15/32	0.4688	11.906	31/32	0.9688	24.606
31/64	0.4844	12.303	63/64	0.9844	25.003
1/2	0.5000	12.700	1	1.0000	25.400















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SAE 45° Flare	P-B1  Pg. 15	P-B2  Pg. 15	P-C1  Pg. 15	P-DE3  Pg. 15	P-E1  Pg. 16	P-E1-45  Pg. 16		
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	P-NS4  Pg. 19	P-NSR4  Pg. 19	P-P2  Pg. 19	P-T1  Pg. 20	P-T2  Pg. 20	P-T3  Pg. 20	P-TR2  Pg. 21	
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	P-109RB  Pg. 40	P-110RB  Pg. 40	P-112RB  Pg. 40	P-116RB  Pg. 41	P-119RB  Pg. 41	P-124RB  Pg. 41
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A-Lign Compression	P-961A  Pg. 52					
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	P-66NAB  Pg. 55	P-VS68NAB  Pg. 55	P-VS69NAB  Pg. 55	P-70NAB  Pg. 56	P-VS71NAB  Pg. 56	P-VS72NAB  Pg. 56

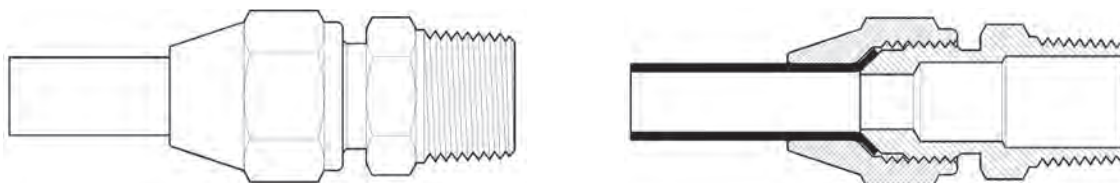
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SAE 45° Flare



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8
Thread	5/16-24	3/8-24	7/16-20	1/2-20	5/8-18	11/16-16	3/4-16	7/8-14	1-1/16-14	1-1/4-12

MATERIALS:

CA360, CA345, CA377

VIBRATION RESISTANCE:

Short Nut - Fair, Long Nut - Improved

WORKING PRESSURE:

2000 PSI Maximum based on tubing size
ALWAYS consult tubing specifications

TEMPERATURE RANGE:

-65 to +250°F
-54 to +121°C

CONFORMANCE:

Meets SAE, ASME and ASA Standards as noted by configuration.

APPLICATIONS:

LP Gas, refrigeration, natural gas, instrumentation, pneumatic systems, and other applications where copper, brass, aluminum and steel tubing are used.

TUBING MUST BE ABLE TO BE FLARED.

HOW TO ORDER:

- Order nuts and bodies separately.
- Some items available on Special Order basis only.

NOMENCLATURE:

P-E1-6B

- E1: Fitting Configuration
- 6: Tube Size in sixteenths (6/16 = 3/8)
- B: Pipe Size 1/4"
- Dimensions subject to change without notice

BENEFIT:

- Reduces maintenance costs and assembly time.
- Reduces the number of SKU's required to cover needs.
- More sales opportunities.

FEATURE:

- Reusable body and nut.
- Long nut vibration resistance.
- Extruded and Forged available.

ADVANTAGE:

- No need to replace when disassembling.
- Applicable in wider range of applications.
- Conforms to more customers' requirements.

ASSEMBLY INSTRUCTIONS:

- Cut tubing squarely and remove burrs.
- Slide nut on tubing, threaded end out.
- Flare tubing.
- Lubricate threads.
- Tighten nut onto body with wrench until snug plus 1/6 turn.

DO NOT OVER TIGHTEN OR TUBING MAY SPLIT

SAE 45° Flare

P-B1 BONNET COPPER

PART NUMBER	O.D. TUBE
P-B1-4	1/4 in
P-B1-6	3/8 in
P-B1-8	1/2 in
P-B1-10	5/8 in



P-B2 GASKET COPPER

PART NUMBER	O.D. TUBE
P-B2-4	1/4 in
P-B2-6	3/8 in
P-B2-8	1/2 in
P-B2-10	5/8 in



P-C1 CROSS, TUBE ALL ENDS

PART NUMBER	O.D. TUBE
P-C1-4444	1/4 in
P-C1-6666	3/8 in
P-C1-8888	1/2 in
P-C1-101010	5/8 in



P-DE3 DROP EAR ELBOW, TUBE TO FPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-DE3-6D	3/8 in	1/2 in
P-DE3-8D	1/2 in	1/2 in
P-DE3-10D	5/8 in	1/2 in



SAE 45° Flare



FOR REFERENCE ONLY -
SAE 010202

P-E1 ELBOW 90° TUBE TO MPT 49 SERIES

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-E1-3A	3/16 in	1/8 in
P-E1-3B	3/16 in	1/4 in
P-E1-4A	1/4 in	1/8 in
P-E1-4B	1/4 in	1/4 in
P-E1-4C	1/4 in	3/8 in
P-E1-4D	1/4 in	1/2 in
P-E1-5A	5/16 in	1/8 in
P-E1-5B	5/16 in	1/4 in
P-E1-5C	5/16 in	3/8 in
P-E1-6A	3/8 in	1/8 in
P-E1-6B	3/8 in	1/4 in
P-E1-6C	3/8 in	3/8 in
P-E1-6D	3/8 in	1/2 in
P-E1-6E	3/8 in	3/4 in
P-E1-8B	1/2 in	1/4 in
P-E1-8C	1/2 in	3/8 in
P-E1-8D	1/2 in	1/2 in
P-E1-8E	1/2 in	3/4 in
P-E1-10B	5/8 in	1/4 in
P-E1-10C	5/8 in	3/8 in
P-E1-10D	5/8 in	1/2 in
P-E1-10E	5/8 in	3/4 in
P-E1-12C	3/4 in	3/8 in
P-E1-12D	3/4 in	1/2 in
P-E1-12E	3/4 in	3/4 in
P-E1-14E	7/8 in	3/4 in
P-E1-16E	1 in	3/4 in
P-E1-16F	1 in	1 in



FOR REFERENCE ONLY -
SAE 010302

P-E1-45 ELBOW 45° TUBE TO MPT 59 SERIES

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-E1-45-4A	1/4 in	1/8 in
P-E1-45-4B	1/4 in	1/4 in
P-E1-45-5A	5/16 in	1/8 in
P-E1-45-5B	5/16 in	1/4 in
P-E1-45-6B	3/8 in	1/4 in
P-E1-45-6C	3/8 in	3/8 in
P-E1-45-6D	3/8 in	1/2 in
P-E1-45-8C	1/2 in	3/8 in
P-E1-45-8D	1/2 in	1/2 in
P-E1-45-10C	5/8 in	3/8 in
P-E1-45-10D	5/8 in	1/2 in
P-E1-45-12D	3/4 in	1/2 in
P-E1-45-12E	3/4 in	3/4 in

SAE 45° Flare

P-E2 ELBOW, TUBE BOTH ENDS 55 SERIES

PART NUMBER	O.D. TUBE
P-E2-4	1/4 in
P-E2-5	5/16 in
P-E2-6	3/8 in
P-E2-8	1/2 in
P-E2-10	5/8 in



FOR REFERENCE ONLY -
SAE 010201

P-E3 ELBOW, TUBE TO FPT 50 SERIES

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-E3-4A	1/4 in	1/8 in
P-E3-4B	1/4 in	1/4 in
P-E3-4C	1/4 in	3/8 in
P-E3-5A	5/16 in	1/8 in
P-E3-5B	5/16 in	1/4 in
P-E3-6A	3/8 in	1/8 in
P-E3-6B	3/8 in	1/4 in
P-E3-6C	3/8 in	3/8 in
P-E3-6D	3/8 in	1/2 in
P-E3-6E	3/8 in	3/4 in
P-E3-8B	1/2 in	1/4 in
P-E3-8C	1/2 in	3/8 in
P-E3-8D	1/2 in	1/2 in
P-E3-8E	1/2 in	3/4 in
P-E3-10C	5/8 in	3/8 in
P-E3-10D	5/8 in	1/2 in
P-E3-10E	5/8 in	3/4 in



FOR REFERENCE ONLY -
SAE 010203

P-E4 ELBOW, TUBE TO FEMALE FLARE

PART NUMBER	O.D. TUBE
P-E4-44	1/4 in x 1/4 in
P-E4-66	3/8 in x 3/8 in



SAE 45° Flare



P-N1 MACHINED NUT, SHORT 41 SERIES

PART NUMBER	O.D. TUBE
P-N1-2	1/8 in
P-N1-3	3/16 in
P-N1-4	1/4 in
P-N1-5	5/16 in
P-N1-6	3/8 in
P-N1-8	1/2 in
P-N1-10	5/8 in
P-N1-12	3/4 in
P-N1-14	7/8 in



FOR REFERENCE ONLY -
SAE 010111

P-N2 MACHINED NUT, LONG

PART NUMBER	O.D. TUBE
P-N2-3	3/16 in
P-N2-4	1/4 in
P-N2-5	5/16 in
P-N2-6	3/8 in
P-N2-8	1/2 in
P-N2-10	5/8 in
P-N2-12	3/4 in



FOR REFERENCE ONLY -
SAE 010167

P-N4 FORGED NUT, LONG

PART NUMBER	O.D. TUBE
P-N4-4	1/4 in
P-N4-6	3/8 in
P-N4-8	1/2 in
P-N4-10	5/8 in
P-N4-12	3/4 in



Use with P-B2-Copper Gasket

P-N5 CAP, 40 SERIES

PART NUMBER	O.D. TUBE
P-N5-4	1/4 in
P-N5-5	5/16 in
P-N5-6	3/8 in
P-N5-8	1/2 in
P-N5-10	5/8 in
P-N5-12	3/4 in

SAE 45° Flare

P-NS4 FORGED NUT, SHORT

PART NUMBER	O.D. TUBE
P-NS4-4	1/4 in
P-NS4-5	5/16 in
P-NS4-6	3/8 in
P-NS4-8	1/2 in
P-NS4-10	5/8 in
P-NS4-12	3/4 in
P-NS4-14	7/8 in

**P-NSR4** FORGED NUT, SHORT REDUCING

PART NUMBER	O.D. TUBE
P-NSR4-64	3/8 in x 1/4 in
P-NSR4-65	3/8 in x 5/16 in
P-NSR4-86	1/2 in x 3/8 in
P-NSR4-106	5/8 in x 3/8 in
P-NSR4-108	5/8 in x 1/2 in

**P-P2** PLUG, 39 SERIES

PART NUMBER	O.D. TUBE
P-P2-4	1/4 in
P-P2-5	5/16 in
P-P2-6	3/8 in
P-P2-8	1/2 in
P-P2-10	5/8 in
P-P2-12	3/4 in



SAE 45° Flare



FOR REFERENCE ONLY -
SAE 010425

P-T1 MALE BRANCH TEE, TUBE TO TUBE MPT 45 SERIES

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-T1-4A	1/4 in	1/8 in
P-T1-4B	1/4 in	1/4 in
P-T1-4C	1/4 in	3/8 in
P-T1-5A	5/16 in	1/8 in
P-T1-5B	5/16 in	1/4 in
P-T1-6A	3/8 in	1/8 in
P-T1-6B	3/8 in	1/4 in
P-T1-6C	3/8 in	3/8 in
P-T1-6D	3/8 in	1/2 in
P-T1-8C	1/2 in	3/8 in
P-T1-8D	1/2 in	1/2 in
P-T1-10C	5/8 in	3/8 in
P-T1-10D	5/8 in	1/2 in
P-T1-12D	3/4 in	1/2 in



FOR REFERENCE ONLY -
SAE 010401

P-T2 TEE, TUBE ALL ENDS 44 SERIES

PART NUMBER	O.D. TUBE
P-T2-4	1/4 in
P-T2-5	5/16 in
P-T2-6	3/8 in
P-T2-8	1/2 in
P-T2-10	5/8 in
P-T2-12	3/4 in



FOR REFERENCE ONLY -
SAE 010424

P-T3 MALE RUN TEE, TUBE TO MPT TO TUBE 51 SERIES

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-T3-3A	3/16 in	1/8 in
P-T3-4A	1/4 in	1/8 in
P-T3-4B	1/4 in	1/4 in
P-T3-4C	1/4 in	3/8 in
P-T3-5A	5/16 in	1/8 in
P-T3-5B	5/16 in	1/4 in
P-T3-6A	3/8 in	1/8 in
P-T3-6B	3/8 in	1/4 in
P-T3-6C	3/8 in	3/8 in
P-T3-6D	3/8 in	1/2 in
P-T3-8C	1/2 in	3/8 in
P-T3-8D	1/2 in	1/2 in

SAE 45° Flare

P-TR2 TEE, REDUCING FLARE ALL ENDS 44 SERIES

PART NUMBER	O.D. TUBE
P-TR2-446	1/4 in x 1/4 in x 3/8 in
P-TR2-464	1/4 in x 3/8 in x 1/4 in
P-TR2-466	1/4 in x 3/8 in x 3/8 in
P-TR2-664	3/8 in x 3/8 in x 1/4 in
P-TR2-668	3/8 in x 3/8 in x 1/2 in
P-TR2-6610	3/8 in x 3/8 in x 5/8 in
P-TR2-686	3/8 in x 1/2 in x 3/8 in
P-TR2-6106	3/8 in x 5/8 in x 3/8 in
P-TR2-868	1/2 in x 3/8 in x 1/2 in
P-TR2-884	1/2 in x 1/2 in x 1/4 in
P-TR2-886	1/2 in x 1/2 in x 3/8 in
P-TR2-8810	1/2 in x 1/2 in x 5/8 in
P-TR2-10106	5/8 in x 5/8 in x 3/8 in
P-TR2-10108	5/8 in x 5/8 in x 1/2 in
P-TR2-10810	5/8 in x 1/2 in x 5/8 in



FOR REFERENCE ONLY -
SAE 010401

P-U1 CONNECTOR, TUBE TO MPT 48 SERIES

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-U1-2A	1/8 in	1/8 in
P-U1-3A	3/16 in	1/8 in
P-U1-4A	1/4 in	1/8 in
P-U1-4B	1/4 in	1/4 in
P-U1-4C	1/4 in	3/8 in
P-U1-4D	1/4 in	1/2 in
P-U1-5A	5/16 in	1/8 in
P-U1-5B	5/16 in	1/4 in
P-U1-5C	5/16 in	3/8 in
P-U1-6A	3/8 in	1/8 in
P-U1-6B	3/8 in	1/4 in
P-U1-6C	3/8 in	3/8 in
P-U1-6D	3/8 in	1/2 in
P-U1-6E	3/8 in	3/4 in
P-U1-8B	1/2 in	1/4 in
P-U1-8C	1/2 in	3/8 in
P-U1-8D	1/2 in	1/2 in
P-U1-8E	1/2 in	3/4 in
P-U1-10C	5/8 in	3/8 in
P-U1-10D	5/8 in	1/2 in
P-U1-10E	5/8 in	3/4 in
P-U1-12D	3/4 in	1/2 in
P-U1-12E	3/4 in	3/4 in
P-U1-14E	7/8 in	3/4 in



FOR REFERENCE ONLY -
SAE 010202

SAE 45° Flare



FOR REFERENCE ONLY -
SAE 010101

P-U2 UNION, TUBE BOTH ENDS 42 SERIES

PART NUMBER	O.D. TUBE
P-U2-3	3/16 in
P-U2-4	1/4 in
P-U2-5	5/16 in
P-U2-6	3/8 in
P-U2-8	1/2 in
P-U2-10	5/8 in
P-U2-12	3/4 in



FOR REFERENCE ONLY -
SAE 010103

P-U3 ADAPTER, TUBE TO FPT 46 SERIES

PART NUMBER	O.D. TUBE FEMALE FLARE	PIPE THREAD SIZE
P-U3-3A	3/16 in	1/8 in
P-U3-4A	1/4 in	1/8 in
P-U3-4B	1/4 in	1/4 in
P-U3-4C	1/4 in	3/8 in
P-U3-5A	5/16 in	1/8 in
P-U3-5B	5/16 in	1/4 in
P-U3-6A	3/8 in	1/8 in
P-U3-6B	3/8 in	1/4 in
P-U3-6C	3/8 in	3/8 in
P-U3-6D	3/8 in	1/2 in
P-U3-6E	3/8 in	3/4 in
P-U3-8B	1/2 in	1/4 in
P-U3-8C	1/2 in	3/8 in
P-U3-8D	1/2 in	1/2 in
P-U3-8E	1/2 in	3/4 in
P-U3-10C	5/8 in	3/8 in
P-U3-10D	5/8 in	1/2 in
P-U3-10E	5/8 in	3/4 in
P-U3-12D	3/4 in	1/2 in
P-U3-12E	3/4 in	3/4 in



FOR REFERENCE ONLY -
SAE 010101

P-UR2 UNION, REDUCING TUBE BOTH ENDS 42 SERIES

PART NUMBER	O.D. TUBE
P-UR2-64	3/8 x 1/4 in
P-UR2-86	1/2 x 3/8 in
P-UR2-106	5/8 x 3/8 in
P-UR2-108	5/8 x 1/2 in
P-UR2-128	3/4 x 1/2 in
P-UR2-1210	3/4 x 5/8 in

SAE 45° Flare

P-UR3 REDUCER, FEMALE FLARE TO MALE FLARE

PART NUMBER	O.D. TUBE FEMALE FLARE	O.D. TUBE MALE FLARE
P-UR3-46	1/4 in	3/8 in
P-UR3-64	3/8 in	1/4 in
P-UR3-68	3/8 in	1/2 in
P-UR3-86	1/2 in	3/8 in
P-UR3-810	1/2 in	5/8 in
P-UR3-108	5/8 in	1/2 in



FOR REFERENCE ONLY -
SAE 010105

P-US4 SWIVEL CONNECTOR, FLARE BOTH ENDS

PART NUMBER	O.D. TUBE
P-US4-4	1/4 in x 1/4 in
P-US4-5	5/16 in x 5/16 in
P-US4-6	3/8 in x 3/8 in
P-US4-64	3/8 in x 1/4 in
P-US4-8	1/2 in x 1/2 in
P-US4-86	1/2 in x 3/8 in
P-US4-10	5/8 in x 5/8 in
P-US4-108	5/8 in x 1/2 in
P-US4-12	3/4 in x 3/4 in



P-E3GA GAS APPLIANCE ADAPTER ELBOW, TUBE TO FPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-E3GA-10E	15/16 in	3/4 in

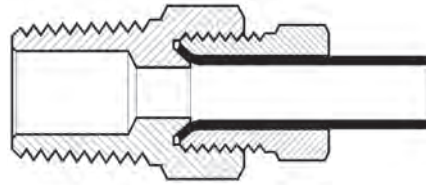
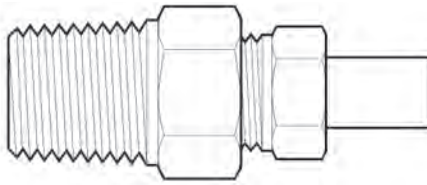


P-N5GA GAS APPLIANCE CAP

PART NUMBER	O.D. TUBE
P-N5GA-10	15/16 in



Inverted Flare



Tube O.D.	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4
Thread Size	5/16-28	3/8-24	7/16-24	1/2-20	5/8-18	3/4-16	7/8-18	1-1/16-18

MATERIALS:

CA360, CA345
411S Nuts are zinc dichromate

VIBRATION RESISTANCE:

Good

WORKING PRESSURE:

2000 PSI Maximum based on tubing size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-65 to +250°F
-54 to +121°C

CONFORMANCE:

Meets SAE, ASME and ASA Standards as noted by configuration.

APPLICATIONS:

Hydraulic brake lines, fuel lines, transmission oil cooler lines, and other applications where copper, brass, aluminum and steel tubing are used.

TUBING MUST BE ABLE TO BE FLARED.

HOW TO ORDER:

- Order nuts and bodies separately.
- Some items available on Special Order basis only.

NOMENCLATURE:

P-46I-6B

- 46I: Fitting Configuration
- 6: Tube Size in sixteenths ($6/16 = 3/8$)
- B: Pipe Thread Size in sixteenths ($2/16 = 1/4$)

Dimensions subject to change without notice

BENEFIT:

- Reduces maintenance costs and assembly time.
- Lowers maintenance frequency and costs.
- Reduces weight and size of systems.

FEATURE:

- Reusable body and nut.
- Resists mechanical pull-out.
- Compact tube bends.

ADVANTAGE:

- No need to replace when disassembling.
- Longer service life in vehicular applications.
- Fits tighter installation envelopes.

ASSEMBLY INSTRUCTIONS:

- Cut tubing squarely and remove burrs.
- Slide nut on tubing, threaded end out.
- Flare tubing.
- Lubricate threads.
- Position flare against the nose of the fitting.
- Assemble nut to body finger tight, plus 1/6 turn.

DO NOT OVER TIGHTEN OR TUBING MAY SPLIT

Inverted Flare



FOR REFERENCE ONLY -
SAE 040110

P-411B NUT, BRASS

PART NUMBER	O.D. TUBE
P-411B-4	1/4 in
P-411B-5	5/16 in
P-411B-6	3/8 in
P-411B-8	1/2 in
P-411B-10	5/8 in



FOR REFERENCE ONLY -
SAE 040110

P-411S NUT, ZINC DICHROMATE

PART NUMBER	O.D. TUBE
P-411S-4	1/4 in
P-411S-5	5/16 in
P-411S-6	3/8 in



FOR REFERENCE ONLY -
SAE 040101

P-421 NUT, BRASS

PART NUMBER	O.D. TUBE
P-421-3	3/16 in
P-421-4	1/4 in
P-421-5	5/16 in
P-421-6	3/8 in
P-421-8	1/2 in



FOR REFERENCE ONLY -
SAE 040103

P-461 ADAPTER, TUBE TO FPT

PART NUMBER	O.D. TUBE FEMALE FLARE	PIPE THREAD SIZE
P-461-3A	3/16 in	1/8 in
P-461-4A	1/4 in	1/8 in

Inverted Flare

P-48I CONNECTOR, TUBE TO MPT

PART NUMBER	O.D. TUBE FEMALE FLARE	PIPE THREAD SIZE
P-48I-3A	3/16 in	1/8 in
P-48I-4A	1/4 in	1/8 in
P-48I-4B	1/4 in	1/4 in
P-48I-5A	5/16 in	1/8 in
P-48I-5B	5/16 in	1/4 in
P-48I-6A	3/8 in	1/8 in
P-48I-6B	3/8 in	1/4 in
P-48I-6C	3/8 in	3/8 in
P-48I-8B	1/2 in	1/4 in
P-48I-8C	1/2 in	3/8 in
P-48I-8D	1/2 in	1/2 in
P-48I-10D	5/8 in	1/2 in



FOR REFERENCE ONLY -
SAE 040102

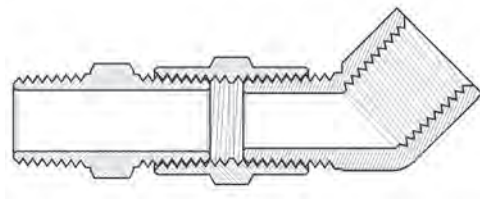
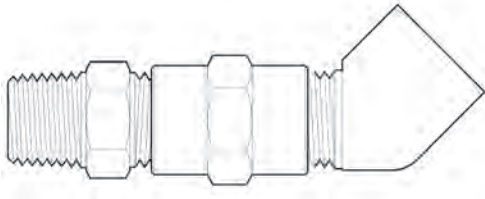
P-49I ELBOW, 90° TUBE TO MPT

PART NUMBER	O.D. TUBE FEMALE FLARE	PIPE THREAD SIZE
P-49I-3A	3/16 in	1/8 in
P-49I-4A	1/4 in	1/8 in
P-49I-4B	1/4 in	1/4 in
P-49I-5A	5/16 in	1/8 in
P-49I-5B	5/16 in	1/4 in
P-49I-6A	3/8 in	1/8 in
P-49I-6B	3/8 in	1/4 in
P-49I-6C	3/8 in	3/8 in
P-49I-8B	1/2 in	1/4 in
P-49I-8C	1/2 in	3/8 in
P-49I-8D	1/2 in	1/2 in
P-49I-10D	5/8 in	1/2 in



FOR REFERENCE ONLY -
SAE 040202

Pipe



Tube O.D.	1/8	1/4	3/8	1/2	3/4	1
Thread Size	1/8-27	1/4-18	3/8-18	1/2-14	3/4-14	1-11 1/2

MATERIALS:

CA360, CA345, CA377

VIBRATION RESISTANCE:

Fair

WORKING PRESSURE:

1,200 PSI Maximum based on size.
ALWAYS consult tubing/pipe specifications.

TEMPERATURE RANGE:

-65 to +250°F
-54 to +121°C

CONFORMANCE:

Meets functional requirements of SAE as indicated by configuration.

APPLICATIONS:

Air, oil, water, hydraulic fluid, lubricant and other applications which use brass, copper, and iron pipe.

HOW TO ORDER:

- Item specific notes indicated throughout.
- Some items available on Special Order basis only.

NOMENCLATURE:

P-100A-A

- 100A: Fitting Configuration
- A: Pipe Size 1/8"
- Dimensions subject to change without notice.
- Contained in nomenclature indicates extruded style.

BENEFIT:

- Lowers costs based on fewer vendors.
- Reduces maintenance costs and unsightly leaks.
- More sales opportunities.

FEATURE:

- Wide range of sizes and styles.
- Extruded and Forged available.

ADVANTAGE:

- One-stop shop for all needs.
- Fewer leaks in the system.
- Conforms to more customers' requirements.

ASSEMBLY INSTRUCTIONS:

- Tighten male to female, finger tight.
- Tighten with a wrench as follows:
1/8" - 1/2" 2 Additional Turns
3/4" + 2-1/2 Additional Turns

DO NOT OVER TIGHTEN OR TUBING MAY SPLIT

Pipe

P-100A ELBOW, 90° FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-100A-A	1/8 in
P-100A-B	1/4 in
P-100A-BA	1/4 in x 1/8 in
P-100A-C	3/8 in
P-100A-CB	3/8 in x 1/4 in
P-100A-D	1/2 in
P-100A-DC	1/2 in x 3/8 in
P-100A-E	3/4 in



FOR REFERENCE ONLY -
SAE 130238

P-100X EXTRUDED ELBOW, 90° FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-100X-A	1/8 in
P-100X-B	1/4 in
P-100X-C	3/8 in
P-100X-D	1/2 in
P-100X-E	3/4 in



P-100A-45 ELBOW, 45° FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-100A-45-A	1/8 in
P-100A-45-B	1/4 in
P-100A-45-C	3/8 in



P-100X-45 EXTRUDED ELBOW, 45° FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-100X-45-A	1/8 in
P-100X-45-B	1/4 in



P-101A TEE, FPT ALL ENDS

PART NUMBER	PIPE THREAD SIZE
P-101A-A	1/8 in
P-101A-B	1/4 in
P-101A-BBA	1/4 in x 1/4 in x 1/8 in
P-101A-C	3/8 in
P-101A-D	1/2 in
P-101A-DDC	1/2 in x 1/2 in x 3/8 in
P-101A-E	3/4 in



FOR REFERENCE ONLY -
SAE 130438

Pipe



P-101X EXTRUDED TEE, FPT ALL ENDS

PART NUMBER	PIPE THREAD SIZE
P-101X-A	1/8 in
P-101X-B	1/4 in
P-101X-C	3/8 in
P-101X-D	1/2 in
P-101X-E	3/4 in



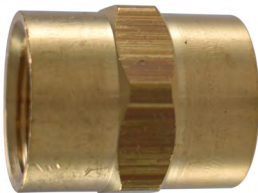
P-102A CROSS, FPT ALL ENDS

PART NUMBER	PIPE THREAD SIZE
P-102A-A	1/8 in
P-102A-B	1/4 in
P-102A-C	3/8 in
P-102A-D	1/2 in



P-102X EXTRUDED CROSS, FPT ALL ENDS

PART NUMBER	PIPE THREAD SIZE
P-102X-A	1/8 in
P-102X-B	1/4 in
P-102X-C	3/8 in
P-102X-D	1/2 in



P-103A COUPLING, FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-103A-A	1/8 in
P-103A-B	1/4 in
P-103A-C	3/8 in
P-103A-D	1/2 in
P-103A-E	3/4 in



P-103AH COUPLING, FPT TO FPT HEAVY PATTERN

PART NUMBER	PIPE THREAD SIZE
P-103AH-A	1/8 in
P-103AH-B	1/4 in
P-103AH-C	3/8 in
P-103AH-D	1/2 in
P-103AH-E	3/4 in

FOR REFERENCE ONLY -
SAE 130138

Pipe

P-104A UNION, FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-104A-A	1/8 in
P-104A-B	1/4 in
P-104A-C	3/8 in
P-104A-D	1/2 in
P-104A-E	3/4 in



P-108A CAP

PART NUMBER	PIPE THREAD SIZE
P-108A-A	1/8 in
P-108A-B	1/4 in
P-108A-C	3/8 in
P-108A-D	1/2 in
P-108A-E	3/4 in



P-109A SQUARE HEAD PLUG, CORED

PART NUMBER	PIPE THREAD SIZE
P-109A-A	1/8 in
P-109A-B	1/4 in
P-109A-C	3/8 in
P-109A-D	1/2 in
P-109A-E	3/4 in
P-109A-F	1 in



P-109AS SQUARE HEAD PLUG, SOLID, MPT

PART NUMBER	PIPE THREAD SIZE
P-109AS-D	1/2 in
P-109AS-E	3/4 in
P-109AS-F	1 in



Pipe



P-109CS COUNTER-SUNK PLUG, MPT

PART NUMBER	PIPE THREAD SIZE
P-109CS-A	1/8 in
P-109CS-B	1/4 in
P-109CS-C	3/8 in
P-109CS-D	1/2 in
P-109CS-E	3/4 in



P-110A HEX BRUSHING, MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-110A-BA	1/4 in x 1/8 in
P-110A-CA	3/8 in x 1/8 in
P-110A-CB	3/8 in x 1/4 in
P-110A-DA	1/2 in x 1/8 in
P-110A-DB	1/2 in x 1/4 in
P-110A-DC	1/2 in x 3/8 in
P-110A-EA	3/4 in x 1/8 in
P-110A-EB	3/4 in x 1/4 in
P-110A-EC	3/4 in x 3/8 in
P-110A-ED	3/4 in x 1/2 in
P-110A-FB	1 in x 1/4 in
P-110A-FC	1 in x 3/8 in
P-110A-FD	1 in x 1/2 in
P-110A-FE	1 in x 3/4 in



FOR REFERENCE ONLY -
SAE 130140

P-110AH HEX BRUSHING, MPT TO FPT HEAVY PATTERN

PART NUMBER	PIPE THREAD SIZE
P-110AH-BA	1/4 in x 1/8 in
P-110AH-CA	3/8 in x 1/8 in
P-110AH-CB	3/8 in x 1/4 in
P-110AH-DA	1/2 in x 1/8 in
P-110AH-DB	1/2 in x 1/4 in
P-110AH-DC	1/2 in x 3/8 in
P-110AH-EA	3/4 in x 1/8 in
P-110AH-EB	3/4 in x 1/4 in
P-110AH-EC	3/4 in x 3/8 in
P-110AH-ED	3/4 in x 1/2 in



P-110FB FACE BUSHING, MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-110FB-CB	3/8 in x 1/4 in
P-110FB-DB	1/2 in x 1/4 in
P-110FB-DC	1/2 in x 3/8 in
P-110FB-ED	3/4 in x 1/2 in

Pipe

P-111A LOCK NUT

PART NUMBER	PIPE THREAD SIZE
P-111A-A	1/8 in
P-111A-B	1/4 in
P-111A-C	3/8 in
P-111A-D	1/2 in
P-111A-E	3/4 in



P-112A CLOSE NIPPLE

PART NUMBER	PIPE THREAD SIZE
P-112A-A	1/8 in
P-112A-B	1/4 in
P-112A-C	3/8 in
P-112A-D	1/2 in
P-112A-E	3/4 in
P-112A-F	1 in



P-113A LONG NIPPLE YELLOW BRASS

PART NUMBER	PIPE THREAD SIZE	LENGTH
P-113A-A15	1/8 in	1-1/2 in
P-113A-B15	1/4 in	1-1/2 in
P-113A-C15	3/8 in	1-1/2 in
P-113A-D15	1/2 in	1-1/2 in
P-113A-E15	3/4 in	1-1/2 in
P-113A-A2	1/8 in	2 in
P-113A-B2	1/4 in	2 in
P-113A-C2	3/8 in	2 in
P-113A-D2	1/2 in	2 in
P-113A-E2	3/4 in	2 in



Pipe



P-113RB LONG NIPPLE RED BRASS

PART NUMBER	PIPE THREAD SIZE	LENGTH	PART NUMBER	PIPE THREAD SIZE	LENGTH
P-113RB-A25	1/8 in	2-1/2 in	P-113RB-A5	1/8 in	5 in
P-113RB-B25	1/4 in	2-1/2 in	P-113RB-B5	1/4 in	5 in
P-113RB-C25	3/8 in	2-1/2 in	P-113RB-C5	3/8 in	5 in
P-113RB-D25	1/2 in	2-1/2 in	P-113RB-D5	1/2 in	5 in
P-113RB-E25	3/4 in	2-1/2 in	P-113RB-E5	3/4 in	5 in
P-113RB-A3	1/8 in	3 in	P-113RB-A55	1/8 in	5-1/2 in
P-113RB-B3	1/4 in	3 in	P-113RB-B55	1/4 in	5-1/2 in
P-113RB-C3	3/8 in	3 in	P-113RB-C55	3/8 in	5-1/2 in
P-113RB-D3	1/2 in	3 in	P-113RB-D55	1/2 in	5-1/2 in
P-113RB-E3	3/4 in	3 in	P-113RB-E55	3/4 in	5-1/2 in
P-113RB-A35	1/8 in	3-1/2 in	P-113RB-A6	1/8 in	6 in
P-113RB-B35	1/4 in	3-1/2 in	P-113RB-B6	1/4 in	6 in
P-113RB-C35	3/8 in	3-1/2 in	P-113RB-C6	3/8 in	6 in
P-113RB-D35	1/2 in	3-1/2 in	P-113RB-D6	1/2 in	6 in
P-113RB-E35	3/4 in	3-1/2 in	P-113RB-E6	3/4 in	6 in
P-113RB-A4	1/8 in	4 in	P-113RB-A7	1/8 in	7 in
P-113RB-B4	1/4 in	4 in	P-113RB-B7	1/4 in	7 in
P-113RB-C4	3/8 in	4 in	P-113RB-C7	3/8 in	7 in
P-113RB-D4	1/2 in	4 in	P-113RB-D7	1/2 in	7 in
P-113RB-E4	3/4 in	4 in	P-113RB-E7	3/4 in	7 in
P-113RB-A45	1/8 in	4-1/2 in			
P-113RB-B45	1/4 in	4-1/2 in			
P-113RB-C45	3/8 in	4-1/2 in			
P-113RB-D45	1/2 in	4-1/2 in			
P-113RB-E45	3/4 in	4-1/2 in			



FOR REFERENCE ONLY -
SAE 130239

P-116A STREET ELBOW, 90° MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-116A-A	1/8 in
P-116A-B	1/4 in
P-116A-C	3/8 in
P-116A-D	1/2 in
P-116A-E	3/4 in

Pipe

P-116AL STREET ELBOW, 90° MPT TO FPT LONG PATTERN

PART NUMBER	PIPE THREAD SIZE
P-116AL-A	1/8 in
P-116AL-B	1/4 in
P-116AL-C	3/8 in



P-116AM MALE ELBOW, MPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-116AM-A	1/8 in
P-116AM-B	1/4 in
P-116AM-BA	1/4 in x 1/8 in
P-116AM-C	3/8 in
P-116AM-CB	3/8 in x 1/4 in
P-116AM-D	1/2 in
P-116AM-DC	1/2 in x 3/8 in



P-116X STREET ELBOW, 90° MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-116X-A	1/8 in
P-116X-B	1/4 in
P-116X-C	3/8 in
P-116X-D	1/2 in
P-116X-E	3/4 in



FOR REFERENCE ONLY -
SAE 130239

P-117A SLOTTED PLUG, MPT

PART NUMBER	PIPE THREAD SIZE
P-117A-A	1/8 in
P-117A-B	1/4 in
P-117A-C	3/8 in



P-119A REDUCER, FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-119A-BA	1/4 in x 1/8 in
P-119A-CA	3/8 in x 1/8 in
P-119A-CB	3/8 in x 1/4 in
P-119A-DA	1/2 in x 1/8 in
P-119A-DB	1/2 in x 1/4 in
P-119A-DC	1/2 in x 3/8 in
P-119A-ED	3/4 in x 1/2 in



Pipe



FOR REFERENCE ONLY -
SAE 130138

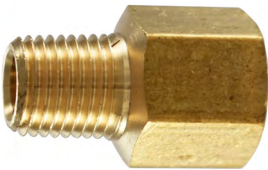
P-119AH REDUCER, FPT TO FPT HEAVY PATTERN

PART NUMBER	PIPE THREAD SIZE
P-119AH-BA	1/4 in x 1/8 in
P-119AH-CB	3/8 in x 1/4 in
P-119AH-DB	1/2 in x 1/4 in
P-119AH-DC	1/2 in x 3/8 in



P-120A ADAPTER, FPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-120A-AA	1/8 in x 1/8 in
P-120A-BA	1/4 in x 1/8 in
P-120A-BB	1/4 in x 1/4 in
P-120A-CA	3/8 in x 1/8 in
P-120A-CB	3/8 in x 1/4 in
P-120A-CC	3/8 in x 3/8 in
P-120A-DB	1/2 in x 1/4 in
P-120A-DC	1/2 in x 3/8 in
P-120A-DD	1/2 in x 1/2 in
P-120A-ED	3/4 in x 1/2 in



FOR REFERENCE ONLY -
SAE 130139

P-120AH ADAPTER, FPT TO MPT HEAVY PATTERN

PART NUMBER	PIPE THREAD SIZE
P-120AH-AA	1/8 in x 1/8 in
P-120AH-BA	1/4 in x 1/8 in
P-120AH-BB	1/4 in x 1/4 in
P-120AH-CB	3/8 in x 1/4 in
P-120AH-CC	3/8 in x 3/8 in
P-120AH-DB	1/2 in x 1/4 in
P-120AH-DC	1/2 in x 3/8 in
P-120AH-DD	1/2 in x 1/2 in



P-121A HEX HEAD PLUG, CORED

PART NUMBER	PIPE THREAD SIZE
P-121A-A	1/8 in
P-121A-B	1/4 in
P-121A-C	3/8 in
P-121A-D	1/2 in
P-121A-E	3/4 in
P-121A-F	1 in

Pipe

P-121AS HEX HEAD PLUG, SOLID

PART NUMBER	PIPE THREAD SIZE
P-121AS-A	1/8 in
P-121AS-B	1/4 in
P-121AS-C	3/8 in
P-121AS-D	1/2 in
P-121AS-E	3/4 in



P-122A HEX NIPPLE, MPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-122A-A	1/8 in
P-122A-B	1/4 in
P-122A-C	3/8 in
P-122A-D	1/2 in
P-122A-E	3/4 in



P-122AH HEX NIPPLE, MPT TO MPT HEAVY PATTERN

PART NUMBER	PIPE THREAD SIZE
P-122AH-A	1/8 in
P-122AH-B	1/4 in
P-122AH-C	3/8 in
P-122AH-D	1/2 in
P-122AH-E	3/4 in



FOR REFERENCE ONLY -
SAE 130137

P-123A HEX REDUCING NIPPLE, MPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-123A-BA	1/4 in x 1/8 in
P-123A-CA	3/8 in x 1/8 in
P-123A-CB	3/8 in x 1/4 in
P-123A-DB	1/2 in x 1/4 in
P-123A-DC	1/2 in x 3/8 in
P-123A-ED	3/4 in x 1/2 in



Pipe



FOR REFERENCE ONLY -
SAE 130137

P-123AH HEX REDUCING NIPPLE, MPT TO MPT HEAVY PATTERN

PART NUMBER	PIPE THREAD SIZE
P-123AH-BA	1/4 in x 1/8 in
P-123AH-CA	3/8 in x 1/8 in
P-123AH-CB	3/8 in x 1/4 in
P-123AH-DB	1/2 in x 1/4 in
P-123AH-DC	1/2 in x 3/8 in



FOR REFERENCE ONLY -
SAE 130339

P-124A STREET ELBOW, 45° MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-124A-A	1/8 in
P-124A-B	1/4 in
P-124A-C	3/8 in
P-124A-D	1/2 in



FOR REFERENCE ONLY -
SAE 130339

P-124X STREET ELBOW, 45° MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-124X-A	1/8 in
P-124X-B	1/4 in
P-124X-C	3/8 in
P-124X-D	1/2 in



FOR REFERENCE ONLY -
SAE 130424

P-127A STREET TEE, FPT TO MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-127A-A	1/8 in
P-127A-B	1/4 in
P-127A-C	3/8 in
P-127A-D	1/2 in

Pipe

P-127X STREET TEE, FPT TO MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-127X-A	1/8 in
P-127X-B	1/4 in
P-127X-C	3/8 in
P-127X-D	1/2 in



FOR REFERENCE ONLY -
SAE 130424

P-128A REDUCING ELBOW, FPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-128A-BA	1/4 in x 1/8 in
P-128A-BC	1/4 in x 3/8 in
P-128A-CB	3/8 in x 1/4 in



P-129A COUPLING, FPT TO STRAIGHT THREAD

PART NUMBER	FEMALE PIPE THREAD SIZE	STRAIGHT THREAD SIZE
P-129A-A	1/8 in	5/8-18
P-129AS-B (Short)	1/4 in	3/4-16
P-129A-B	1/4 in	3/4-16
P-129A-C	3/8 in	1-14
P-129A-D	1/2 in	1 1/8-14



P-T9 BRANCH TEE, FPT TO FPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-T9-222	1/8 in
P-T9-444	1/4 in
P-T9-666	3/8 in
P-T9-888	1/2 in



FOR REFERENCE ONLY -
SAE 130425

Pipe

RED BRASS CAST PIPE

Construction: Materials CA230 or CA314

Applications: Used for water, oil, steam, air and gas.

Advantages: Improved resistance to corrosion for aggressive environments.



P-100RB ELBOW, 90° FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-100RB-A	1/8 in
P-100RB-B	1/4 in
P-100RB-C	3/8 in
P-100RB-D	1/2 in
P-100RB-E	3/4 in
P-100RB-F	1 in



P-100-45RB ELBOW, 45° FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-100-45RB-A	1/8 in
P-100-45RB-B	1/4 in
P-100-45RB-C	3/8 in
P-100-45RB-D	1/2 in
P-100-45RB-E	3/4 in
P-100-45RB-F	1 in



P-101RB TEE, FPT ALL ENDS

PART NUMBER	PIPE THREAD SIZE
P-101RB-A	1/8 in
P-101RB-B	1/4 in
P-101RB-C	3/8 in
P-101RB-D	1/2 in
P-101RB-E	3/4 in
P-101RB-F	1 in



P-103RB COUPLING, FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-103RB-A	1/8 in
P-103RB-B	1/4 in
P-103RB-C	3/8 in
P-103RB-D	1/2 in
P-103RB-E	3/4 in
P-103RB-F	1 in

Pipe

P-104RB GROUND JOINT UNION, FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-104RB-A	1/8 in
P-104RB-B	1/4 in
P-104RB-C	3/8 in
P-104RB-D	1/2 in
P-104RB-E	3/4 in
P-104RB-F	1 in



P-108RB CAP, FPT

PART NUMBER	PIPE THREAD SIZE
P-108RB-A	1/8 in
P-108RB-B	1/4 in
P-108RB-C	3/8 in
P-108RB-D	1/2 in
P-108RB-E	3/4 in
P-108RB-F	1 in



P-109RB SQUARE HEAD PLUG, MPT

PART NUMBER	PIPE THREAD SIZE
P-109RB-A	1/8 in
P-109RB-B	1/4 in
P-109RB-C	3/8 in
P-109RB-D	1/2 in
P-109RB-E	3/4 in
P-109RB-F	1 in



P-110RB HEX BRUSHING, MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-110RB-BA	1/4 in x 1/8 in
P-110RB-CB	3/8 in x 1/4 in
P-110RB-DC	1/2 in x 3/8 in
P-110RB-ED	3/4 in x 1/2 in
P-110RB-FE	1 in x 3/4 in



P-112RB CLOSE NIPPLE, MPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-112RB-A	1/8 in
P-112RB-B	1/4 in
P-112RB-C	3/8 in
P-112RB-D	1/2 in
P-112RB-E	3/4 in
P-112RB-F	1 in



Pipe



P-116RB STREET ELBOW, 90° MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-116RB-A	1/8 in
P-116RB-B	1/4 in
P-116RB-C	3/8 in
P-116RB-D	1/2 in
P-116RB-E	3/4 in
P-116RB-F	1 in



P-119RB REDUCER, FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-119RB-DB	1/2 in x 1/4 in
P-119RB-DC	1/2 in x 3/8 in
P-119RB-EC	3/4 in x 3/8 in
P-119RB-ED	3/4 in x 1/2 in
P-119RB-FE	1 in x 3/4 in



P-124RB STREET ELBOW, 45° MPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-124RB-D	1/2 in
P-124RB-E	3/4 in



P-125RB DROP EAR PIPE ELBOW, FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-125RB-D	1/2 in

Pipe

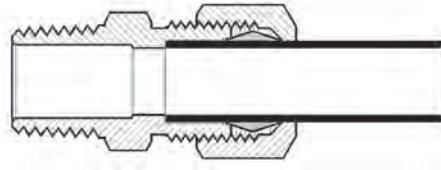
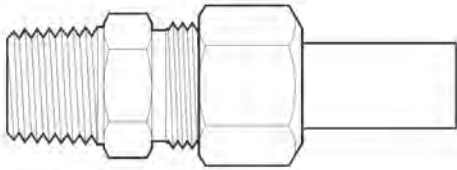
P-113RB LONG NIPPLE RED BRASS

PART NUMBER	PIPE THREAD SIZE	LENGTH
P-113RB-A25	1/8 in	2-1/2 in
P-113RB-B25	1/4 in	2-1/2 in
P-113RB-C25	3/8 in	2-1/2 in
P-113RB-D25	1/2 in	2-1/2 in
P-113RB-E25	3/4 in	2-1/2 in
P-113RB-A3	1/8 in	3 in
P-113RB-B3	1/4 in	3 in
P-113RB-C3	3/8 in	3 in
P-113RB-D3	1/2 in	3 in
P-113RB-E3	3/4 in	3 in
P-113RB-A35	1/8 in	3-1/2 in
P-113RB-B35	1/4 in	3-1/2 in
P-113RB-C35	3/8 in	3-1/2 in
P-113RB-D35	1/2 in	3-1/2 in
P-113RB-E35	3/4 in	3-1/2 in
P-113RB-A4	1/8 in	4 in
P-113RB-B4	1/4 in	4 in
P-113RB-C4	3/8 in	4 in
P-113RB-D4	1/2 in	4 in
P-113RB-E4	3/4 in	4 in
P-113RB-A45	1/8 in	4-1/2 in
P-113RB-B45	1/4 in	4-1/2 in
P-113RB-C45	3/8 in	4-1/2 in
P-113RB-D45	1/2 in	4-1/2 in
P-113RB-E45	3/4 in	4-1/2 in
P-113RB-A5	1/8 in	5 in
P-113RB-B5	1/4 in	5 in
P-113RB-C5	3/8 in	5 in
P-113RB-D5	1/2 in	5 in
P-113RB-E5	3/4 in	5 in
P-113RB-A55	1/8 in	5-1/2 in
P-113RB-B55	1/4 in	5-1/2 in
P-113RB-C55	3/8 in	5-1/2 in
P-113RB-D55	1/2 in	5-1/2 in
P-113RB-E55	3/4 in	5-1/2 in

PART NUMBER	PIPE THREAD SIZE	LENGTH
P-113RB-A6	1/8 in	6 in
P-113RB-B6	1/4 in	6 in
P-113RB-C6	3/8 in	6 in
P-113RB-D6	1/2 in	6 in
P-113RB-E6	3/4 in	6 in
P-113RB-A7	1/8 in	7 in
P-113RB-B7	1/4 in	7 in
P-113RB-C7	3/8 in	7 in
P-113RB-D7	1/2 in	7 in
P-113RB-E7	3/4 in	7 in



Compression



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1
Thread	5/16-24	3/8-24	7/16-24	1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	1-1/8-18

MATERIALS:

CA360, CA345, CA377, C2680

VIBRATION RESISTANCE:

Short Nut - Fair, Long Nut - Improved

WORKING PRESSURE:

400 PSI Maximum based on tubing size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-65 to +212°F
-54 to +100°C

CONFORMANCE:

Meets functional requirements of SAE as indicated by configuration.

APPLICATIONS:

Air, oil, water, lubricant and other applications which use brass, copper, aluminum and thermoplastic tubing. Use of thermoplastic tubing requires a brass insert (Fitting Configuration P-60AE).

HOW TO ORDER:

- Supplied as three piece assemblies including body, nut and sleeve.
- For body only, use "B" prefix.
- Some items available on Special Order basis only.

NOMENCLATURE:

P-68A-6B

- 68A: Fitting Configuration
- 6: Tube Size in sixteenths (6/16 = 3/8)
- B: Pipe Size 1/4"
- Dimensions subject to change without notice

BENEFIT:

- Reduces maintenance costs and assembly time.
- Lower costs based on fewer vendors.
- More sales opportunities.

FEATURE:

- No special tube prep required.
- Wide range of sizes and styles.
- Extruded and Forged available.

ADVANTAGE:

- Faster, more reliable assembly.
- One-stop shop for all needs.
- Conforms to more customers' requirements.

ASSEMBLY INSTRUCTIONS:

- Cut tubing squarely and remove burrs.
- Slide nut and sleeve on tubing, threaded end out.
- Insert the tube into fitting until it bottoms.
- Lubricate threads.
- Assemble nut to body finger tight.
- Tighten with a wrench as follows:
1/8" - 5/16": 1-1/4 Additional Turns
3/8" - 7/8": 2-1/4 Additional Turns

DO NOT OVER TIGHTEN OR TUBING MAY SPLIT

Compression

P-60A SLEEVE

PART NUMBER	O.D. TUBE
P-60A-2	1/8 in
P-60A-3	3/16 in
P-60A-4	1/4 in
P-60A-5	5/16 in
P-60A-6	3/8 in
P-60A-7	7/16 in
P-60A-8	1/2 in
P-60A-10	5/8 in
P-60A-12	3/4 in
P-60A-14	7/8 in



FOR REFERENCE ONLY -
SAE 060115

P-60AE BRASS INSERT

PART NUMBER	O.D. TUBE
P-60AE-4	1/4 in
P-60AE-5	5/16 in
P-60AE-6	3/8 in
P-60AE-8	1/2 in
P-60AE-10	5/8 in



FOR USE WITH SOFT TUBING

P-60AP DELRIN SLEEVE

PART NUMBER	O.D. TUBE
P-60AP-4	1/4 in
P-60AP-5	5/16 in
P-60AP-6	3/8 in
P-60AP-8	1/2 in
P-60AP-10	5/8 in



P-61A NUT

PART NUMBER	O.D. TUBE
P-61A-2	1/8 in
P-61A-3	3/16 in
P-61A-4	1/4 in
P-61A-5	5/16 in
P-61A-6	3/8 in
P-61AC-6 (Chrome)	3/8 in
P-61A-7	7/16 in
P-61A-8	1/2 in
P-61A-10	5/8 in
P-61A-12	3/4 in
P-61A-14	7/8 in



FOR REFERENCE ONLY -
SAE 060110

Compression



FOR REFERENCE ONLY -
SAE 060111

P-161A NUT, LONG

PART NUMBER	O.D. TUBE
P-161A-4	1/4 in
P-161A-5	5/16 in
P-161A-6	3/8 in



FOR REFERENCE ONLY -
SAE 060101BA

P-62A UNION, TUBE BOTH ENDS

PART NUMBER	O.D. TUBE
P-62A-22	1/8 in
P-62A-33	3/16 in
P-62A-42	1/4 in x 1/8 in
P-62A-43	1/4 in x 3/16 in
P-62A-44	1/4 in
P-62A-54	5/16 in x 1/4 in
P-62A-55	5/16 in
P-62A-64	3/8 in x 1/4 in
P-62A-65	3/8 in x 5/16 in
P-62A-66	3/8 in
P-62A-86	1/2 in x 3/8 in
P-62A-88	1/2 in
P-62A-106	5/8 in x 3/8 in
P-62A-108	5/8 in x 1/2 in
P-62A-1010	5/8 in
P-62A-1212	3/4 in
P-62A-1414	7/8 in



FOR REFERENCE ONLY -
SAE 060401

P-64A TEE, TUBE ALL ENDS

PART NUMBER	O.D. TUBE
P-64A-22	1/8 in
P-64A-33	3/16 in
P-64A-44	1/4 in
P-64A-55	5/16 in
P-64A-664	3/8 in x 3/8 in x 1/4 in
P-64A-66	3/8 in
P-64A-88	1/2 in
P-64A-1010	5/8 in
P-64A-1212	3/4 in
P-64A-1414	7/8 in

Compression

P-65A ELBOW, TUBE BOTH ENDS

PART NUMBER	O.D. TUBE
P-65A-33	3/16 in
P-65A-44	1/4 in
P-65A-55	5/16 in
P-65A-64	3/8 in x 1/4 in
P-65A-66	3/8 in
P-65A-88	1/2 in
P-65A-1010	5/8 in
P-65A-106	5/8 in x 3/8 in
P-65A-108	5/8 in x 1/2 in
P-65A-1212	3/4 in
P-65A-1414	7/8 in



FOR REFERENCE ONLY -
SAE 060201

P-66A ADAPTER, TUBE TO FPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-66A-2A	1/8 in	1/8 in
P-66A-3A	3/16 in	1/8 in
P-66A-3B	3/16 in	1/4 in
P-66A-4A	1/4 in	1/8 in
P-66A-4B	1/4 in	1/4 in
P-66A-4C	1/4 in	3/8 in
P-66A-4D	1/4 in	1/2 in
P-66A-5A	5/16 in	1/8 in
P-66A-5B	5/16 in	1/4 in
P-66A-5C	5/16 in	3/8 in
P-66A-6A	3/8 in	1/8 in
P-66A-6B	3/8 in	1/4 in
P-66A-6C	3/8 in	3/8 in
P-66A-6D	3/8 in	1/2 in
P-66A-6E	3/8 in	3/4 in
P-66A-8B	1/2 in	1/4 in
P-66A-8C	1/2 in	3/8 in
P-66A-8D	1/2 in	1/2 in
P-66A-10C	5/8 in	3/8 in
P-66A-10D	5/8 in	1/2 in
P-66A-10E	5/8 in	3/4 in
P-66A-12D	3/4 in	1/2 in
P-66A-12E	3/4 in	3/4 in
P-66A-14E	7/8 in	3/4 in



FOR REFERENCE ONLY -
SAE 060103

Compression



FOR REFERENCE ONLY -
SAE 060102BA

P-68A CONNECTOR, TUBE TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-68A-2A	1/8 in	1/8 in
P-68A-3A	3/16 in	1/8 in
P-68A-3B	3/16 in	1/4 in
P-68A-4A	1/4 in	1/8 in
P-68A-4B	1/4 in	1/4 in
P-68A-4C	1/4 in	3/8 in
P-68A-4D	1/4 in	1/2 in
P-68A-5A	5/16 in	1/8 in
P-68A-5B	5/16 in	1/4 in
P-68A-5C	5/16 in	3/8 in
P-68A-6A	3/8 in	1/8 in
P-68A-6B	3/8 in	1/4 in
P-68A-6C	3/8 in	3/8 in
P-68A-6D	3/8 in	1/2 in
P-68A-6E	3/8 in	3/4 in
P-68A-8B	1/2 in	1/4 in
P-68A-8C	1/2 in	3/8 in
P-68A-8D	1/2 in	1/2 in
P-68A-8E	1/2 in	3/4 in
P-68A-10C	5/8 in	3/8 in
P-68A-10D	5/8 in	1/2 in
P-68A-10E	5/8 in	3/4 in
P-68A-12D	3/4 in	1/2 in
P-68A-12E	3/4 in	3/4 in
P-68A-14D	7/8 in	1/2 in
P-68A-14E	7/8 in	3/4 in



P-6945A ELBOW, 45° TUBE TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-6945A-4A	1/4 in	1/8 in
P-6945A-6B	3/8 in	1/4 in
P-6945A-8C	1/2 in	3/8 in
P-6945A-10D	5/8 in	1/2 in

Compression

P-69A ELBOW, 90° TUBE TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-69A-2A	1/8 in	1/8 in
P-69A-3A	3/16 in	1/8 in
P-69A-4A	1/4 in	1/8 in
P-69A-4B	1/4 in	1/4 in
P-69A-4C	1/4 in	3/8 in
P-69A-4D	1/4 in	1/2 in
P-69A-5A	5/16 in	1/8 in
P-69A-5B	5/16 in	1/4 in
P-69A-5C	5/16 in	3/8 in
P-69A-6A	3/8 in	1/8 in
P-69A-6B	3/8 in	1/4 in
P-69A-6C	3/8 in	3/8 in
P-69A-6D	3/8 in	1/2 in
P-69A-6E	3/8 in	3/4 in
P-69A-7B	7/16 in	1/4 in
P-69A-8B	1/2 in	1/4 in
P-69A-8C	1/2 in	3/8 in
P-69A-8D	1/2 in	1/2 in
P-69A-8E	1/2 in	3/4 in
P-69A-10C	5/8 in	3/8 in
P-69A-10D	5/8 in	1/2 in
P-69A-10E	5/8 in	3/4 in
P-69A-12D	3/4 in	1/2 in
P-69A-12E	3/4 in	3/4 in
P-69A-14E	7/8 in	3/4 in



FOR REFERENCE ONLY -
SAE 060202BA

P-70A ELBOW, 90° TUBE TO FPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-70A-4A	1/4 in	1/8 in
P-70A-4B	1/4 in	1/4 in
P-70A-4C	1/4 in	3/8 in
P-70A-5A	5/16 in	1/8 in
P-70A-5B	5/16 in	1/4 in
P-70A-6A	3/8 in	1/8 in
P-70A-6B	3/8 in	1/4 in
P-70A-6C	3/8 in	3/8 in
P-70A-6D	3/8 in	1/2 in
P-70A-8B	1/2 in	1/4 in
P-70A-8C	1/2 in	3/8 in
P-70A-8D	1/2 in	1/2 in
P-70A-8E	1/2 in	3/4 in
P-70A-10C	5/8 in	3/8 in
P-70A-10D	5/8 in	1/2 in
P-70A-10E	5/8 in	3/4 in
P-70A-12D	3/4 in	1/2 in
P-70A-12E	3/4 in	3/4 in



FOR REFERENCE ONLY -
SAE 060203BA

Compression



P-71A MALE RUN TEE, TUBE TO MPT TO TUBE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-71A-2A	1/8 in	1/8 in
P-71A-3A	3/16 in	1/8 in
P-71A-4A	1/4 in	1/8 in
P-71A-4B	1/4 in	1/4 in
P-71A-5A	5/16 in	1/8 in
P-71A-5B	5/16 in	1/4 in
P-71A-6A	3/8 in	1/8 in
P-71A-6B	3/8 in	1/4 in
P-71A-6C	3/8 in	3/8 in
P-71A-8C	1/2 in	3/8 in
P-71A-8D	1/2 in	1/2 in
P-71A-10D	5/8 in	1/2 in
P-71A-12D	3/4 in	1/2 in



FOR REFERENCE ONLY -
SAE 060425BA

P-72A MALE BRANCH TEE, TUBE TO MPT TO TUBE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-72A-4A	1/4 in	1/8 in
P-72A-4B	1/4 in	1/4 in
P-72A-5A	5/16 in	1/8 in
P-72A-5B	5/16 in	1/4 in
P-72A-6A	3/8 in	1/8 in
P-72A-6B	3/8 in	1/4 in
P-72A-6C	3/8 in	3/8 in
P-72A-8C	1/2 in	3/8 in
P-72A-8D	1/2 in	1/2 in
P-72A-10D	5/8 in	1/2 in
P-72A-12D	3/4 in	1/2 in
P-72A-12E	3/4 in	3/4 in



P-76A STREET TEE, FPT TO MPT TO TUBE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-76A-4A	1/4 in	1/8 in
P-76A-4B	1/4 in	1/4 in
P-76A-6B	3/8 in	1/4 in

Compression

P-81LB CONTROL NUT

PART NUMBER	O.D. TUBE
P-81LB-4	1/4 in

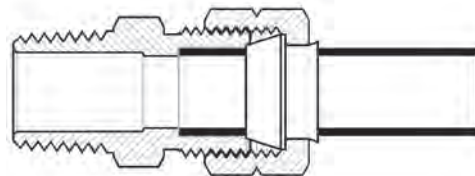
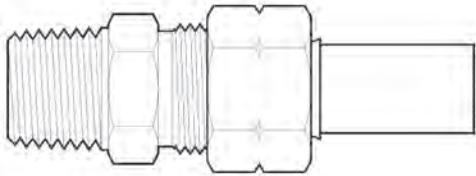


P-N5CT COMPRESSION CAP

PART NUMBER	SIZE
P-N5CT-4	1/4 in
P-N5CT-6	3/8 in
P-N5CT-8	1/2 in
P-N5CT-10	5/8 in



A-Lign Compression



Tube O.D.	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1
Thread	5/16-24	3/8-24	7/16-24	1/2-24	9/16-24	5/8-24	11/16-20	13/16-18	1-18	1-1/8-18

MATERIALS:

CA360, CA345, CA377

VIBRATION RESISTANCE:

Fair

WORKING PRESSURE:

400 PSI Maximum based on tubing size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-65 to +212°F
-54 to +100°C

CONFORMANCE:

Meets functional requirements of SAE as indicated by configuration.

APPLICATIONS:

Air, oil, water, lubricant and other applications which use brass, copper, aluminum and thermoplastic tubing. Use of thermoplastic tubing requires a brass insert. (Fitting Configuration P-60AE)

HOW TO ORDER:

- Compression fittings may be converted to A-Lign style by ordering the standard fitting assembly and A-Lign nut separately.
- You then have the option of using the fitting conventionally or converting to the A-Lign style.
- We no longer offer assembly of A-Ligns.

BENEFIT:

- Reduces maintenance costs and assembly time.
- Lower costs based on fewer vendors.
- Reduces the number of SKU's required to cover need.

FEATURE:

- Sleeve is integrated with nut.
- Wide range of sizes and styles.
- Standard compression bodies.

ADVANTAGE:

- Faster, more reliable assembly.
- One-stop shop for all needs.
- Interchangeable between part families.

ASSEMBLY INSTRUCTIONS:

- Cut tubing squarely and remove burrs.
- Slide nut and sleeve on tubing, threaded end out.
- Insert the tube into fitting until it bottoms.
- Lubricate threads.
- Assemble nut to body finger tight.
- Tighten with a wrench as follows:
1/8" to 5/16" 1-1/4 Additional Turns
3/8" to 7/8" 2-1/4 Additional Turns

DO NOT OVER TIGHTEN OR TUBING MAY SPLIT

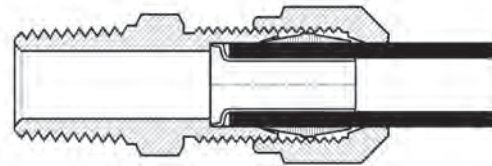
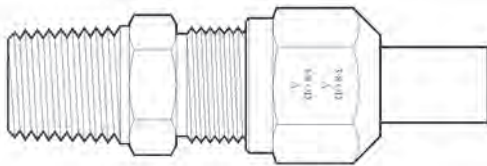
A-Lign Compression

P-961A NUT WITH CAPTIVE SLEEVE

PART NUMBER	O.D. TUBE
P-961A-2	1/8 in
P-961A-3	3/16 in
P-961A-4	1/4 in
P-961A-5	5/16 in
P-961A-6	3/8 in
P-961A-8	1/2 in
P-961A-10	5/8 in
P-961A-12	3/4 in



D.O.T. Nylon Tube Air Brake Fittings



Tube O.D.	1/4	3/8	1/2	5/8	3/4
Thread Size	7/16-24	17/32-24	11/16-20	13/16-18	1-18

MATERIALS:

CA360, CA345, C377

VIBRATION RESISTANCE:

Excellent

WORKING PRESSURE:

150 PSI Maximum based on tubing size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-40 to +200°F
-40 to +93°C

CONFORMANCE:

Meets requirements of SAE and DOT as indicated by configuration.

APPLICATIONS:

Air brake systems on heavy trucks and trailers that are plumbed with nylon tubing.

HOW TO ORDER:

- Supplied as three piece assemblies including body (with staked tube support), nut and sleeve.
- For body only, use "B" prefix.
- For pipe sealant (Loctite 516), add "VS" prefix.
- Some items available on Special Order basis only.

NOMENCLATURE:

PVS68NAB-6B

- 68NAB: Fitting Configuration
- 6: Tube Size in sixteenths ($6/16 = 3/8$)
- B: Pipe Size 1/4"

Dimensions subject to change without notice

BENEFIT:

- Reduces maintenance costs and assembly time.
- Lower costs based on fewer vendors.
- Assures safe, reliable nylon air brake tube assemblies.

FEATURE:

- No special tube prep required.
- Wide range of sizes and styles.
- Ribbed sleeve.

ADVANTAGE:

- Faster, more reliable assembly.
- One-stop shop for all needs.
- Designed especially for copper tubing.

ASSEMBLY INSTRUCTIONS:

- Cut tubing squarely and remove burrs.
- Slide tubing into the preassembled fitting until the tube bottoms.
- Tighten with a wrench as follows:
1/4" - 3/8": 1 3/4 Additional Turns
1/2" - 3/4": 3 1/4 Additional Turns

DO NOT OVER TIGHTEN OR TUBING MAY SPLIT

D.O.T. Nylon Tube Air Brake Fittings

P-59A INSERT

PART NUMBER	O.D. TUBE
P-59A-4	1/8 in
P-59A-6	3/8 in
P-59A-8	1/2 in



P-60NAB SLEEVE

PART NUMBER	O.D. TUBE
P-60NAB-4	1/4 in
P-60NAB-6	3/8 in
P-60NAB-8	1/2 in



FOR REFERENCE ONLY -
SAE 100115BA

P-61NAB NUT

PART NUMBER	O.D. TUBE
P-61NAB-4	1/4 in
P-61NAB-6	3/8 in
P-61NAB-8	1/2 in



FOR REFERENCE ONLY -
SAE 100110BA

P-62NAB UNION, TUBE BOTH ENDS

PART NUMBER	O.D. TUBE
P-62NAB-4	1/4 in
P-62NAB-6	3/8 in
P-62NAB-8	1/2 in



FOR REFERENCE ONLY -
SAE 100101BA

P-64NAB TEE, TUBE ALL ENDS

PART NUMBER	O.D. TUBE
P-64NAB-4	1/4 in
P-64NAB-6	3/8 in
P-64NAB-8	1/2 in



FOR REFERENCE ONLY -
SAE 100401BA

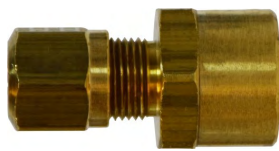
D.O.T. Nylon Tube Air Brake Fittings



FOR REFERENCE ONLY -
SAE 100201BA

P-65NAB ELBOW, TUBE BOTH ENDS

PART NUMBER	O.D. TUBE
P-65NAB-4	1/4 in
P-65NAB-6	3/8 in
P-65NAB-8	1/2 in



FOR REFERENCE ONLY -
SAE 100103BA

P-66NAB ADAPTER, TUBE TO FPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-66NAB-4A	1/4 in	1/8 in
P-66NAB-4B	1/4 in	1/4 in
P-66NAB-6A	3/8 in	1/8 in
P-66NAB-6B	3/8 in	1/4 in
P-66NAB-6C	3/8 in	3/8 in
P-66NAB-8C	1/2 in	3/8 in
P-66NAB-8D	1/2 in	1/2 in



FOR REFERENCE ONLY -
SAE 100102BA

P-VS68NAB CONNECTOR, TUBE TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-VS68NAB-4A	1/4 in	1/8 in
P-VS68NAB-4B	1/4 in	1/4 in
P-VS68NAB-4C	1/4 in	3/8 in
P-VS68NAB-6A	3/8 in	1/8 in
P-VS68NAB-6B	3/8 in	1/4 in
P-VS68NAB-6C	3/8 in	3/8 in
P-VS68NAB-6D	3/8 in	1/2 in
P-VS68NAB-8B	1/2 in	1/4 in
P-VS68NAB-8C	1/2 in	3/8 in
P-VS68NAB-8D	1/2 in	1/2 in



FOR REFERENCE ONLY -
SAE 100202BA

P-VS69NAB ELBOW, 90° TUBE TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-VS69NAB-4A	1/4 in	1/8 in
P-VS69NAB-4B	1/4 in	1/4 in
P-VS69NAB-4C	1/4 in	3/8 in
P-VS69NAB-6A	3/8 in	1/8 in
P-VS69NAB-6B	3/8 in	1/4 in
P-VS69NAB-6C	3/8 in	3/8 in
P-VS69NAB-6D	3/8 in	1/2 in
P-VS69NAB-8B	1/2 in	1/4 in
P-VS69NAB-8C	1/2 in	3/8 in
P-VS69NAB-8D	1/2 in	1/2 in

D.O.T. Nylon Tube Air Brake Fittings

P-70NAB ELBOW, 90° TUBE TO FPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-70NAB-4A	1/4 in	1/8 in
P-70NAB-6A	3/8 in	1/8 in
P-70NAB-6B	3/8 in	1/4 in
P-70NAB-6C	3/8 in	3/8 in
P-70NAB-8C	1/2 in	3/8 in
P-70NAB-8D	1/2 in	1/2 in



FOR REFERENCE ONLY -
SAE 010203BA

P-VS71NAB MALE RUN TEE, TUBE TO MPT TO TUBE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-VS71NAB-4A	1/4 in	1/8 in
P-VS71NAB-4B	1/4 in	1/4 in
P-VS71NAB-6B	3/8 in	1/4 in
P-VS71NAB-6C	3/8 in	3/8 in
P-VS71NAB-8C	1/2 in	3/8 in
P-VS71NAB-8D	1/2 in	1/2 in



FOR REFERENCE ONLY -
SAE 0100424BA

P-VS72NAB MALE BRANCH TEE, TUBE TO MPT TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-VS72NAB-4A	1/4 in	1/8 in
P-VS72NAB-4B	1/4 in	1/4 in
P-VS72NAB-6A	3/8 in	1/8 in
P-VS72NAB-6B	3/8 in	1/4 in
P-VS72NAB-6C	3/8 in	3/8 in
P-VS72NAB-8C	1/2 in	3/8 in
P-VS72NAB-8D	1/2 in	1/2 in



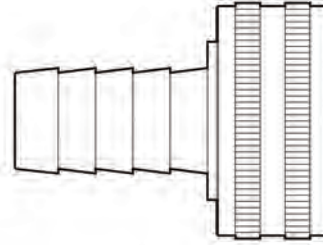
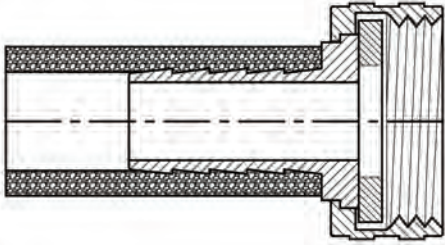
FOR REFERENCE ONLY -
SAE 0100425BA

P-VS79NAB ELBOW, 45° TUBE TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-VS79NAB-4A	1/4 in	1/8 in
P-VS79NAB-4B	1/4 in	1/4 in
P-VS79NAB-6A	3/8 in	1/8 in
P-VS79NAB-6B	3/8 in	1/4 in
P-VS79NAB-6C	3/8 in	3/8 in
P-VS79NAB-6D	3/8 in	1/2 in
P-VS79NAB-8B	1/2 in	1/4 in
P-VS79NAB-8C	1/2 in	3/8 in
P-VS79NAB-8D	1/2 in	1/2 in



Garden Hose



MATERIALS:

CA360, CA345, CA377

VIBRATION RESISTANCE:

Good

WORKING PRESSURE:

150 PSI Maximum based on hose size.
ALWAYS consult hose specifications

TEMPERATURE RANGE:

35 to +100°F
2 to +38°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

Garden hose applications which do not exceed 150 PSI including water, irrigation, car wash and piping systems.

HOW TO ORDER:

- Order as complete assemblies or individual components by part number.
- Some items available on Special Order basis only.

NOMENCLATURE:

P-19A-12D

- 19A: Fitting Configuration
- 12: Hose Size in sixteenths ($12/16 = 3/4$)
- D: Pipe Size 1/2"

Dimensions subject to change without notice.

BENEFIT:

- No equipment investment required.
- Reduces the number of SKU's required to cover needs.

FEATURE:

- Field attachable hose ends.
- Attach with clamps or ferrules.

ADVANTAGE:

- No assembly equipment required.
- Applicable in wider range of applications.
- Conforms to more customers' requirements.

ASSEMBLY INSTRUCTIONS:

- Cut hose squarely and remove burrs.
- Slide ferrule or hose clamp onto hose.
- Insert hose barb into hose until hose bottoms against fitting hex.
- Tighten clamp or crimp ferrule per manufacturer's specifications.
- Install rubber washer in all female hose ends.

Garden Hose

P-5A FEMALE HOSE TO FEMALE PIPE

PART NUMBER	HOSE THREAD	PIPE THREAD SIZE
P-5A-12D	3/4 in	1/2 in
P-5A-12E	3/4 in	3/4 in



P-5AS FEMALE HOSE TO FEMALE PIPE, SWIVEL

PART NUMBER	HOSE THREAD	PIPE THREAD SIZE
P-5AS-12D	3/4 in	1/2 in
P-5AS-12E	3/4 in	3/4 in



P-18A MALE HOSE TO FEMALE PIPE

PART NUMBER	HOSE THREAD	PIPE THREAD SIZE
P-18A-12B	3/4 in	1/4 in
P-18A-12C	3/4 in	3/8 in
P-18A-12D	3/4 in	1/2 in
P-18A-12E	3/4 in	3/4 in



P-19A MALE HOSE TO MALE PIPE

PART NUMBER	HOSE THREAD	PIPE THREAD SIZE
P-19A-12C	3/4 in	3/8 in
P-19A-12D	3/4 in	1/2 in
P-19AF-12DE	3/4 in	3/4 in



P-20A FEMALE HOSE TO MALE PIPE

PART NUMBER	HOSE THREAD	PIPE THREAD SIZE
P-20A-12D	3/4 in	1/2 in
P-20A-12E	3/4 in	3/4 in



P-21A HOSE "Y"

PART NUMBER	HOSE THREAD
P-21A-12	3/4 in



Garden Hose



P-22A FEMALE HOSE TO FEMALE HOSE

PART NUMBER	HOSE THREAD
P-22A-12	3/4 in x 3/4 in



P-22AS FEMALE HOSE TO FEMALE HOSE, SWIVEL

PART NUMBER	HOSE THREAD
P-22AS-12E	3/4 in x 3/4 in



P-23A MALE HOSE TO MALE HOSE

PART NUMBER	HOSE THREAD
P-23A-12	3/4 in x 3/4 in



P-120EC EVAPORATIVE COOLER

PART NUMBER	MALE PIPE THREAD	FEMALE PIPE THREAD
P-120EC-DD	1/2 in	1/2 in
P-120EC-EE	3/4 in	3/4 in



P-201GH HOSE BARB TO MALE GARDEN HOSE

PART NUMBER	GARDEN HOSE THREAD	HOSE I.D.	LENGTH
STANDARD			
P-201GH-8E	3/4 in	1/2 in	1.56 in
P-201GH-10E	3/4 in	5/8 in	1.56 in
P-201GH-12E	3/4 in	3/4 in	1.56 in
LONG			
P-201GH-8EX	3/4 in	1/2 in	1.93 in
P-201GH-10EX	3/4 in	5/8 in	1.93 in
P-201GH-12EX	3/4 in	3/4 in	1.93 in

Garden Hose

P-202GHS HOSE BARB TO HOSE BARB, SWIVEL

PART NUMBER	HOSE I.D.	LENGTH
STANDARD		
P-202GHS-88	1/2 in	3.00 in
P-202GHS-1010	5/8 in	3.00 in
P-202GHS-1212	3/4 in	3.00 in
LONG		
P-202GHS-8X	1/2 in	3.48 in
P-202GHS-10X	5/8 in	3.48 in
P-202GHS-12X	3/4 in	3.48 in

GARDEN HOSE ASSEMBLIES AVAILABLE WITH HEX NUTS EXTRA LONG LENGTHS AVAILABLE BY SPECIAL ORDER.



P-209GHS HOSE BARB TO FEMALE GARDEN HOSE, SWIVEL

PART NUMBER	GARDEN HOSE THREAD	HOSE I.D.	LENGTH
STANDARD			
P-209GHS-8E	3/4 in	1/2 in	1.52 in
P-209GHS-10E	3/4 in	5/8 in	1.52 in
P-209GHS-12E	3/4 in	3/4 in	1.52 in
LONG			
P-209GHS-8EX	3/4 in	1/2 in	1.87 in
P-209GHS-10EX	3/4 in	5/8 in	1.87 in
P-209GHS-12EX	3/4 in	3/4 in	1.87 in

GARDEN HOSE ASSEMBLIES AVAILABLE WITH HEX NUTS EXTRA LONG LENGTHS AVAILABLE BY SPECIAL ORDER.



P-ECD-D PANEL MOUNT DRAIN COOLER

PART NUMBER	PIPE THREAD
P-ECD-D	1/2 FPT



P-GH-W GARDEN HOSE WASHER

PART NUMBER	GARDEN HOSE THREAD
P-GH-W	3/4 in



Garden Hose



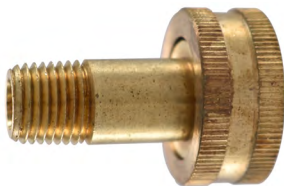
P-GHN1 GARDEN HOSE NUT

PART NUMBER	HOSE THREAD	TYPE
P-GHN1	3/4 in	Round
P-GHN1H	3/4 in	HEX



P-GHN5 GARDEN HOSE CAP

PART NUMBER	HOSE THREAD	PIPE THREAD	TYPE
P-GHN5	3/4 in	N/A	Round
P-GHN5-TA	3/4 in	1/8 in	Round
P-GHN5H	3/4 in	N/A	HEX



P-W1 WATER INLET ASSEMBLY, GH SWIVEL TO MPT

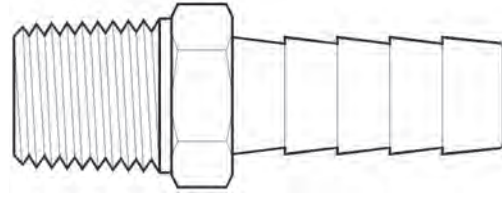
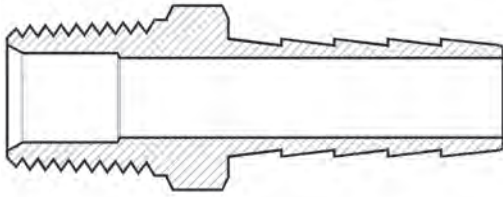
PART NUMBER	HOSE THREAD	PIPE THREAD
P-W1-B	3/4 in	1/4 in
P-W1-C	3/4 in	3/8 in



P-W1 WATER INLET ASSEMBLY, GH SWIVEL TO FLARE

PART NUMBER	HOSE THREAD	FLARE THREAD
P-W1-6	3/4 in	3/8 in
P-W1-8	3/4 in	1/2 in

Hose Barb



MATERIALS:

CA360, CA345, CA377

VIBRATION RESISTANCE:

Excellent

WORKING PRESSURE:

150 PSI Maximum based on hose/tubing size.
ALWAYS consult hose/tubing specifications.

TEMPERATURE RANGE:

-40 to +160°F
-40 to +71°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

Air, water and other low pressure fluids conveyed via low pressure hose or thermoplastic tubing.

HOW TO ORDER:

- Order as complete assemblies or individual components by part number.
- Some items available on Special Order basis only.

NOMENCLATURE:

P-209A-3A

- 209A: Fitting Configuration
- 3: Hose Size in sixteenths ($3/16 = 3/16$)
- A: Pipe Size 1/8"

Dimensions subject to change without notice

BENEFIT:

- No equipment investment required.
- Reduces the number of SKU's required to cover needs.

FEATURE:

- Field attachable hose ends.
- Attach with clamps or ferrules.

ADVANTAGE:

- No assembly equipment required.
- Applicable in wider range of applications.

ASSEMBLY INSTRUCTIONS:

- Cut hose squarely and remove burrs.
- Slide ferrule or hose clamp onto hose.
- Lubricate hose, then insert hose barb into hose until hose bottoms against fitting hex.
- Tighten clamp or crimp ferrule per manufacturer's specifications.

Hose Barb



P-201A HOSE BARB TO MPT

PART NUMBER	HOSE I.D.	PIPE THREAD SIZE
P-201A-2A	1/8 in	1/8 in
P-201A-3A	3/16 in	1/8 in
P-201A-3B	3/16 in	1/4 in
P-201A-4A	1/4 in	1/8 in
P-201A-4B	1/4 in	1/4 in
P-201A-4C	1/4 in	3/8 in
P-201A-4D	1/4 in	1/2 in
P-201A-5A	5/16 in	1/8 in
P-201A-5B	5/16 in	1/4 in
P-201A-5C	5/16 in	3/8 in
P-201A-6A	3/8 in	1/8 in
P-201A-6B	3/8 in	1/4 in
P-201A-6C	3/8 in	3/8 in
P-201A-6D	3/8 in	1/2 in
P-201A-6E	3/8 in	3/4 in
P-201A-8B	1/2 in	1/4 in
P-201A-8C	1/2 in	3/8 in
P-201A-8D	1/2 in	1/2 in
P-201A-8E	1/2 in	3/4 in
P-201A-10C	5/8 in	3/8 in
P-201A-10D	5/8 in	1/2 in
P-201A-10E	5/8 in	3/4 in
P-201A-12D	3/4 in	1/2 in
P-201A-12E	3/4 in	3/4 in
P-201A-16E	1 in	3/4 in
P-201A-16F	1 in	1 in



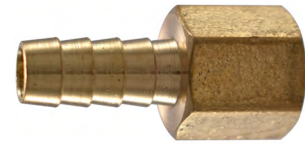
P-201BF HOSE TO MALE FLARE

PART NUMBER	HOSE I.D.	MALE FLARE
P-201BF-44	1/4 in	1/4 in
P-201BF-46	1/4 in	3/8 in
P-201BF-66	3/8 in	3/8 in
P-201BF-68	3/8 in	1/2 in
P-201BF-88	1/2 in	1/2 in

Hose Barb

P-209A HOSE BARB TO FPT

PART NUMBER	HOSE I.D.	PIPE THREAD SIZE
P-209A-2A	1/8 in	1/8 in
P-209A-3A	3/16 in	1/8 in
P-209A-3B	3/16 in	1/4 in
P-209A-4A	1/4 in	1/8 in
P-209A-4B	1/4 in	1/4 in
P-209A-4C	1/4 in	3/8 in
P-209A-5A	5/16 in	1/8 in
P-209A-5B	5/16 in	1/4 in
P-209A-5C	5/16 in	3/8 in
P-209A-6A	3/8 in	1/8 in
P-209A-6B	3/8 in	1/4 in
P-209A-6C	3/8 in	3/8 in
P-209A-6D	3/8 in	1/2 in
P-209A-8B	1/2 in	1/4 in
P-209A-8C	1/2 in	3/8 in
P-209A-8D	1/2 in	1/2 in



P-209AS HOSE BARB TO SWIVEL BALL END (FEMALE STRAIGHT MECHANICAL)

PART NUMBER	HOSE I.D.	PIPE THREAD SIZE
P-209AS-4B	1/4 in	1/4 in
P-209AS-6B	3/8 in	1/4 in
P-209AS-6C	3/8 in	3/8 in
P-209AS-8C	1/2 in	3/8 in
P-209AS-8D	1/2 in	1/2 in
P-209AS-12E	3/4 in	3/4 in



P-209ASF HOSE BARB TO FEMALE FLARE SWIVEL

PART NUMBER	HOSE I.D.	FEMALE FLARE
P-209ASF-44	1/4 in	1/4 in
P-209ASF-46	1/4 in	3/8 in
P-209ASF-66	3/8 in	3/8 in
P-209ASF-68	3/8 in	1/2 in
P-209ASF-88	1/2 in	1/2 in



P-HBT2 HOSE BARB TEE

PART NUMBER	HOSE I.D.
P-HBT2-4	1/4 in
P-HBT2-5	5/16 in
P-HBT2-6	3/8 in



Hose Barb

**P-HE1** ELBOW, 90° HOSE TO MPT

PART NUMBER	HOSE I.D.	PIPE THREAD SIZE
P-HE1-4A	1/4 in	1/8 in
P-HE1-4B	1/4 in	1/4 in
P-HE1-4C	1/4 in	3/8 in
P-HE1-5A	5/16 in	1/8 in
P-HE1-5B	5/16 in	1/4 in
P-HE1-5C	5/16 in	3/8 in
P-HE1-6A	3/8 in	1/8 in
P-HE1-6B	3/8 in	1/4 in
P-HE1-6C	3/8 in	3/8 in
P-HE1-6D	3/8 in	1/2 in
P-HE1-8B	1/2 in	1/4 in
P-HE1-8C	1/2 in	3/8 in
P-HE1-8D	1/2 in	1/2 in
P-HE1-10C	5/8 in	3/8 in
P-HE1-10D	5/8 in	1/2 in

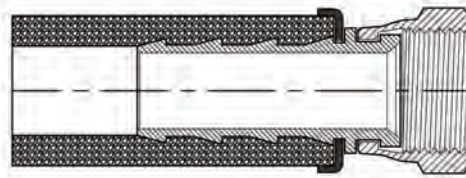
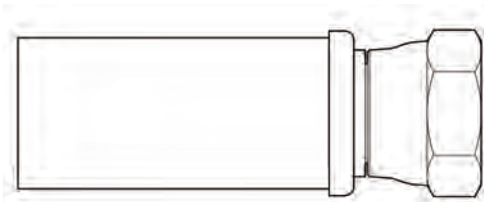
**P-HE1-45** ELBOW, 45° HOSE TO MPT

PART NUMBER	HOSE I.D.	PIPE THREAD SIZE
P-HE1-45-4A	1/4 in	1/8 in
P-HE1-45-5A	5/16 in	1/8 in
P-HE1-45-5B	5/16 in	1/4 in
P-HE1-45-6A	3/8 in	1/8 in
P-HE1-45-6B	3/8 in	1/4 in
P-HE1-45-6C	3/8 in	3/8 in
P-HE1-45-8B	1/2 in	1/4 in
P-HE1-45-8C	1/2 in	3/8 in
P-HE1-45-10C	5/8 in	3/8 in

**P-HM** HOSE MENDER, HOSE TO HOSE

PART NUMBER	HOSE I.D.
P-HM-2	1/8 in
P-HM-3	3/16 in
P-HM-4	1/4 in
P-HM-5	5/16 in
P-HM-6	3/8 in
P-HM-8	1/2 in
P-HM-10	5/8 in
P-HM-12	3/4 in

Grip-On Hose Barb



MATERIALS:

CA360, CA345
Hose protection cap is thermoplastic.

VIBRATION RESISTANCE:

Excellent

WORKING PRESSURE:

300 PSI Maximum based on hose size.
ALWAYS consult hose specifications.

TEMPERATURE RANGE:

-40 to +212°F
-40 to +100°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

Use with rubber or thermoplastic push-on style hose. Common in low pressure air and water applications including shop air lines, pneumatic tools, gasoline lines and diesel lines.

HOW TO ORDER:

- Order as complete assemblies or individual components by part number.
- Some items available on Special Order basis only.

NOMENCLATURE:

P-308-66

- 308: Fitting Configuration
- 6: Hose Size in sixteenths ($6/16 = 3/8$)
- 6: Tube Size in sixteenths ($6/16 = 3/8$)

Dimensions subject to change without notice

BENEFIT:

- No equipment investment required.
- Reduces assembly cost and increases consistency.

FEATURE:

- Field attachable hose ends.
- No clamps or ferrules required.

ADVANTAGE:

- No assembly equipment required.
- Speeds up assembly time and reliability.

ASSEMBLY INSTRUCTIONS:

- Cut hose squarely and remove burrs.
- Push hose onto barb until hose bottoms against plastic ring.

Grip-On Hose Barb



P-301 HOSE TO MPT

PART NUMBER	HOSE I.D.	PIPE THREAD SIZE
P-301-42	1/4 in	1/8 in
P-301-44	1/4 in	1/4 in
P-301-46	1/4 in	3/8 in
P-301-52	5/16 in	1/8 in
P-301-62	3/8 in	1/8 in
P-301-64	3/8 in	1/4 in
P-301-66	3/8 in	3/8 in
P-301-68	3/8 in	1/2 in
P-301-84	1/2 in	1/4 in
P-301-86	1/2 in	3/8 in
P-301-88	1/2 in	1/2 in
P-301-812	1/2 in	3/4 in
P-301-108	5/8 in	1/2 in
P-301-1212	3/4 in	3/4 in



P-302 HOSE TO 45° SAE MALE

PART NUMBER	HOSE I.D.	FLARE THREAD
P-302-44	1/4 in	1/4 in
P-302-45	1/4 in	5/16 in
P-302-66	3/8 in	3/8 in
P-302-68	1/2 in	1/2 in



P-303 RIGID TUBE SHANK

PART NUMBER	HOSE I.D.	TUBE I.D.
P-303-43	1/4 in	3/16 in
P-303-44	1/4 in	1/4 in
P-303-45	1/4 in	5/16 in
P-303-66	3/8 in	3/8 in
P-303-88	1/2 in	1/2 in
P-303-1010	5/8 in	5/8 in



P-304 HOSE SPLICER

PART NUMBER	HOSE I.D.
P-304-44	1/4 in
P-304-55	5/16 in
P-304-66	3/8 in
P-304-88	1/2 in
P-304-1010	5/8 in
P-304-1212	3/4 in

Grip-On Hose Barb

P-305 HOSE TO INVERTED FLARE, SWIVEL

PART NUMBER	HOSE I.D.	INVERTED FLARE THREAD
P-305-43	1/4 in	3/16 in
P-305-44	1/4 in	1/4 in
P-305-55	5/16 in	5/16 in
P-305-66	3/8 in	3/8 in
P-305-88	1/2 in	1/2 in
P-305-1010	5/8 in	5/8 in



P-306 HOSE TO INVERTED FLARE

PART NUMBER	HOSE I.D.	INVERTED FLARE THREAD
P-306-43	1/4 in	3/16 in
P-306-44	1/4 in	1/4 in
P-306-45	1/4 in	5/16 in
P-306-66	3/8 in	3/8 in
P-306-88	1/2 in	1/2 in



P-307 HOSE TO FEMALE 45° FLARE, SWIVEL

PART NUMBER	HOSE I.D.	FLARE THREAD
P-307-46	1/4 in	3/8 in
P-307-66	3/8 in	3/8 in
P-307-1212	3/4 in	3/4 in



P-308 HOSE TO FEMALE JIC 37° FLARE, SWIVEL

PART NUMBER	HOSE I.D.	37° FLARE THREAD
P-308-66	3/8 in	3/8 in
P-308-88	1/2 in	1/2 in
P-308-1212	3/4 in	3/4 in



Grip-On Hose Barb



P-309 HOSE TO DUAL ANGLE, SWIVEL, 45°/37°

PART NUMBER	HOSE I.D.	FLARE THREAD
P-309-44	1/4 in	1/4 in
P-309-45	1/4 in	5/16 in
P-309-55	5/16 in	5/16 in
P-309-68	3/8 in	1/2 in
P-309-88	1/2 in	1/2 in
P-309-1010	5/8 in	5/8 in



P-3099 HOSE TO FPT

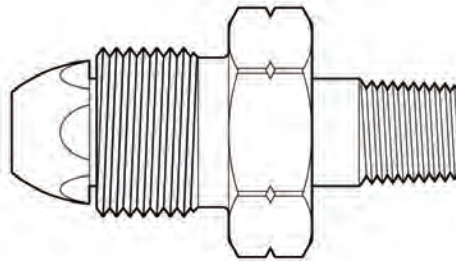
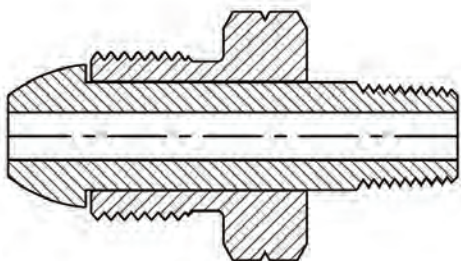
PART NUMBER	HOSE I.D.	PIPE THREAD SIZE
P-3099-42	1/4 in	1/8 in
P-3099-44	1/4 in	1/4 in
P-3099-64	3/8 in	1/4 in
P-3099-66	3/8 in	3/8 in
P-3099-86	1/2 in	3/8 in
P-3099-88	1/2 in	1/2 in



P-310 HOSE TO JIC MALE 37°

PART NUMBER	HOSE I.D.	37° FLARE THREAD
P-310-44	1/4 in	1/4 in
P-310-45	1/4 in	5/16 in
P-310-66	3/8 in	3/8 in

POL



MATERIALS:

CA360, CA345, CA377

VIBRATION RESISTANCE:

Good

WORKING PRESSURE:

250 PSI Maximum based on hose/tubing size.
ALWAYS consult hose/tubing specifications.

TEMPERATURE RANGE:

-65 to +200°F
-54 to +93°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

LP Gas assemblies.

HOW TO ORDER:

- Order as complete assemblies or individual components by part number.
- Some items available on Special Order basis only.

NOMENCLATURE:

P-POL-U2-6

- POL-U2: Fitting Configuration
- 6: Tube Size in sixteenths ($6/16 = 3/8$)

Dimensions subject to change without notice

BENEFIT:

- More sales opportunities based on availability.

FEATURE:

- Designed for LP Gas applications.

ADVANTAGE:

- Fits unique LP Gas connectors.

POL



P-POL-N NUT, 7/8" HEX

PART NUMBER	EXTERNAL THREAD
P-POL-N	0.880 - 14 LH



P-POL-LTPH ADAPTER, 2-9/16"

PART NUMBER	PIPE THREAD
P-POL-LTPH	1/4 in



P-POL-N5 CAP

PART NUMBER	INTERNAL THREAD
P-POL-N5	0.880 - 14 LH



P-POL-P2 PLUG

PART NUMBER	EXTERNAL THREAD
P-POL-P2	0.880 - 14 LH



P-POL-U2 POL TO SAE FLARE

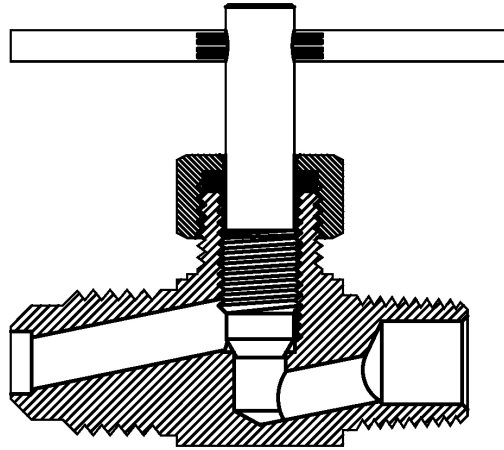
PART NUMBER	O.D. FLARE	EXTERNAL THREAD
P-POL-U2-6	3/8 in	0.880 - 14 LH
P-POL-U2-8	1/2 in	0.880 - 14 LH
P-POL-U2-10	5/8 in	0.880 - 14 LH



P-POL-U3 POL TO FPT

PART NUMBER	EXTERNAL THREAD	PIPE THREAD SIZE
P-POL-U3B	0.880-14 LH	1/4 FPT

Needle Valves



MATERIALS:

CA377

WORKING PRESSURE:

150 PSI Maximum based on tube size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-65 to +250°F
-54 to +121°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

Used in low pressure pneumatic instrumentation and hydraulic systems that are plumbed with copper, thermoplastic, steel and aluminum tubing.

HOW TO ORDER:

- Order by part number.
- Compression valves are supplied with nuts, and sleeves.

- For A-Lign nut, add "9" prefix.
- Some items available on Special Order basis only.

BENEFIT:

- Reduces leakage improving system reliability.
- Enables customer to adjust flow capacity as needed.
- Reduces maintenance costs and unsightly leaks.

FEATURE:

- Metal to metal seat.
- Easily adjusts.

ADVANTAGE:

- Positive seal.
- Allows for flow control.
- Fewer leaks in the system.

ASSEMBLY INSTRUCTIONS:

- Always install with pressure against seat.
- NEVER direct pressure against stem threads.

Needle Valves



NEEDLE VALVE FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-31NV	1/8 in x 1/8 in
P-32NV	1/4 in x 1/4 in



NEEDLE VALVE FPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-48NV	1/8 in x 1/8 in
P-49NV	1/4 in x 1/4 in



NEEDLE VALVE COMPRESSION TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-101CP	1/4 in	1/8 in
P-101CP-4	1/4 in	1/4 in
P-102CP	5/16 in	1/8 in
P-143CP	3/8 in	1/4 in



NEEDLE VALVE COMPRESSION TO MPT, ANGLE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-103CC	1/4 in	1/8 in
P-103-4CC	1/4 in	1/4 in
P-203CC	5/16 in	1/8 in
P-303ACC	3/8 in	1/8 in
P-303CC	3/8 in	1/4 in



NEEDLE VALVE FLARE TO MPT, ANGLE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-103SAE	1/4 in	1/8 in
P-303SAE	3/8 in	1/4 in



NEEDLE VALVE FLARE TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-104SAE	1/4 in	1/8 in
P-108SAE	3/8 in	1/4 in

Needle Valves

NEEDLE VALVE FLARE TO FLARE

PART NUMBER	O.D. TUBE
P-110SAE	1/4 in x 1/4 in
P-115SAE	3/8 in x 3/8 in



NEEDLE VALVE MPT TO MPT

PART NUMBER	O.D. TUBE
P-108MP	1/4 in x 1/4 in
P-110MP	3/8 in x 3/8 in



NEEDLE VALVE COMPRESSION TO COMPRESSION

PART NUMBER	O.D. TUBE
P-106CC	1/4 in x 1/4 in
P-107CC	5/16 in x 5/16 in
P-113CC	3/8 in x 3/8 in



SELF TAPPING VALVE WITH SADDLE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-104HV-ST	1/4 in	1/8 in

CLAMP FOR USE WITH 3/8" OD THROUGH 1.315" OD TUBE OR PIPE.



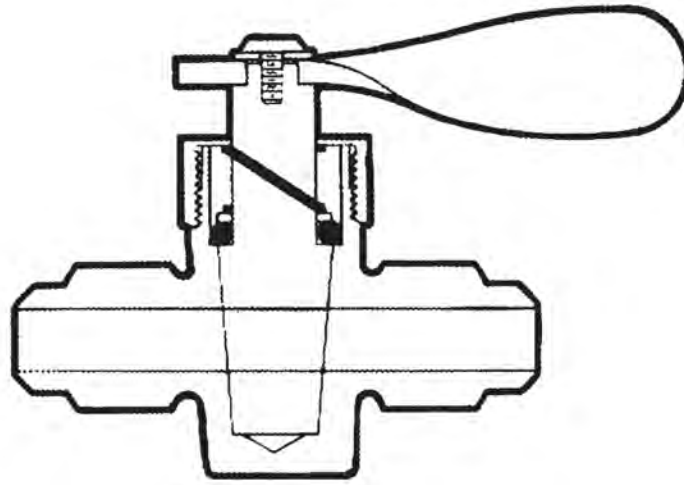
SADDLE VALVE WITH BRASS OR STEEL SADDLE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE	SADDLE MATERIAL
P-104HV-B	1/4 in	1/8 in	BRASS
P-104HV-S	1/4 in	1/8 in	STEEL

CLAMP FOR USE WITH 3/8" OD THROUGH 1.315" OD TUBE OR PIPE.



Special Duty Valves



MATERIALS:

- CA377 forged bodies.
- Solid bottom, spring loaded top.
- CAD plated carbon steel handles.
- Packed with non-drying synthetic grease.
- Neoprene O-Ring seal.

WORKING PRESSURE:

30 PSI Maximum based on tube size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-40 to +250°F
-40 to +121°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

Used for fuel oil, water, gas, air and LP gas lines that are plumbed with copper, thermoplastic, steel and aluminum tubing.

HOW TO ORDER:

- Order by part number.
- Compression valves are supplied with nuts, and sleeves.
- Some items available on Special Order basis only.

BENEFIT:

- Reduces maintenance costs.
- Safe transfer of recommended fluids.
- Leak free operation

FEATURE:

- Neoprene O-Ring Seal.
- Solid body construction.
- Lapped brass body and plug.

ADVANTAGE:

- Leak free operation.
- Built in durability.
- High quality, low friction valve.

Special Duty Valves

SPECIAL DUTY VALVE FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-32SD	1/4 in x 1/4 in
P-40SD	3/8 in x 3/8 in



SPECIAL DUTY VALVE FPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-103SD-2	1/8 in x 1/8 in
P-103SD-4	1/4 in x 1/4 in
P-103SD-6	3/8 in x 3/8 in



FOUR WAY VALVE FPT ALL ENDS

PART NUMBER	STEM LENGTH	PIPE THREAD SIZE
P-114SD	1-3/8 in	1/4 in

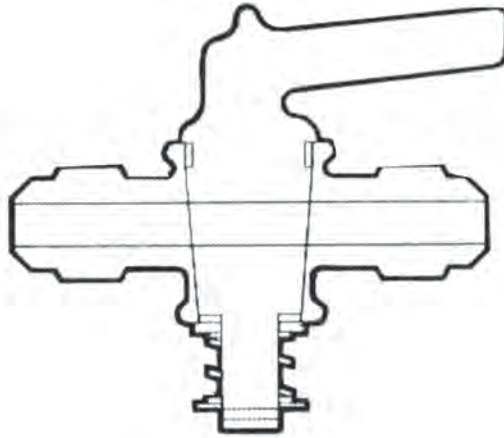


THREE WAY VALVE FPT ALL ENDS

PART NUMBER	PIPE THREAD SIZE
P-108SD-2	1/8 in
P-108SD-4	1/4 in
P-108SD-6	3/8 in



Ground Plug Valves



MATERIALS:

CA377 forged bodies.
Handles are integral part of plug.

WORKING PRESSURE:

30 PSI Maximum based on tube size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-40 to +250°F
-40 to +121°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

Used for air supply lines and water processing systems plumbed with copper, thermoplastic, and aluminum tubing.

HOW TO ORDER:

- Order by part number.
- Compression valves are supplied with nuts, and sleeves.
- Some items available on Special Order basis only.

BENEFIT:

- Reduces maintenance costs and unsightly leaks.

FEATURE:

- Lapped brass body and plug.

ADVANTAGE:

- Results in high quality, low friction valve.

Ground Plug Valves



VALVE COMPRESSION TO MALE PIPE

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-27CC	1/4 in	1/8 in
P-227CC	1/4 in	1/4 in
P-57CC	3/8 in	1/4 in



VALVE COMPRESSION TO COMPRESSION

PART NUMBER	O.D. TUBE
P-28CC	1/4 in
P-30CC	5/16 in
P-58CC	3/8 in
P-68CC	1/2 in



VALVE FLARE TO FLARE

PART NUMBER	O.D. TUBE
P-28SAE	1/4 in
P-58SAE	3/8 in
P-68SAE	1/2 in



VALVE MPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-76PC	1/8 in x 1/8 in
P-77PC	1/4 in x 1/4 in
P-78PC	3/8 in x 3/8 in

Ground Plug Valves

VALVE FPT TO FPT

PART NUMBER	PIPE THREAD SIZE
P-31PC	1/8 in x 1/8 in
P-32PC	1/4 in x 1/4 in
P-40PC	3/8 in x 3/8 in



VALVE FPT TO MPT

PART NUMBER	PIPE THREAD SIZE
P-48PC	1/8 in x 1/8 in
P-49PC	1/4 in x 1/4 in
P-50PC	3/8 in x 3/8 in



DRAIN VALVE LEVER HANDLE MPT TO DRAIN

PART NUMBER	PIPE THREAD SIZE
P-41D	1/8 in
P-42D	1/4 in
P-43D	3/8 in
P-44D	1/2 in

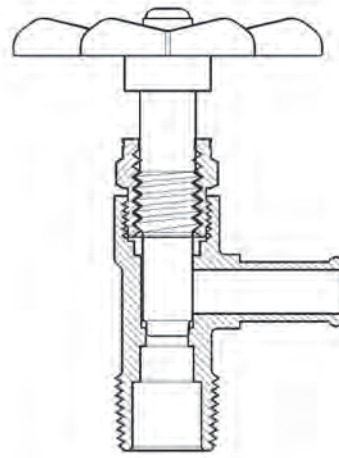
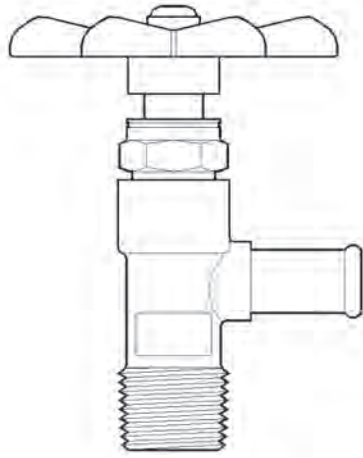


DRAIN VALVE T HANDLE MPT TO DRAIN

PART NUMBER	PIPE THREAD SIZE
P-37D	1/8 in
P-38D	1/4 in



Hose & Truck Valves



MATERIALS:

CA377 forged bodies.
Handles are integral part of plug.

WORKING PRESSURE:

200 PSI Maximum based on tube size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-40 to +250°F
-40 to +121°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

Used in fuel lines, cooling applications, and air systems in the trucking industry. Recommended for gasoline, oil, LP Gas, and kerosene applications.

HOW TO ORDER:

- Order by part number.
- Some items available on Special Order basis only.

BENEFIT:

- Reduced maintenance costs.
- Increased efficiencies

FEATURE:

- Metal to metal internal seat.
- O-Ring sealed.
- Full Flow.

ADVANTAGE:

- Durable Operation.
- Never needs repacting.

Hose & Truck Valves

HOSE VALVE TO MPT

PART NUMBER	I.D. TUBE	PIPE THREAD SIZE
P-HV1-6C	3/8 in	3/8 in
P-HV1-8C	1/2 in	3/8 in
P-HV1-10C	5/8 in	3/8 in
P-HV1-10D	5/8 in	1/2 in
P-HV1-12D	3/4 in	1/2 in



OIL TANK VALVE FLARE TO MPT

PART NUMBER	O.D. TUBE	PIPE THREAD SIZE
P-5818X8	3/8 in	1/2 in
P-5818X12	3/8 in	3/4 in
P-3416X12	1/2 in	3/4 in



OIL TANK VALVE MPT TO FPT

PART NUMBER	MALE PIPE	FEMALE PIPE
P-1W-86	1/2 in	3/8 in
P-1W-88	1/2 in	1/2 in

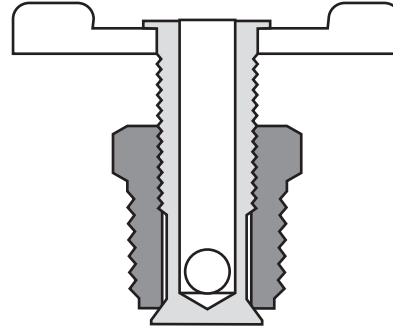
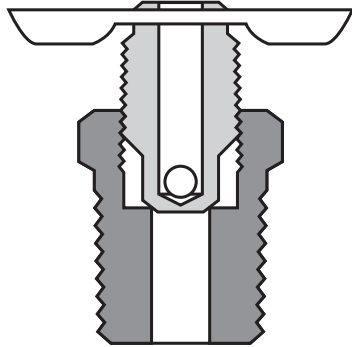


OIL TANK VALVE MPT TO MPT WITH 3-1/2" EXTENSION

PART NUMBER	MALE PIPE	FEMALE PIPE
P-2W-68	3/8 in	3/8 in



Drain Cocks



MATERIALS:

CA360

WORKING PRESSURE:

150 PSI Maximum based on tube size.
ALWAYS consult tubing specifications.

TEMPERATURE RANGE:

-65 to +250°F
-54 to +121°C

CONFORMANCE:

ALWAYS consult hose and/or tubing specifications for media compatibility, pressure and temperature ratings.

APPLICATIONS:

Used in low pressure air and water for automotive and industrial applications that are plumbed with copper, thermoplastic, steel and aluminum tubing.

NOT INTENDED FOR LP GAS OR NATURAL GAS.

HOW TO ORDER:

- Order by part number.
- Some items available on Special Order basis only.

BENEFIT:

- Reduces leakage to improve system reliability.
- Eliminate handle breakage.

FEATURE:

- Metal to metal internal seat.
- Pin handle.

ADVANTAGE:

- Positive seal.
- Improved reliability.

Drain Cocks

DRAIN COCK TO MPT

PART NUMBER	PIPE THREAD SIZE
P-200D	1/8 in
P-201D	1/4 in
P-202D	3/8 in



DRAIN COCK HOSE BIBB TO MPT

PART NUMBER	PIPE THREAD SIZE
P-201DH	1/8 in



DRAIN COCK INTERNAL SEAT

PART NUMBER	PIPE THREAD SIZE
P-300D	1/8 in



DRAIN COCK EXTERNAL SEAT

PART NUMBER	PIPE THREAD SIZE
P-320D	1/8 in
P-321D	1/4 in
P-322D	3/8 in



DRAIN COCK WITH EXTENSION EXTERNAL SEAT

PART NUMBER	PIPE THREAD SIZE
P-421D	1/4 in



BARREL FAUCET

PART NUMBER	PIPE THREAD SIZE
P-G261	3/4 in



Assortment Kits



Brass Fitting Assortment Kits

CerroBrass’s kit drawer assortments are the ideal way to keep products organized. The sturdy steel construction of the drawer with durable molded plastic compartments withstands the punishment of the most harsh shop environment.

P-DL20C

18-1/2" L x 12-1/4" W x 3-1/8" D

P-DL16C (Not Pictured)

18-1/4" L x 12" W x 3-1/8" D

Assortment Kits

P-KIT-FASTPIPE-2

1/8" Pipe Kit contains 19 items, and 285 pieces of the most popular tees, elbows, couplings, bushings, plugs and nipples in the product offering.

Designed for P-DL20C drawer.

18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-100A-A	1/8" FPT ELBOW	10
P-101A-A	1/8" FPT TEE	10
P-103A-A	1/8" FPT COUPLING	25
P-119A-BA	1/4" X 1/8" COUPLING	10
P-108A-A	1/8" CAP	25
P-109A-A	1/8" SQ HD PLUG	25
P-110A-BA	1/4" X 1/8" HEX BUSHING	25
P-112A-A	1/8" CLOSE NIPPLE	25
P-113A-A15	1/8" X 1-1/2" NIPPLE	10
P-113A-A2	1/8" X 2" NIPPLE	10
P-122A-A	1/8" HEX NIPPLE	25
P-123A-BA	1/4" X 1/8" HEX NIPPLE	10
P-116A-A	1/8" 90° STREET ELBOW	10
P-124A-A	1/8" 45° STREET ELBOW	10
P-127A-A	1/8" STREET TEE	5
P-120A-AA	1/8" FPT X 1/8" MPT CONN	10
P-120A-BA	1/4" FPT X 1/8" MPT CONN	10
P-121A-A	1/8" HEX PLUG	25
P-102A-A	1/8" CROSS	5
P-DL20C	DRAWER	1

P-KIT-FASTPIPE-6

3/8" Pipe Kit contains 19 items, 130 pieces of the most popular tees, elbows, couplings, bushing, plugs and nipples in the product offering.

Designed for P-DL20C drawer.

18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-100A-C	3/8" FPT ELBOW	5
P-101A-C	3/8" FPT TEE	5
P-103A-C	3/8" FPT COUPLING	10
P-119A-DC	1/2" X 3/8" COUPLING	5
P-108A-C	3/8" CAP	10
P-109A-C	3/8" SQ HD PLUG	10
P-110A-DC	1/2" X 3/8" HEX BUSHING	10
P-112A-C	3/8" CLOSE NIPPLE	10
P-113A-C15	3/8" X 1-1/2" NIPPLE	5
P-113A-C2	3/8" X 2" NIPPLE	5
P-122A-C	3/8" HEX NIPPLE	10
P-123A-DC	1/2" X 3/8" HEX NIPPLE	5
P-116A-C	3/8" 90° STREET ELBOW	5
P-124A-C	3/8" 45° STREET ELBOW	5
P-127A-C	3/8" STREET TEE	5
P-120A-CC	3/8" FPT X 3/8" MPT CONN	5
P-120A-DC	1/2" FPT X 3/8" MPT CONN	5
P-121A-C	3/8" HEX PLUG	10
P-102A-C	3/8" CROSS	5
P-DL20C	DRAWER	1

P-KIT-FASTPIPE-4

1/4" Pipe Kit contains 19 items, 255 pieces of the most popular tees, elbows, couplings, bushing, plugs and nipples in the product offering.

Designed for P-DL20C drawer.

18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-100A-B	1/4" FPT ELBOW	5
P-101A-B	1/4" FPT TEE	5
P-103A-B	1/4" FPT COUPLING	25
P-119A-CB	3/8" X 1/4" COUPLING	5
P-108A-B	1/4" CAP	25
P-109A-B	1/4" SQ HD PLUG	25
P-110A-CB	3/8" X 1/4" HEX BUSHING	25
P-112A-B	1/4" CLOSE NIPPLE	25
P-113A-B15	1/4" X 1-1/2" NIPPLE	5
P-113A-B2	1/4" X 2" NIPPLE	5
P-122A-B	1/4" HEX NIPPLE	25
P-123A-CB	3/8" X 1/4" HEX NIPPLE	5
P-116A-B	1/4" 90° STREET ELBOW	10
P-124A-B	1/4" 45° STREET ELBOW	10
P-127A-B	1/4" STREET TEE	5
P-120A-BB	1/4" FPT X 1/4" MPT CONN	10
P-120A-CB	3/8" FPT X 1/4" MPT CONN	10
P-121A-B	1/4" HEX PLUG	25
P-102A-B	1/4" CROSS	5
P-DL20C	DRAWER	1

P-KIT-FASTPIPE-8

1/2" Pipe Kit contains 18 items, 116 pieces of the most popular tees, elbows, couplings, bushing, plugs and nipples in the product offering.

Designed for P-DL20C drawer.

18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-100A-D	1/2" FPT ELBOW	5
P-101A-D	1/2" FPT TEE	5
P-103A-D	1/2" FPT COUPLING	25
P-119A-DB	1/2" X 1/4" COUPLING	5
P-108A-D	1/2" CAP	25
P-109A-D	1/2" SQ HD PLUG	25
P-110A-DB	1/2" X 1/4" HEX BUSHING	25
P-112A-D	1/2" CLOSE NIPPLE	25
P-113A-D15	1/2" X 1-1/2" NIPPLE	5
P-113A-D2	1/2" X 2" NIPPLE	5
P-122A-D	1/2" HEX NIPPLE	25
P-123A-DB	1/2" X 1/4" HEX NIPPLE	5
P-116A-D	1/2" 90° STREET ELBOW	10
P-124A-D	1/2" 45° STREET ELBOW	10
P-120A-DB	1/2" FPT X 1/4" MPT CONN	10
P-120A-DD	1/2" FPT X 1/2" MPT CONN	10
P-121A-D	1/2" HEX PLUG	25
P-102A-D	1/2" CROSS	5
P-DL20C	DRAWER	1

Assortment Kits

P-FA-PIPE-12

3/4" Pipe Kit contains 17 items, 95 pieces of the most popular tees, elbows, couplings, bushing, plugs and nipples in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-100A-E	3/4" FPT ELBOW	4
P-101A-E	3/4" FPT TEE	4
P-103A-E	3/4" FPT COUPLING	5
P-119A-ED	3/4" X 1/2" COUPLING	3
P-108A-E	3/4" CAP	5
P-109A-E	3/4" SQ HD PLUG	10
P-110A-EB	3/4" X 1/4" HEX BUSHING	5
P-110A-EC	3/4" X 3/8" HEX BUSHING	5
P-110A-ED	3/4" X 1/2" HEX BUSHING	10
P-112A-E	3/4" CLOSE NIPPLE	10
P-113A-E15	3/4" X 1-1/2" NIPPLE	5
P-113A-E2	3/4" X 2" NIPPLE	5
P-122A-E	3/4" HEX NIPPLE	5
P-123A-ED	3/4" X 1/2" HEX NIPPLE	3
P-116A-E	3/4" 90° STREET ELBOW	3
P-120A-ED	3/4" FPT X 1/2" MPT CONN	3
P-121A-E	3/4" HEX PLUG	10
P-DL20C	DRAWER	1

P-FA-FL-6

3/8" Flare Kit contains 20 items, 125 pieces of the most popular tees, connector, unions, nuts and elbows in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-N1-6	3/8" SHORT ROD NUT	10
P-N2-6	3/8" LONG ROD NUT	5
P-NS4-6	3/8" SHORT FGD NUT	10
P-N5-6	3/8" FLARE CAP	10
P-P-2-6	3/8" FLARE PLUG	5
P-T2-6	3/8" FLARE TEE	5
P-U2-6	3/8" X 3/8" MALE UNION	5
P-U1-6B	3/8" X 1/4" MALE CONNECTOR	5
P-U1-6C	3/8" X 3/8" MALE CONNECTOR	10
P-U1-6D	3/8" X 1/2" MALE CONNECTOR	10
P-U3-6C	3/8" X 3/8" FEMALE COUPLING	5
P-U3-6D	3/8" X 1/2" FEMALE COUPLING	5
P-E1-6B	3/8" X 1/4" MALE ELBOW	5
P-E1-6C	3/8" X 3/8" MALE ELBOW	5
P-E3-6C	3/8" X 3/8" FEMALE ELBOW	5
P-E3-6D	3/8" X 1/2" FEMALE ELBOW	5
P-E2-6	3/8" X 3/8" FLARE ELBOW	5
P-US4-6	3/8" SWIVEL CONNECTOR	5
P-T1-6B	3/8" X 1/4" MALE TEE	5
P-UR2-64	3/8" X 1/4" RED UNION	5
P-DL20C	DRAWER	1

P-FA-FL-4

1/4" Flare Kit contains 18 items, 155 pieces of the most popular tees, connector, unions, nuts and elbows in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-N1-4	1/4" SHORT ROD NUT	25
P-N2-4	1/4" LONG ROD NUT	5
P-NS4-4	1/4" SHORT FGD NUT	10
P-N5-4	1/4" FLARE CAP	10
P-P-2-4	1/4" FLARE PLUG	5
P-T2-4	1/4" FLARE TEE	5
P-U2-4	1/4" X 1/4" MALE UNION	25
P-U1-4A	1/4" X 1/8" MALE CONNECTOR	10
P-U1-4B	1/4" X 1/4" MALE CONNECTOR	5
P-U3-4A	1/4" X 1/8" FEMALE COUPLING	5
P-U3-4B	1/4" X 1/4" FEMALE COUPLING	5
P-E1-4A	1/4" X 1/8" MALE ELBOW	10
P-E1-4B	1/4" X 1/4" MALE ELBOW	5
P-E3-4A	1/4" X 1/8" FEMALE ELBOW	5
P-E3-4B	1/4" X 1/4" FEMALE ELBOW	5
P-E2-4	1/4" X 1/4" FLARE ELBOW	5
P-US4-4	1/4" SWIVEL CONNECTOR	10
P-T1-4A	1/4" X 1/8" MALE TEE	5
P-DL20C	DRAWER	1

P-FA-FL-8

1/2" Flare Kit contains 19 items, 107 pieces of the most popular tees, connector, unions, nuts and elbows in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-N1-8	1/2" SHORT ROD NUT	10
P-N2-8	1/2" LONG ROD NUT	5
P-NS4-8	1/2" SHORT FGD NUT	10
P-N5-8	1/2" FLARE CAP	10
P-P2-8	1/2" FLARE PLUG	5
P-T2-8	1/2" FLARE TEE	4
P-U2-8	1/2" X 3/8" MALE UNION	5
P-U1-8C	1/2" X 3/8" MALE CONNECTOR	5
P-U1-8D	1/2" X 1/2" MALE CONNECTOR	10
P-U3-8C	1/2" X 3/8" FEMALE COUPLING	5
P-U3-8D	1/2" X 1/2" FEMALE COUPLING	5
P-E1-8C	1/2" X 3/8" MALE ELBOW	3
P-E1-8D	1/2" X 1/2" MALE ELBOW	3
P-E3-8C	1/2" X 3/8" FEMALE ELBOW	5
P-E3-8D	1/2" X 1/2" FEMALE ELBOW	5
P-E2-8	1/2" X 1/2" FLARE ELBOW	5
P-US4-8	1/2" SWIVEL CONNECTOR	5
P-T1-8D	1/2" X 1/2" MALE TEE	2
P-UR2-86	1/2" X 3/8" RED UNION	5
P-DL20C	DRAWER	1

Assortment Kits

P-FA-NAB-20

The Nylon Air Brake Kit contains 20 items, 179 pieces of the most popular DOT nylon airbrake fittings in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-60NAB-4	1/4" NAB SLEEVE	25
P-60NAB-6	3/8" NAB SLEEVE	25
P-60NAB-8	1/2" NAB SLEEVE	10
P-61NAB-4	1/4" NAB NUT	25
P-61NAB-6	3/8" NAB NUT	25
P-61NAB-8	1/2" NAB NUT	10
P-62NAB-4	1/4" X 1/4" NAB UNION	5
P-62NAB-6	3/8" X 3/8" NAB UNION	5
P-62NAB-8	1/2" X 1/2" NAB UNION	3
P-64NAB-4	1/4" X 1/4" X 1/4" NAB TEE	5
P-64NAB-6	3/8" X 3/8" X 3/8" NAB TEE	3
P-64NAB-8	1/2" X 1/2" X 1/2" NAB TEE	3
P-VS68NAB-4A	1/4" X 1/8" NAB MALE COUPLING	5
P-VS68NAB-6B	3/8" X 1/4" NAB MALE COUPLING	5
P-VS68NAB-6C	3/8" X 3/8" NAB MALE COUPLING	5
P-VS69NAB-4A	1/4" X 1/8" NAB MALE ELBOW	5
P-VS69NAB-6B	3/8" X 1/4" NAB MALE ELBOW	5
P-VS69NAB-6C	3/8" X 3/8" NAB MALE ELBOW	5
P-VS69NAB-8C	1/2" X 3/8" NAB MALE ELBOW	2
P-VS79NAB-6B	3/8" X 1/4" NAB MALE 45° ELBOW	3
P-DL20C	DRAWER	1

P-FA-COMP-4

1/4" Compression Kit contains 19 items, 283 pieces of the most popular tees, connector, unions, nuts, sleeves and elbows in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-60A-4	1/4" COMP SLEEVE	50
P-61A-4	1/4" COMP NUT	50
P-60AP-4	1/4" DELRIN SLEEVE	25
P-60AE-4	1/4" BRASS INSERT	25
P-62A-44	1/4" X 1/4" COMP UNION	25
P-64A-44	1/4" X 1/4" X 1/4" COMP TEE	5
P-65A-44	1/4" X 1/4" COMP ELBOW	5
P-66A-4A	1/4" X 1/8" FEMALE ADAPTER	10
P-66A-4B	1/4" X 1/4" FEMALE ADAPTER	10
P-66A-4C	1/4" X 3/8" FEMALE ADAPTER	5
P-68A-4A	1/4" X 1/8" MALE CONNECTOR	25
P-68A-4B	1/4" X 1/4" MALE CONNECTOR	10
P-68A-4C	1/4" X 3/8" MALE CONNECTOR	2
P-69A-4A	1/4" X 1/8" MALE ELBOW	10
P-69A-4B	1/4" X 1/4" MALE ELBOW	5
P-70A-4A	1/4" X 1/8" FEMALE ELBOW	5
P-71A-4A	1/4" X 1/8" MALE RUN TEE	2
P-72A-4A	1/4" X 1/8" MALE BRANCH TEE	2
P-72A-4B	1/4" X 1/4" MALE BRANCH TEE	2
P-DL20C	DRAWER	1

P-FA-COMP-6

3/8" Compression Kit contains 19 items, 189 pieces of the most popular tees, connector, unions, nuts, sleeves and elbows in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-60A-6	3/8" COMP SLEEVE	25
P-61A-6	3/8" COMP NUT	25
P-60AP-6	3/8" DELRIN SLEEVE	25
P-60AE-6	3/8" BRASS INSERT	25
P-62A-66	3/8" X 3/8" COMP UNION	10
P-62A-64	3/8" X 1/4" COMP UNION	5
P-64A-66	3/8" X 3/8" X 3/8" COMP TEE	5
P-65A-66	3/8" X 3/8" COMP ELBOW	5
P-66A-6B	3/8" X 1/4" FEMALE ADAPTER	5
P-66A-6C	3/8" X 3/8" FEMALE ADAPTER	5

PART NO.	DESCRIPTION	QTY
P-66A-6D	3/8" X 1/2" FEMALE ADAPTER	5
P-68A-6B	3/8" X 1/4" MALE CONNECTOR	5
P-68A-6C	3/8" X 3/8" MALE CONNECTOR	10
P-68A-6D	3/8" X 1/2" MALE CONNECTOR	10
P-69A-6B	3/8" X 1/4" MALE ELBOW	5
P-69A-6C	3/8" X 3/8" MALE ELBOW	5
P-69A-6D	3/8" X 1/2" MALE ELBOW	5
P-72A-6B	3/8" X 1/4" MALE BRANCH TEE	2
P-72A-6C	3/8" X 3/8" MALE BRANCH TEE	2
P-DL20C	DRAWER	1

Assortment Kits

P-FA-COMP-8

1/2" Compression Kit contains 18 items, 147 pieces of the most popular tees, connector, unions, nuts, sleeves and elbows in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-60A-8	1/2" COMP SLEEVE	25
P-61A-8	1/2" COMP NUT	10
P-60AP-8	1/2" DELRIN SLEEVE	25
P-60AE-8	1/2" BRASS INSERT	25
P-62A-88	1/2" X 1/2" COMP UNION	5
P-62A-86	1/2" X 3/8" COMP UNION	5
P-64A-88	1/2" X 1/2" X 1/2" COMP TEE	4
P-65A-88	1/2" X 1/2" COMP ELBOW	4
P-66A-8C	1/2" X 3/8" FEMALE ADAPTER	5
P-66A-8D	1/2" X 1/2" FEMALE ADAPTER	5
P-68A-8B	1/2" X 1/4" MALE CONNECTOR	5
P-68A-8C	1/2" X 3/8" MALE CONNECTOR	5
P-68A-8D	1/2" X 1/2" MALE CONNECTOR	5
P-69A-8B	1/2" X 1/4" MALE ELBOW	5
P-69A-8C	1/2" X 3/8" MALE ELBOW	5
P-69A-8D	1/2" X 1/2" MALE ELBOW	5
P-72A-8C	1/2" X 3/8" MALE BRANCH TEE	2
P-72A-8D	1/2" X 1/2" MALE BRANCH TEE	2
P-DL20C	DRAWER	1

P-FA-GH-16

The Garden Hose Kit contains 12 items, 100 pieces of the most popular nuts, swivels, connectors and adapters in the product offering.

Designed for P-DL16C drawer.
18-1/4" L x 12" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-19A-12D	3/4" MH X 1/2" MPT HOSE ADPT	10
P-19AF-12DE	3/4" MH X 3/4" MPT W/1/2" TAP	10
P-5AS-12D	3/4" FH X 1/2" FPT SWIVEL	5
P-5AS-12E	3/4" FH X 3/4" FPT SWIVEL	5
P-22AS-12E	3/4" FH X 3/4" FH SWIVEL	10
P-GHN5	3/4" CAP	10
P-18A-12D	3/4" MH X 1/2" FPT HOSE ADPT	10
P-18A-12E	3/4" MH X 3/4" FPT HOSE ADPT	10
P-5A-12D	3/4" FH X 1/2" FPT ADPT	10
P-5A-12E	3/4" FH X 3/4" FPT ADPT	10
P-20A-12D	3/4" FH X 1/2" MPT HOSE ADPT	5
P-20A-12E	3/4" FH X 3/4" MPT HOSE ADPT	5
P-DL16C	DRAWER	1

P-FA-COMP-10

5/8" Compression Kit contains 15 items, 91 pieces of the most popular tees, connector, unions, nuts, sleeves and elbows in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-60A-10	5/8" COMP SLEEVE	10
P-61A-10	5/8" COMP NUT	10
P-60AP-10	5/8" DELRIN SLEEVE	10
P-60AE-10	5/8" BRASS INSERT	10
P-62A-1010	5/8" X 5/8" COMP UNION	10
P-62A-106	5/8" X 3/8" COMP UNION	5
P-62A-108	5/8" X 1/2" COMP UNION	5
P-64A-1010	5/8" X 5/8" X 5/8" COMP TEE	4
P-65A-1010	5/8" X 5/8" COMP ELBOW	4
P-66A-10D	5/8" X 1/2" FEMALE ADAPTER	5
P-68A-10C	5/8" X 3/8" MALE CONNECTOR	5
P-68A-10D	5/8" X 1/2" MALE CONNECTOR	5
P-69A-10D	5/8" X 1/2" MALE ELBOW	4
P-70A-10D	5/8" X 1/2" FEMALE ELBOW	2
P-72A-10D	5/8" X 1/2" MALE BRANCH TEE	2
P-DL20C	DRAWER	1

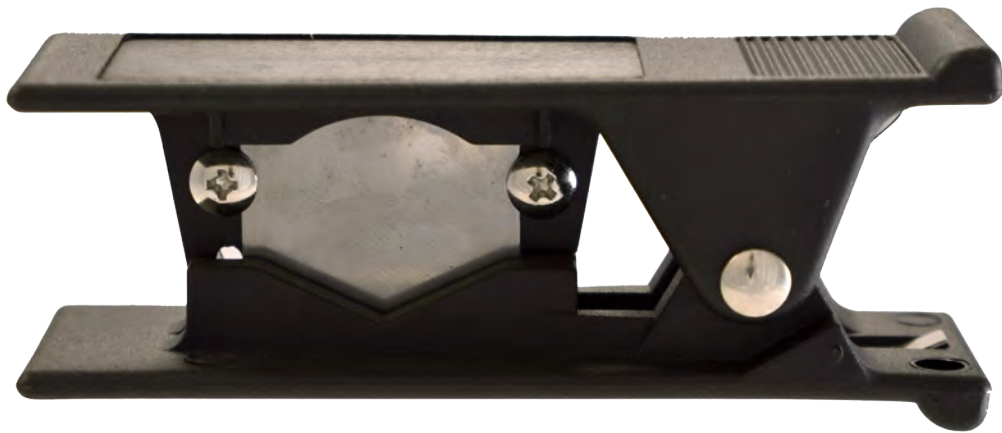
P-FA-INF-20

The Inverted Flare Kit contains 19 items, 245 pieces of the most popular connector, unions, nuts, and elbows in the product offering.

Designed for P-DL20C drawer.
18-1/2" L x 12-1/4" W x 3-1/8" D

PART NO.	DESCRIPTION	QTY
P-411B-4	1/4" BRASS NUT	25
P-411B-5	5/16" BRASS NUT	25
P-411B-6	3/8" BRASS NUT	25
P-411B-8	1/2" BRASS NUT	10
P-42I-4	1/4" UNION	10
P-42I-6	3/8" UNION	10
P-48I-4A	1/4" X 1/8" MALE CONNECTOR	25
P-48I-4B	1/4" X 1/4" MALE CONNECTOR	10
P-48I-5A	5/16" X 1/8" MALE CONNECTOR	25
P-48I-5B	5/16" X 1/4" MALE CONNECTOR	10
P-48I-6A	3/8" X 1/8" MALE CONNECTOR	10
P-48I-6B	3/8" X 1/4" MALE CONNECTOR	10
P-48I-8C	1/2" X 3/8" MALE CONNECTOR	5
P-48I-8D	1/2" X 1/2" MALE CONNECTOR	5
P-49I-4A	1/4" X 1/8" MALE ELBOW	10
P-49I-4B	1/4" X 1/4" MALE ELBOW	10
P-49I-6B	3/8" X 1/4" MALE ELBOW	10
P-49I-8C	1/2" X 3/8" MALE ELBOW	5
P-49I-8D	1/2" X 1/2" MALE ELBOW	5
P-DL20C	DRAWER	1

Tube Cutter



P-AF20307 - Tube Cutter is designed for Polyethylene, Polypropylene, Nylon and other non-braided thermoplastic tubing for O.D.'s to 1/2 in.

Alpha-Numeric

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**CERRO FLOW PRODUCTS LLC
GENERAL TERMS AND CONDITIONS OF PURCHASE**

1. **ACCEPTANCE OF ORDERS**—Acceptance of this order by Seller constitutes acceptance of all terms and conditions stated herein. Any terms and conditions of any proposal heretofore made by Seller shall be deemed superceded to the extent said terms and conditions are inconsistent herewith. If specifications of Buyer's consulting engineer or contractor are supplied herewith, they shall be deemed to be incorporated herein by reference and are a part of this Purchase Order to the same extended as if they had originated with the Buyer. No acknowledgment or acceptance of the order shall be effective which varies the terms hereof or proposes additional terms. Any such proposed variation from the terms hereof shall be deemed to be rejected unless expressly agreed to in writing by Buyer. Acceptance of this Purchase order shall be effective only by means of the Acknowledgment Copy of this Purchase Order.

2. **WARRANTIES**—Seller expressly warrants that all material furnished on this order:

- (a) Will be in exact accordance with the description or specifications contained in such order;
- (b) Will be free from defects in workmanship and material and merchantable;
- (c) Will be fit for the particular purpose for which the goods are required, whether or not the design has been furnished by the Buyer; and
- (d) Will be, except if the design is furnished by the Buyer, free from defects in design.

These warranties are in addition to all other warranties, expressed or implied.

3. **ACCEPTANCE OF MATERIAL**—Final inspection prior to acceptance of material furnished under this order will be made at plant or job site of Buyer either in the U.S. or overseas. In addition, Buyer shall have the right to inspect the goods prior to shipment at Seller's plant at any reasonable time and in any reasonable manner. Payment of Seller's invoices either in full or in part prior to inspection does not constitute final acceptance by Buyer. Buyer's acceptance of material shall not be construed to relieve Seller of the warranties set forth in Section 2 above. This provision shall not affect title to or risk of loss of material and such matters shall be governed by the delivery terms on the face hereof.

4. **BUYER'S REMEDIES**—In addition to any other remedies to which Buyer may be entitled by law. Buyer (a) prior to acceptance, at its option may (1) require Seller, entirely at Seller's expense F.O.B. job or plant site to which material was shipped, to repair, or replace the whole or any part of material found not to be in accord with the warranties mentioned herein, or (2) rescind this order and revert title in Seller if it shall have passed, return such material from inspection point to Seller entirely at Seller's expense, and be entitled to receive from Seller the whole or any part of the purchase price paid; and (b) after acceptance, proceed as in subclause (a) (1) of this paragraph.

5. **PERFORMANCE**—Time is of the essence of this contract. Buyer reserves the right to cancel all or any part of this order if shipment is not made at the time specified, or in the event of any breach hereof, and to charge Seller for any loss resulting from such breach, provided, however, Seller shall not be responsible for loss to Buyer where Seller is prevented from performing by any disabling cause beyond the reasonable control of Seller and gives Buyer prompt notice thereof.

6. **PATENTS**—Seller warrants that the material purchased hereunder does not infringe any patent, copyright or trademark and agrees to save harmless and protect Buyer, its successors, assigns, customers and users against any expense or liability due to any claim or demand based upon such infringement, and if Buyer requests, appear and defend at Seller's own expense, any suits arising therefrom.

7. **ASSIGNMENT**—It is agreed that Seller shall not delegate the performance of any obligation hereunder to any person unless agreed to by Buyer in writing.

8. **INDEMNIFICATION**—If Seller, its agents, employees, or subcontractors enter upon property of Buyer to erect, inspect or deliver the material covered by this order, Seller shall save harmless and indemnify Buyer, its officers and employees, from and against any loss, cost, damage, expense or liability by reason of property damage or personal injury of whatsoever nature arising out of, as a result of, or in connection with such performance, occasioned in whole or in part by actions, or omissions of Seller, its employees, agents or subcontractors.

9. **COMPLIANCE WITH LAWS**—Seller warrants that the requirements of all applicable laws, regulations and directives. Federal, State and Local will be complied with including but not limited to all laws relating to prices, price discrimination, wages and hours, safety, compensation, etc. Seller warrants that all the requirements of all labor laws. Federal, State and Local will be complied with, including all laws relative to wages and hours, safety, compensation, etc.

10. **GOVERNING LAW**—This order shall be governed as to its construction, validity and performance by the laws of the State of New York.

11. **ARBITRATION**—Any dispute concerning interpretation of performance of this order shall be decided by arbitration in the City and State of New York in accordance with the rules of the American Arbitration Association then in effect.

12. **PAYMENT TERMS**— All dates are to be calculated from date of receipt of invoice and complete shipping documents in the office of Buyer.

13. **AFFILIATES**—"Buyer" includes for purposes of paragraphs 2, 3, 4, 5, 6 and 8 hereof any affiliate of Buyer purchasing the material from Buyer.

14. **WAIVER**—Failure of Buyer to insist on full and complete compliance with any of Seller's obligations under these terms and conditions shall not be deemed to be a waiver of any of said terms and conditions and Seller shall remain obligated to fully perform Seller's obligations hereunder unless otherwise agreed to in writing by the Buyer.

15. **INSURANCE**—Seller shall procure and maintain at all times adequate insurance against fire and other casualties covering any and all tools, fixtures, and materials supplied by Buyer to Seller and Seller's insurance shall include a clause providing that loss, if any, shall be payable to Seller and Buyer as their interests may appear.

16. **EQUAL OPPORTUNITY CLAUSE**—There is incorporated herein by reference and made a part of this Contract (or Order) the 'Equal Opportunity Clause' required by regulations of the U.S. Department of Labor, Office of Federal Contract Compliance, Equal Employment Opportunity, Implementing Executive Order No. 11246.

17. **NON-DISCRIMINATION CLAUSE**—The Non-Discrimination clauses contained in Section 202 of the Executive Order 11246 as amended, and the U.S. Department of Labor Order No. 4 effective January 30, 1970, relative to Equal Employment Opportunity for all persons without regard to Race, Creed, Color, Sex, Age or National Origin, and implementing rules and regulations of President's Committee on Equal Employment Opportunity are incorporated herein by reference and made a part of this order.

18. **SAFETY**—All goods, materials, and workmanship furnished under this order must comply with the provisions of the Occupational Safety and Health Act of 1970 (OSHA), as revised and/or amended, and with all other applicable Health and Safety legislation.

NOTES

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