

PRODUCT SPECIFICATION

PVC SCHEDULE 40 PRESSURE FITTINGS

Solvent Weld

APPLICATION:

Corrosion resistant injection molded PVC pipe fittings, IPS sizes 1/4" through 12" produced to Schedule 40 dimensions, for use at temperatures up to and including 140°F. Pressure rating varies with pipe size and temperature. Generally resistant to most acids, bases, salts, aliphatic solutions, oxidants and halogens. Chemical resistance data must be referenced by the design authority for proper material selection prior to use. Typical applications include potable water, water and waste water treatment, chilled water, irrigation, pool and spa, drainage, agricultural, chemical processing and other applications where corrosive fluids are conveyed.

SCOPE:

This specification establishes minimum manufacturing requirements for Poly (Vinyl Chloride) (PVC) Schedule 40 pressure fittings. These fittings are intended for use in pressure applications where the temperature of the fluid conveyed does not exceed 140°F. These fittings meet or exceed the industry standards set forth by the American Society for Testing and Materials (ASTM) and NSF International ANSI/NSF Standard 61 and ANSI/NSF Standard 14.

MATERIALS:

The materials used in the manufacture of the fittings shall be a Rigid Poly (Vinyl Chloride) (PVC) Type 1 PVC compound having a Cell Classification of 12454 per ASTM D1784 (also formerly known as Type I, Grade I PVC; PVC 1120.) Materials used in the manufacture of these fittings shall meet the health and safety requirements of ANSI/NSF Standard 61 as being safe for use with potable water.

DIMENSIONS AND PROPERTIES:

All sizes of PVC Schedule 40 injection molded pressure fittings shall be manufactured in strict accordance to the requirements of ASTM D2466 for physical dimensions and tolerances. All PVC Schedule 40 injection molded fittings shall consistently meet and/or exceed the quality assurance and other requirements of ASTM D2466 with regard to material, workmanship, burst-pressure, dimensions and product marking. All PVC Schedule 40 fittings must also be certified to meet the requirements of ANSI/NSF Standard 61 and ANSI/NSF Standard 14 for use with potable water and shall bear the mark of the Listing agency. These products shall also be certified to NSF/ ANSI 372 conforming to the lead content requirements for "lead free" plumbing as defined by the U.S. Safe Drinking Water act and the state laws of California, Vermont, Maryland, and Louisiana.

MARKING:

All sizes of PVC Schedule 40 fittings shall meet the marking requirements of ASTM D2466 that includes as a minimum the manufacturers name and/or trademark, the material designation PVC 1, the NSF mark of approval for use with potable water, and the designation D2466.

Westlake Pipe & Fittings PVC Sch 40 Fittings Conform to the Following Standards and Specifications as applicable:

ASTM D1784 (Material)	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds. Cell Classification 12454 Type I PVC (formerly known as Type I, Grade I PVC) PVC 1120
ASTM D2466	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
ASTM F1970	Standard Specification for Special Engineered Fittings, Appurtenances or Valves for use in Poly (Vinyl Chloride) or Chlorinated Poly (Vinyl Chloride) (CPVC) Systems
ANSI/ASME B1.20.1	American National Standard Tapered Pipe Threads, General Purpose, Inch
NSF Standard 61	Drinking Water System Components – Health Effects (Third Party Certification materials are suitable for potable water applications)
NSF Standard 14	Plastics Piping System Components and Related Materials (Third Party Certification products meet applicable ASTM performance requirements and are suitable for potable water applications per NSF Std 61)
USA	Pipe fittings manufactured by Westlake Pipe & Fittings are manufactured in the United States of America

PRODUCT SPECIFICATION

PVC SCHEDULE 40 PRESSURE FITTINGS
Solvent Weld

Nominal Size	* Pipe Maximum W.P. Rating (non-shock) @73°F
1/4"	780
3/8"	620
1/2"	600
3/4"	480
1"	450
1 1/4"	370
1 1/2"	330
2"	280
2 1/2"	300
3"	260
4"	220
6"	180
8"	160
10"	140
12"	130

* Pressure ratings stated are for pipe. PVC Sch 40 fittings meeting the requirements of ASTM D2466 meet the same burst pressure as the same size Sch 40 pipe. There are no working pressure ratings established for fittings per this standard.

** See below for additional information.

Temperature De-Rating

The pipe pressure ratings shown are the maximum allowable working pressure for water, non-shock, at 73°F. Allowable pressure ratings decrease with an increase in temperature. The following temperature de-rating factors must be applied to the working pressure ratings shown to determine the maximum allowable pressure rating at elevated temperatures.

Multiply the working pressure rating shown at 73°F by the appropriate de-rating factor for the elevated temperature selected to determine the maximum allowable pressure rating at that temperature.

PVC Temperature De-Rating Factors

Operating Temp (°F)	De-Rating Factor
73°	1.00
80°	0.88
90°	0.75
100°	0.62
110°	0.51
120°	0.40
130°	0.31
140°	0.22

Example:

What is the maximum allowable pressure rating for 4" PVC SCH 40 pipe operating at a temperature of 110°F?

4" PVC Sch 40 pipe = 220 psi@73°F

4" PVC Sch 40 pipe (220 psi x 0.51) = 112 psi

Maximum allowable pressure rating for 4" PVC Sch 40 pipe non-shock for water operating at a temperature of 110°F = 112 psi

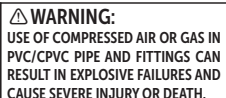
NOTES:

PVC Schedule 40 Pipe and Fitting Material Equivalents: ASTM D1784 Cell Classification 12454 = PVC Type 1 (formerly Type 1, Grade 1 PVC) = PVC1120 = Rigid (Unplasticized) PVC.

Solvent Welded joints should be utilized for joining systems operating at or near maximum allowable temperatures for PVC. Westlake Pipe & Fittings does not recommend the use of conventional PVC threaded connections at temperatures above 110°F. Use flanged connections, unions, grooved couplings or other suitable mechanical connections where disassembly is necessary at elevated temperatures. Flange components must be installed in accordance with Westlake Pipe & Fittings published Flange Installation Guidelines.

Plastic piping systems must be engineered, installed operated and maintained in accordance with accepted standards and procedures. Suitability for the intended application should be determined and verified by the designer and/or installer prior to use. Chemical resistance data must be referenced for proper material selection prior to use.

**Although fittings meet the same burst pressure as pipe, working pressure ratings for schedule 40 fittings are not established per ASTM D2466. A respected rule of thumb based on practical experience suggests that the working pressure ratings for PVC Sch 40 and Sch 80 molded fittings is 60% of the maximum working pressure rating of the same size and schedule PVC pipe (reference 1987 publication "Operating and Maintaining Piping Systems Using PVC Fittings" by Ron D. Bliesner). Westlake Pipe & Fittings supports this widely accepted rule of thumb. The exception is special engineered fittings such as flanges, unions, and valves that do have working pressure ratings established by the manufacturer (they are typically lower than that of the same size pipe). As is the case with pipe, the maximum allowable working pressure for fittings must be decreased with an increase in temperature using the same material temperature de-rating factors. Factors such as fitting geometry, fitting design, system operating conditions (i.e. actual surge conditions), fluids conveyed, severity of service, temperature and other variables must be considered by the design authority when determining suitability for the intended application. Substantial reductions in working pressure are advisable when handling aggressive chemicals and in high temperature service applications.



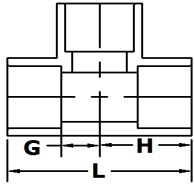


DIMENSIONAL CATALOG

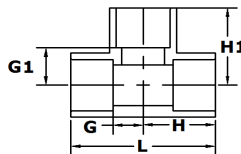
SCH 40 - PVC

Pressure Fittings

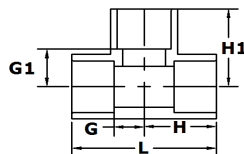
SCHEDULE 40 PVC



Tee				
Part No	Size (in)	L	H	G
401-003	$\frac{3}{8}$	2 $\frac{5}{16}$	1 $\frac{3}{16}$	$\frac{3}{8}$
401-005	$\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	$\frac{1}{2}$
401-007	$\frac{3}{4}$	2 $\frac{3}{4}$	1 $\frac{3}{8}$	$\frac{9}{16}$
401-010	1	3 $\frac{6}{16}$	1 $\frac{11}{16}$	$\frac{11}{16}$
401-012	1 $\frac{1}{4}$	4 $\frac{1}{4}$	2 $\frac{1}{8}$	$\frac{7}{8}$
401-015	1 $\frac{1}{2}$	4 $\frac{5}{8}$	2 $\frac{5}{16}$	1
401-020	2	5 $\frac{1}{4}$	2 $\frac{5}{8}$	1 $\frac{1}{4}$
401-025	2 $\frac{1}{2}$	7	3 $\frac{1}{2}$	1 $\frac{1}{2}$
401-030	3	7 $\frac{5}{8}$	3 $\frac{13}{16}$	1 $\frac{13}{16}$
401-040	4	8 $\frac{11}{16}$	4 $\frac{5}{16}$	2 $\frac{5}{16}$
401-050	5	12 $\frac{1}{16}$	6	3
401-060	6	14 $\frac{1}{16}$	7 $\frac{1}{16}$	3 $\frac{1}{2}$
401-080	8	18	9	4 $\frac{1}{2}$
401-100	10	21 $\frac{13}{16}$	10 $\frac{15}{16}$	5 $\frac{7}{8}$
401-120	12	26 $\frac{1}{8}$	13 $\frac{1}{16}$	7

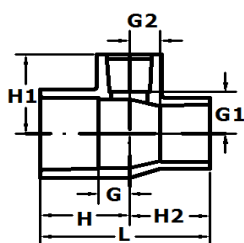


Reducer Tee						
Part No	Size (in)	L	H	H1	G	G1
401-101	$\frac{3}{4} \times \frac{1}{2}$	2 $\frac{5}{8}$	1 $\frac{5}{16}$	1 $\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
401-130	1 $\times \frac{1}{2}$	3	1 $\frac{1}{2}$	1 $\frac{1}{2}$	$\frac{1}{2}$	$\frac{11}{16}$
401-131	1 $\times \frac{3}{4}$	3 $\frac{1}{8}$	1 $\frac{9}{16}$	1 $\frac{1}{2}$	$\frac{9}{16}$	$\frac{11}{16}$
401-166	1 $\frac{1}{4} \times \frac{1}{2}$	3 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$	1 $\frac{1}{4}$	$\frac{7}{8}$
401-167	1 $\frac{1}{4} \times \frac{3}{4}$	3 $\frac{11}{16}$	1 $\frac{7}{8}$	1 $\frac{11}{16}$	$\frac{9}{16}$	$\frac{7}{8}$
401-168	1 $\frac{1}{4} \times 1 \times 1$	3 $\frac{7}{8}$	1 $\frac{15}{16}$	1 $\frac{7}{8}$	$\frac{11}{16}$	$\frac{7}{8}$
401-209	1 $\frac{1}{2} \times \frac{1}{2}$	3 $\frac{11}{16}$	1 $\frac{13}{16}$	1 $\frac{13}{16}$	$\frac{1}{2}$	1
401-210	1 $\frac{1}{2} \times \frac{3}{4}$	3 $\frac{13}{16}$	1 $\frac{15}{16}$	1 $\frac{13}{16}$	$\frac{5}{8}$	1
401-211	1 $\frac{1}{2} \times 1$	4	2	2	$\frac{11}{16}$	1
401-212	1 $\frac{1}{2} \times 1 \frac{1}{4}$	4 $\frac{3}{8}$	2 $\frac{3}{16}$	2 $\frac{1}{4}$	$\frac{7}{8}$	1 $\frac{1}{16}$
401-247	2 $\times \frac{1}{2}$	3 $\frac{13}{16}$	1 $\frac{7}{8}$	2	$\frac{1}{2}$	1 $\frac{1}{4}$
401-248	2 $\times \frac{3}{4}$	3 $\frac{15}{16}$	2	2	$\frac{9}{16}$	1 $\frac{1}{4}$
401-249	2 $\times 1$	4 $\frac{3}{16}$	2 $\frac{1}{16}$	2 $\frac{1}{4}$	$\frac{11}{16}$	1 $\frac{1}{4}$
401-250	2 $\times 1 \frac{1}{4}$	4 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{7}{8}$	1 $\frac{1}{4}$
401-251	2 $\times 1 \frac{1}{2}$	4 $\frac{3}{4}$	2 $\frac{3}{8}$	2 $\frac{9}{16}$	1	1 $\frac{1}{4}$
401-287	2 $\frac{1}{2} \times \frac{1}{2}$	5 $\frac{1}{16}$	2 $\frac{1}{2}$	2 $\frac{3}{16}$	$\frac{1}{2}$	1 $\frac{1}{2}$
401-288	2 $\frac{1}{2} \times \frac{3}{4}$	4 $\frac{15}{16}$	2 $\frac{7}{16}$	2 $\frac{5}{16}$	$\frac{9}{16}$	1 $\frac{1}{2}$
401-289	2 $\frac{1}{2} \times 1$	5 $\frac{3}{16}$	2 $\frac{9}{16}$	2 $\frac{5}{8}$	$\frac{11}{16}$	1 $\frac{1}{2}$
401-290	2 $\frac{1}{2} \times 1 \frac{1}{4}$	5 $\frac{3}{4}$	2 $\frac{7}{8}$	2 $\frac{3}{4}$	$\frac{7}{8}$	1 $\frac{1}{2}$
401-291	2 $\frac{1}{2} \times 1 \frac{1}{2}$	6 $\frac{5}{16}$	3 $\frac{1}{8}$	2 $\frac{3}{4}$	1	1 $\frac{1}{2}$
401-292	2 $\frac{1}{2} \times 2$	6 $\frac{1}{4}$	3 $\frac{1}{8}$	2 $\frac{7}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$
401-333	3 $\times \frac{1}{2}$	5 $\frac{1}{16}$	2 $\frac{1}{2}$	2 $\frac{9}{16}$	$\frac{1}{2}$	1 $\frac{13}{16}$



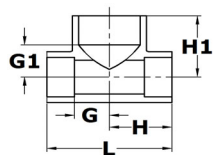
Reducer Tee (con't.)

Part No	Size (in)	L	H	H1	G	G1
401-334	3 x ¾	5 2/16	2 9/16	2 9/16	9/16	1 13/16
401-335	3 x 1	5 3/8	2 11/16	2 7/8	11/16	1 13/16
401-336	3 x 1¼	5 3/4	2 7/8	3 1/16	7/8	1 13/16
401-337	3 x 1½	6 1/16	3	3 3/16	1	1 13/16
401-338	3 x 2	6 1/2	3 1/4	3 3/16	1 1/4	1 13/16
401-339	3 x 2½	7 5/8	3 13/16	4 1/4	1 13/16	2 1/4
401-416	4 x ¾	5 3/16	2 9/16	3	9/16	2 5/16
401-417	4 x 1	5 7/16	2 3/4	3 5/16	11/16	2 5/16
401-418	4 x 4 x 1¼	5 3/4	2 7/8	3 9/16	7/8	2 5/16
401-419	4 x 4 x 1½	6 1/16	3	3 5/8	1	2 5/16
401-420	4 x 4 x 2	6 9/16	3 1/4	3 11/16	1 1/4	2 5/16
401-422	4 x 4 x 3	7 11/16	3 13/16	4 3/8	1 13/16	2 5/16
401-486	5 x 5 x 2	8 1/2	4 1/4	4 3/8	1 1/4	3
401-488	5 x 5 x 3	9 5/8	4 13/16	5	1 13/16	3
401-490	5 x 5 x 4	10 5/8	5 5/16	5	2 5/16	3
401-528	6 x 6 x 2	9 9/16	4 3/4	4 15/16	1 1/4	3 1/2
401-530	6 x 6 x 3	10 11/16	5 3/8	5 9/16	1 13/16	3 9/16
401-532	6 x 6 x 4	11 3/4	5 7/8	5 9/16	2 3/8	3 1/2
401-582	8 x 8 x 4	13 5/8	6 13/16	6 15/16	2 5/16	4 7/8
401-585	8 x 8 x 6	16	8	8 1/16	3 1/2	4 1/2
401-624	10 x 10 x 4	21	10 1/2	7 15/16	5 7/16	5 15/16
401-626	10 x 10 x 6	21	10 1/2	8 15/16	5 7/16	5 15/16
401-628	10 x 10 x 8	21	10 1/2	9 7/8	5 7/16	5 7/8
401-664	12 x 12 x 4	23	11 1/2	9	5 7/16	6 15/16
401-666	12 x 12 x 6	23	11 1/2	10	5 7/16	6 15/16
401-668	12 x 12 x 8	23	11 1/2	11	5 7/16	7
401-670	12 x 12 x 10	26 1/8	13 1/16	13 1/2	7	8 7/16



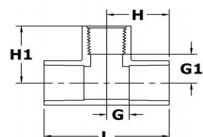
Reducer Tee-Irregular Shape

Part No	Size (in)	L	H	H1	H2	G	G1	G2
401-094	¾ x ½	2 9/16	1 5/16	1 5/16	1 5/16	1/2	9/16	9/16
401-095	¾ x ½ x ¾	2 9/16	1 5/16	1 5/16	1 1/4	9/16	9/16	9/16
401-122	1 x ½ x 1	3 1/16	1 11/16	1 11/16	1 3/8	11/16	3/4	11/16
401-124	1 x ¾ x ½	2 13/16	1 1/2	1 3/8	1 5/16	1/2	11/16	1/2
401-125	1 x ¾	2 15/16	1 9/16	1 7/16	1 3/8	9/16	11/16	9/16
401-126	1 x ¾ x 1	3 3/16	1 11/16	1 11/16	1 1/2	3/4	11/16	11/16
401-156	1¼ x 1 x ½	3 7/8	2 1/16	1 9/16	1 13/16	7/8	13/16	11/16
401-157	1¼ x 1 x ¾	3 7/8	2 1/16	1 5/8	1 13/16	7/8	7/8	11/16
401-158	1¼ x 1 x 1	3 15/16	2 1/8	2	1 3/4	7/8	7/8	11/16
401-199	1½ x 1¼ x ½	4 5/16	2 1/4	1 3/4	2 1/16	1	15/16	13/16
401-201	1½ x 1¼ x ¾	4 7/16	2 5/16	1 13/16	2 1/8	1	1	7/8
401-202	1½ x 1¼ x 1	4 5/16	2 1/4	2 1/8	2 1/16	1	1	7/8
401-238	2 x 1½ x ¾	3 7/8	2	2 1/16	1 15/16	9/16	1 1/4	9/16
401-239	2 x 1½ x 1	4 7/8	2 5/8	2 1/4	2 1/4	1 1/4	1 3/16	1
401-241	2 x 1½ x 1½	4 11/16	2 3/8	2 9/16	2 5/16	1	1 1/4	1



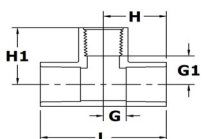
Bullhead Tee

Part No	Size (in)	L	H	H1	G	G1
401-074	½ x ¾	2 3/4	1 3/8	1 1/4	9/16	1/2
401-102	¾ x 1	3	1 1/2	1 9/16	11/16	9/16
401-132	1 x 1¼	3 3/4	1 7/8	1 15/16	7/8	11/16
401-133	1 x 1½	4	2	2	1	11/16
401-213	1½ x 2	5 1/8	2 9/16	2 3/8	1 1/4	1
401-341	3 x 4	8 11/16	4 3/8	3 13/16	2 5/16	1 13/16



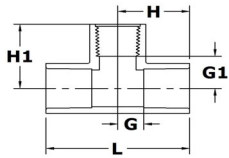
Tee

Part No	Size (in)	L	H	H1	G	G1
402-005	½	2 9/16	1 1/4	1 1/4	1/2	1/2
402-007	¾	2 3/4	1 3/8	1 3/8	9/16	9/16
402-010	1	3 3/8	1 11/16	1 11/16	11/16	11/16
402-012	1¼	4 1/4	2 1/8	2 1/8	7/8	1 3/16
402-015	1½	4 5/8	2 5/16	2 5/16	1	1 7/16
402-020	2	5 1/4	2 5/8	2 3/16	1 1/4	1 1/4
402-030	3	7 5/8	3 13/16	3 3/16	1 13/16	1 3/4
402-040	4	8 5/8	4 5/16	4	2 5/16	2 5/16



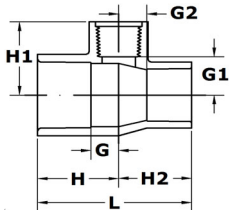
Reducing Tee

Part No	Size (in)	L	H	H1	G	G1
402-071	½ x ½ x ⅝	2 1/16	1	15/16	1/4	1/2
402-072	½ x ½ x ¾	2 7/16	1 3/16	1 1/16	1/2	1/2
402-101	¾ x ¾ x ½	2 9/16	1 5/16	1 5/16	1/2	9/16
402-130	1 x 1 x ½	3	1 1/2	1 7/16	1/2	3/4
402-131	1 x 1 x ¾	3 1/8	1 9/16	1 1/2	9/16	3/4
402-166	1¼ x 1¼ x ½	3 1/2	1 3/4	1 5/8	1/2	7/8
402-167	1¼ x 1¼ x ¾	3 11/16	1 13/16	1 5/8	9/16	15/16
402-168	1¼ x 1¼ x 1	3 7/8	1 15/16	1 7/8	11/16	1
402-209	1½ x 1½ x ½	3 5/8	1 13/16	1 3/4	1/2	1
402-210	1½ x 1½ x ¾	3 13/16	1 7/8	1 13/16	9/16	1 1/8
402-211	1½ x 1½ x 1	4	2	2	11/16	1
402-212	1½ x 1½ x 1¼	4 3/8	2 3/16	2 1/4	7/8	1
402-247	2 x 2 x ½	3 13/16	1 7/8	2	1/2	1 1/4
402-248	2 x ¾	3 15/16	2	2 1/16	9/16	1 1/4
402-249	2 x 2 x 1	4 3/16	2 1/16	2 1/4	11/16	1 1/4
402-250	2 x 2 x 1¼	4 1/2	2 1/4	2 1/2	7/8	1 9/16
402-251	2 x 2 x 1½	4 3/4	2 3/8	2 9/16	1	1 5/8
402-287	2½ x ½	5 1/16	2 1/2	2 1/4	1/2	1 9/16
402-288	2½ x 2½ x ¾	5 1/4	2 5/8	2 5/16	9/16	1 1/2
402-289	2½ x 2½ x 1	5 3/16	2 5/8	2 1/2	11/16	1 1/2
402-290	2½ x 2½ x 1¼	5 13/16	2 7/8	2 1/2	7/8	1 1/2
402-291	2½ x 2½ x 1½	6 1/16	3	2 1/2	1	1 1/2
402-292	2½ x 2½ x 2	6 1/2	3 1/4	2 7/8	1 1/4	1 13/16
402-333	3 x 3 x ½	5 1/16	2 1/2	2 9/16	1/2	1 3/4



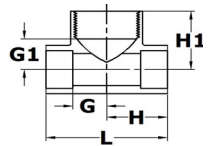
Reducing Tee (con't)

Part No	Size (in)	L	H	H1	G	G1
402-334	3 x 3 x ¾	5 3/16	2 5/8	2 9/16	9/16	1 13/16
402-335	3 x 3 x 1	5 7/16	2 11/16	2 3/4	11/16	1 13/16
402-336	3 x 3 x 1¼	5 3/4	2 7/8	2 13/16	7/8	1 13/16
402-337	3 x 3 x 1½	6	3	2 13/16	1	1 7/8
402-338	3 x 3 x 2	6 9/16	3 1/4	2 7/8	1 1/4	1 13/16
402-416	4 x 4 x ¾	5 3/16	2 9/16	3 1/8	9/16	2 5/16
402-417	4 x 4 x 1	5 7/16	2 11/16	3 5/16	11/16	2 5/16
402-418	4 x 4 x 1¼	5 13/16	2 7/8	3 5/16	7/8	2 1/4
402-419	4 x 4 x 1½	6 1/16	3	3 11/16	1	2 5/16
402-420	4 x 4 x 2	6 1/2	3 1/4	3 3/8	1 1/4	2 1/4
402-422	4 x 4 x 3	7 5/8	3 13/16	4 5/8	1 13/16	3
402-490	5 x 5 x 4	10 11/16	5 5/16	5 1/16	2 5/16	3 5/16
402-528	6 x 6 x 2	9 9/16	4 13/16	4 11/16	1 1/4	3 1/4
402-530	6 x 6 x 3	10 11/16	5 5/16	5 1/2	2 5/16	3 1/2
402-532	6 x 6 x 4	11 11/16	5 13/16	5 1/2	2 5/16	3 1/2



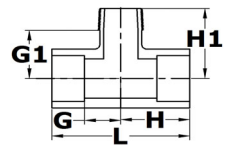
Reducing Tee-Irregular

Part No	Size (in)	L	H	H1	H2	G	G1	G2
402-094	¾ x ½ x ½	2 1/2	1 1/4	1 5/16	1 5/16	1/2	9/16	1/2
402-095	¾ x ½ x ¾	2 3/4	1 3/8	1 3/8	1 3/8	9/16	9/16	5/8
402-124	1 x ¾ x ½	2 13/16	1 1/2	1 1/2	1 5/16	1/2	11/16	1/2
402-125	1 x ¾ x ¾	2 15/16	1 9/16	1 1/2	1 3/8	9/16	11/16	5/8
402-156	1¼ x 1 x ½	3 7/8	2 1/16	1 9/16	1 3/4	7/8	7/8	5/8
402-157	1¼ x 1 x ¾	3 7/8	2 1/16	1 5/8	1 3/4	7/8	15/16	11/16
402-199	1½ x 1¼ x ½	4 5/16	2 1/4	1 11/16	2 1/16	1	15/16	7/8
402-202	1½ x 1¼ x 1	4 5/16	2 1/4	2	2 1/16	15/16	1	7/8
402-239	2 x 1½ x 1	4 7/8	2 9/16	2 1/4	2 1/4	1 1/4	1 3/8	1



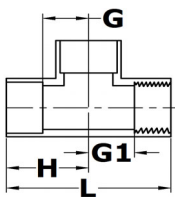
Bullhead Tee

Part No	Size (in)	L	H	H1	G	G1
402-074	½ x ¾	2 3/4	1 3/8	1 5/16	9/16	1/2



Manifold Tee

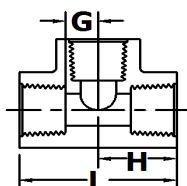
Part No	Size (in)	L	H	H1	G	G1
402B-010	1	3 5/16	1 5/8	1 13/16	11/16	1



Tee

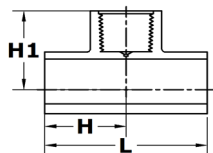
Part No	Size (in)	L	H	G	G1
403-005	½	2 9/16	1 1/4	1/2	1/2
403-007	¾	2 3/4	1 3/8	9/16	9/16

G1 related to thread



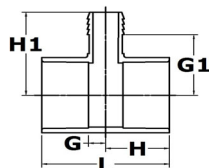
Tee

Part No	Size (in)	L	H	G
405-005	½	2 9/16	1 1/4	1/2
405-007	¾	2 3/4	1 3/8	9/16
405-010	1	3 3/8	1 11/16	11/16
405-012	1¼	4 1/4	2 1/8	1 1/4
405-015	1½	4 5/8	2 5/16	1



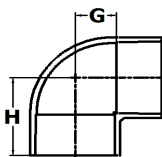
Snap-On Tee

Part No	Size (in)	L	H	H1
464-007	¾	2 3/4	1 3/8	1 3/8
464-101	¾ x ½	2 9/16	1 1/4	1 3/8
464-130	1 x ½	3 1/8	1 9/16	1 1/2
464-131	1 x ¾	3 5/16	1 11/16	1 1/2



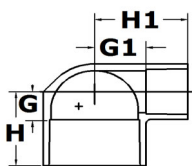
Transition Tee

Part No	Size (in)	L	H	H1	G	G1
1102-249	2 x 2 x 1	3 13/16	1 15/16	3	1/2	1 7/16



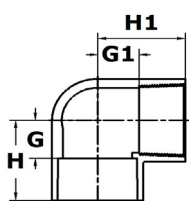
90° Ell

Part No	Size (in)	H	G
406-003	¾	1 1/8	3/8
406-005	½	1 1/4	1/2
406-007	¾	1 3/8	9/16
406-010	1	1 11/16	11/16
406-012	1¼	2 1/8	7/8
406-015	1½	2 1/4	1
406-020	2	2 9/16	1 1/4
406-025	2½	3 1/2	1 1/2
406-030	3	3 13/16	1 13/16
406-040	4	4 3/8	2 5/16
406-050	5	6	3
406-060	6	7	3 1/2
406-080	8	9	4 1/2
406-100	10	11 3/16	6 3/16
406-120	12	13 1/4	7 3/16



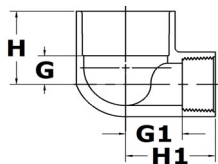
Reducing 90° ELL

Part No	Size (in)	H	H1	G	G1
406-101	$\frac{3}{4} \times \frac{1}{2}$	1 $\frac{5}{16}$	1 $\frac{5}{16}$	$\frac{1}{2}$	$\frac{9}{16}$
406-130	1 x $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{3}{8}$	$\frac{1}{2}$	$\frac{11}{16}$
406-131	1 x $\frac{3}{4}$	1 $\frac{9}{16}$	1 $\frac{1}{2}$	$\frac{9}{16}$	$\frac{11}{16}$
406-167	1 $\frac{1}{4}$ x $\frac{3}{4}$	2	1 $\frac{3}{4}$	$\frac{3}{4}$	$\frac{7}{8}$
406-168	1 $\frac{1}{4}$ x 1	1 $\frac{15}{16}$	1 $\frac{7}{8}$	$\frac{11}{16}$	$\frac{7}{8}$
406-211	1 $\frac{1}{2}$ x 1	2 $\frac{3}{4}$	2 $\frac{3}{16}$	1 $\frac{1}{2}$	1 $\frac{1}{16}$
406-212	1 $\frac{1}{2}$ x 1 $\frac{1}{4}$	2 $\frac{3}{16}$	2 $\frac{1}{4}$	$\frac{7}{8}$	1 $\frac{1}{8}$
406-249	2 x 1	2 $\frac{3}{16}$	2 $\frac{7}{16}$	$\frac{13}{16}$	1 $\frac{3}{8}$
406-250	2 x 1 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{7}{16}$	$\frac{7}{8}$	1 $\frac{1}{4}$
406-251	2 x 1 $\frac{1}{2}$	2 $\frac{7}{16}$	2 $\frac{5}{8}$	1 $\frac{1}{16}$	1 $\frac{5}{16}$



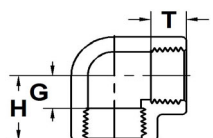
90° ELL

Part No	Size (in)	H	H1	G	G1
407-005	$\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{3}{16}$	$\frac{1}{2}$	$\frac{7}{16}$
407-007	$\frac{3}{4}$	1 $\frac{3}{8}$	1 $\frac{3}{8}$	$\frac{5}{8}$	$\frac{9}{16}$
407-010	1	1 $\frac{5}{8}$	1 $\frac{11}{16}$	$\frac{11}{16}$	$\frac{11}{16}$
407-012	1 $\frac{1}{4}$	2 $\frac{3}{16}$	1 $\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$
407-015	1 $\frac{1}{2}$	2 $\frac{5}{16}$	2 $\frac{5}{16}$	1	1
407-020	2	2 $\frac{5}{8}$	2 $\frac{5}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$
407-025	2 $\frac{1}{2}$	3 $\frac{3}{8}$	2 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
407-030	3	3 $\frac{3}{4}$	3 $\frac{3}{16}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$
407-040	4	4 $\frac{3}{8}$	4 $\frac{3}{16}$	2 $\frac{3}{8}$	3 $\frac{5}{16}$



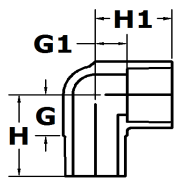
Reducing 90° ELL

Part No	Size (in)	H	H1	G	G1
407-074	$\frac{1}{2} \times \frac{3}{4}$	1 $\frac{3}{8}$	1 $\frac{5}{16}$	$\frac{9}{16}$	$\frac{1}{2}$
407-101	$\frac{3}{4} \times \frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{1}{4}$	$\frac{9}{16}$	$\frac{9}{16}$
407-130	1 x $\frac{1}{2}$	1 $\frac{9}{16}$	1 $\frac{3}{8}$	$\frac{9}{16}$	$\frac{11}{16}$
407-131	1 x $\frac{3}{4}$	1 $\frac{9}{16}$	1 $\frac{1}{2}$	$\frac{9}{16}$	$\frac{11}{16}$
407-168	1 $\frac{1}{4}$ x 1	1 $\frac{15}{16}$	1 $\frac{7}{8}$	$\frac{11}{16}$	$\frac{7}{8}$
407-211	1 $\frac{1}{2}$ x 1	1 $\frac{15}{16}$	2 $\frac{3}{4}$	1 $\frac{1}{16}$	1 $\frac{3}{4}$
407-212	1 $\frac{1}{2}$ x 1 $\frac{1}{4}$	2 $\frac{3}{16}$	2 $\frac{1}{4}$	$\frac{7}{8}$	1 $\frac{5}{16}$
407-249	2 x 1	2 $\frac{3}{16}$	2 $\frac{7}{16}$	$\frac{13}{16}$	1 $\frac{9}{16}$
407-250	2 x 1 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{7}{16}$	$\frac{7}{8}$	1 $\frac{9}{16}$
407-251	2 x 1 $\frac{1}{2}$	2 $\frac{7}{16}$	2 $\frac{5}{8}$	1 $\frac{1}{16}$	1 $\frac{11}{16}$



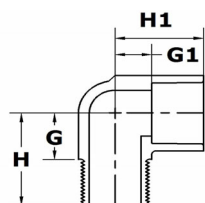
90° ELL

Part No	Size (in)	H	G
408-005	$\frac{1}{2}$	1 $\frac{5}{16}$	$\frac{1}{2}$
408-007	$\frac{3}{4}$	1 $\frac{3}{8}$	$\frac{9}{16}$
408-010	1	1 $\frac{11}{16}$	$\frac{11}{16}$
408-012	1 $\frac{1}{4}$	2 $\frac{1}{8}$	$\frac{7}{8}$
408-015	1 $\frac{1}{2}$	2 $\frac{5}{16}$	$\frac{15}{16}$
408-020	2	2 $\frac{5}{8}$	1 $\frac{1}{4}$



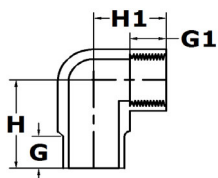
90° Street Ell

Part No	Size (in)	H	H1	G	G1
409-005	½	1 5/16	1 1/8	9/16	5/16
409-007	¾	1 5/8	1 1/4	13/16	1/2
409-010	1	1 7/8	1 7/16	7/8	9/16
409-012	1¼	2 3/8	2 1/8	1 1/16	13/16
409-015	1½	2 5/8	2 5/16	1 1/4	1
409-020	2	2 7/8	2 5/8	1 7/16	1 1/4
409-025	2 ½	4 1/16	3 3/8	2	1 7/16
409-030	3	4 7/16	4 3/16	2 5/16	2 3/16



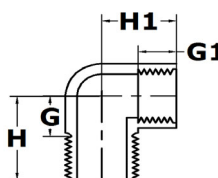
90° Street Ell

Part No	Size (in)	H	H1	G	G1
410-005	½	1 5/16	1 1/4	11/16	1/2
410-007	¾	1 9/16	1 1/4	3/4	7/16
410-010	1	1 7/8	1 9/16	1	9/16
410-012	1¼	1 15/16	2 1/16	1 1/8	13/16
410-015	1½	2 5/16	2 5/16	1 1/4	1
410-020	2	2 1/4	2 11/16	1 1/2	1 5/16
410-101	¾ x ½	1 1/4	1 3/8	1/2	3/4



90° Street Ell

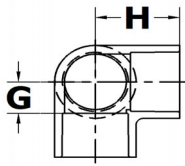
Part No	Size (in)	H	H1	G	G1
411-005	½	1 5/16	1 1/8	9/16	3/8
411-007	¾	1 1/2	1 1/4	11/16	1/2
411-010	1	1 13/16	1 9/16	13/16	9/16
411-012	1¼	2 3/8	2 1/16	1 1/16	1 1/8
411-015	1½	2 5/8	2 5/16	1 5/16	1



90° Street Ell

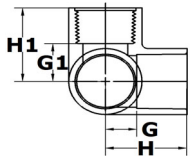
Part No	Size (in)	H	H1	G	G1
412-005	½ PVC	1 7/16	1 1/16	13/16	5/16
412-007	¾ PVC	1 5/8	1 3/16	13/16	7/16
412-010	1 PVC	1 14/16	1 7/16	7/8	9/16
412-012	1¼ PVC	1 15/16	2 1/8	1 1/8	1 3/16
412-015	1½ PVC	2 5/16	2 5/16	1 1/4	1 5/16
M412-005	½ Poly*	1 3/8	1	3/4	5/16
M412-007	¾ Poly*	1 11/16	1 3/16	7/8	7/16
M412-010	1 Poly*	1 7/8	1 1/2	15/16	1/2

*Not Listed by NSF



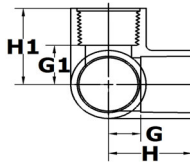
90° Side Outlet Ell

Part No	Size (in)	H	G
413-005	½	1 5/16	9/16
413-007	¾	1 3/8	9/16
413-010	1	1 11/16	11/16
413-015	1 ½	2 5/16	1
413-020	2	2 5/8	1 1/4



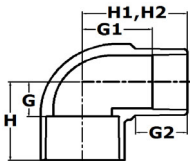
90° Side Outlet Ell

Part No	Size (in)	H	H1	G	G1
414-005	½	1 1/4	1 3/16	1/2	1/2
414-010	1	1 11/16	1 11/16	11/16	13/16



90° Side Outlet Ell-Reducer

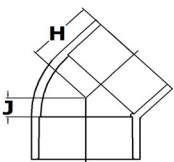
Part No	Size (in)	H	H1	G	G1
414-101	¾ x ½	1 5/16	1 3/8	9/16	11/16
414-130	1 x 1 x ½	1 3/4	1 3/8	11/16	11/16



Reducing Ell

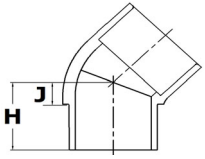
Part No	Size (in)	H	H1	H2	G	G1	G2
416-251	2 x 1½ (2 Sp)	2 5/8	2 7/8	2 7/8	1 1/4	1 9/16	1 1/2
416-292	2½ x 2 (2½ Sp)	3 3/8	4 1/8	4 1/8	2 3/4	1 1/2	2 1/16

**H2, G2 items pertain to dimension of spigot



45° Ell

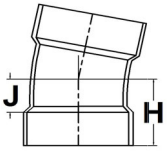
Part No	Size (in)	H	J
417-005	½	1 1/16	1/4
417-007	¾	1 1/8	3/8
417-010	1	1 7/16	5/16
417-012	1¼	1 5/8	3/8
417-015	1½	1 11/16	7/16
417-020	2	2	11/16
417-025	2½	2 11/16	11/16
417-030	3	2 3/4	3/4
417-040	4	3	1
417-050	5	4 3/8	1 3/8
417-060	6	5 3/8	1 13/16
417-080	8	6 1/2	2
417-100	10	8 1/16	3 1/16
417-120	12	9 9/16	3 1/2



45° Street Ell

Part No	Size (in)	H	J
423-015	1½	1 15/16	11/16
423-020	2	2	5/8
423-025	2½	3 1/16	1 1/16
423-030	3	3 1/4	1 1/4
423-100	10	8 1/16	3 1/16
423-120	12	9 9/16	3 1/2

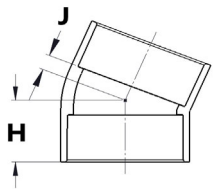
* H & J is related to spigot



11¼° Ell

Part No.	Size (in)	H*	J*
461-100	10	5 15/16	3/4
461-120	12	7 5/16	1

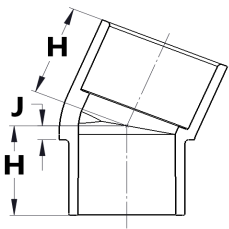
H & J Lengths may vary, Socket Depths are averages



22½° Ell

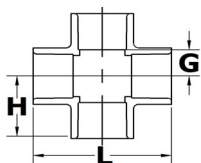
Part No	Size (in)	H	J
465-015	1½	1 2/4	1/3
465-020	2	2	3/4
465-025	2½	2 1/2	1/2
465-030	3	2 5/9	4/8
465-040	4	2 10/16	10/16
465-060	6	4 1/2	1 1/2
465-100*	10	6 11/16	1 1/4
465-120*	12	7 13/16	1 1/2

* Parts are fabricated from pipe



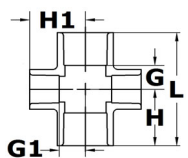
22 1/2° Elbow Slip x Spigot

Part No	Size (in)	H	J
466-015	1 1/2	1 5/8	1/4
466-020	2	2	5/8
466-025	2 1/2	2 1/2	7/16
466-030	3	2 9/16	1/2
466-040	4	2 9/16	1/2
466-060	6	4 17/32	1 15/32



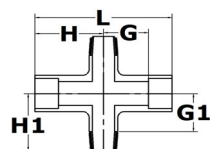
Cross

Part No	Size (in)	L	H	G
420-005	½	2 7/16	1 3/16	1/2
420-007	¾	2 5/8	1 5/16	9/16
420-010	1	3 3/8	1 11/16	11/16
420-012	1¼	4 1/4	2 1/8	7/8
420-015	1½	4 5/8	2 5/16	1
420-020	2	5 1/4	2 5/8	1 1/4
420-025	2½	7	3 1/2	1 1/2
420-030	3	7 5/8	3 13/16	1 13/16
420-040	4	8 11/16	4 5/16	2 5/16



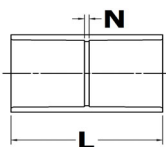
Reducing Cross

Part No	Size (in)	L	H	H1	G	G1
420-335	3 x 1	5 7/16	2 3/4	2 13/16	11/16	1 13/16
420-337	3 x 1½	6	3	3 1/8	1	1 13/16
420-338	3 x 2	6 9/16	3 1/4	3 3/16	1 1/4	1 13/16
420-419	4 x 1½	6 1/16	3	3 5/8	1	2 5/16
420-420	4 x 2	6 9/16	3 1/4	3 11/16	1 1/4	2 5/16



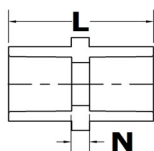
Manifold Cross

Part No	Size (in)	L	H	H1	G	G1
421A-010	1	3 5/16	1 5/8	1 13/16	11/16	1



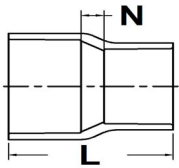
Long Socket Coupling

Part No	Size (in)	L	N
428-015	1½ (1.825*)	3 3/4	1/8
428-020	2 (1.945*)	4	1/8



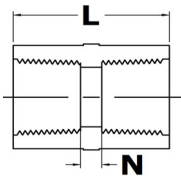
Coupling

Part No	Size (in)	L	N
429-003	¾	1 5/8	1/8
429-005	½	1 11/16	1/8
429-007	¾	1 11/16	1/8
429-010	1	2 1/16	1/8
429-012	1¼	2 5/8	1/8
429-015	1½	2 3/4	1/8
429-020	2	2 7/8	1/8
429-025	2 ½	4 1/16	3/16
429-030	3	4 3/16	3/16
429-040	4	4 1/4	3/16
429-050	5	6 1/4	3/16
429-060	6	7 5/16	5/16
429-080	8	9 1/4	1/4
429-100	10	10 5/16	5/16
429-120	12	12 3/8	5/16



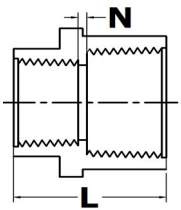
Reducer Coupling (con't)

Part No	Size (in)	L	N
429-101	$\frac{3}{4} \times \frac{1}{2}$	1 $\frac{5}{8}$	$\frac{1}{8}$
429-131	1 x $\frac{3}{4}$	2 $\frac{1}{8}$	$\frac{1}{4}$
429-168	1 $\frac{1}{4}$ x 1	2 $\frac{9}{16}$	$\frac{5}{16}$
429-212	1 $\frac{1}{2}$ x 1 $\frac{1}{4}$	2 $\frac{3}{4}$	$\frac{1}{4}$
429-251	2 x 1 $\frac{1}{2}$	3 $\frac{1}{8}$	$\frac{7}{16}$
429-338	3 x 2	4 $\frac{1}{16}$	$\frac{5}{8}$
429-422	4 x 3	4 $\frac{5}{8}$	$\frac{5}{8}$
429-532	6 x 4	6 $\frac{5}{8}$	1 $\frac{3}{16}$
429-582	8 x 4	8 $\frac{15}{16}$	2 $\frac{3}{8}$
429-585	8 x 6	9 $\frac{1}{16}$	1 $\frac{1}{16}$
429-626	10 x 6	10 $\frac{13}{16}$	2 $\frac{11}{16}$
429-628	10 x 8	10 $\frac{3}{4}$	1 $\frac{11}{16}$
429-668	12 x 8	12 $\frac{7}{8}$	2 $\frac{11}{16}$
429-670	12 x 10	13 $\frac{1}{16}$	1 $\frac{15}{16}$



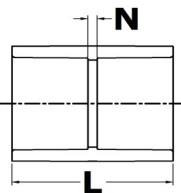
Coupling

Part No	Size (in)	L	N
430-005	$\frac{1}{2}$	1 $\frac{11}{16}$	$\frac{5}{16}$
430-007	$\frac{3}{4}$	2	$\frac{1}{16}$
430-010	1	2 $\frac{1}{16}$	$\frac{1}{16}$
430-020	2	2 $\frac{1}{2}$	$\frac{5}{8}$
430-005-45	$\frac{1}{2}$ GRAY	1 $\frac{11}{16}$	$\frac{5}{16}$
430-007-45	$\frac{3}{4}$ GRAY	2	0



Coupling

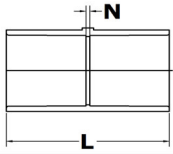
Part No	Size (in)	L	N
430-101	$\frac{3}{4} \times \frac{1}{2}$	1 $\frac{9}{16}$	$\frac{1}{8}$
430-131	1 x $\frac{3}{4}$	1 $\frac{13}{16}$	$\frac{1}{16}$
430-101-45	$\frac{3}{4} \times \frac{1}{2}$ GRAY	1 $\frac{9}{16}$	$\frac{1}{16}$
430-131-45	1 x $\frac{3}{4}$ GRAY	1 $\frac{3}{4}$	$\frac{1}{16}$



Nested Coupling

Part No	Size (in)	L	N
477-005BC	$\frac{1}{2}$ *	1 $\frac{5}{8}$	$\frac{1}{8}$
477-007BC	$\frac{3}{4}$	1 $\frac{11}{16}$	$\frac{1}{8}$
477-010BC	1	2 $\frac{1}{16}$	$\frac{1}{16}$

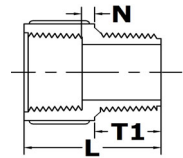
*1/2" nested couplings do not meet ASTM Standards for Sch 40 fittings and are not NSF listed.



Deep Socket Coupling

Part No	Size (in)	L	N
482-015	1½ (2.169*)	4 7/16	1/8
482-020	2 (2.389*)	4 15/16	1/8
482-025	2½ (3.385*)	7	1/4
482-030	3 (3.625*)	7 9/16	1/4
482-040	4 (3.625*)	7 5/8	1/4

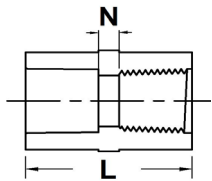
*Socket depth, each side.



Riser Extender

Part No	Size (in)	L	N	T1
434-005	½	1 11/16	1/8	3/4
434-007	¾	1 9/16	1/8	5/8
434-008	¾*	2 1/4	7/8	9/16
434-020	2	2 5/8	3/16	1 1/16

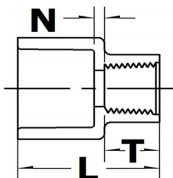
*2 5/16 Long



Female Adapter

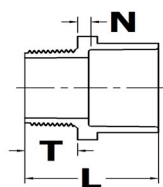
Part No	Size (in)	L	N
435-005	½	1 3/4	5/16
435-007	¾	1 3/4	5/16
435-010	1	2 3/16	1/8
435-012	1¼	2 1/4	1/16
435-015	1½	2 1/4	1/16
435-020	2	2 7/16	1/16
435-025	2½	3 3/4	3/16
435-030	3	3 3/4	3/16
435-040	4	4	3/16
435-050	5	5 1/8	1/4
435-060	6	5 3/4	1/4
435-080	8	6 15/16	1/4

Body diameter measured across hex flats (if applicable)



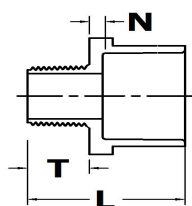
Reducing Female Adapter

Part No	Size (in)	L	N	T
435-074	½ x ¾	1 11/16	1/16	13/16
435-101	¾ x ½	1 9/16	1/8	11/16
435-102	¾ x 1	1 3/4	1/16	1
435-131	1 x ¾	1 7/8	0	7/8
435-211	1 x 1½	2 3/16	3/16	1



Male Adapter

Part No	Size (in)	L	N	T
436-005	½	1 9/16	1/8	5/8
436-007	¾	1 9/16	3/16	5/8
436-010	1	2	3/16	13/16
436-012	1¼	2 1/2	1/4	1
436-015	1½	2 1/2	3/16	1
436-020	2	2 11/16	1/4	1 1/16
436-025	2½	3 7/8	5/16	1 9/16
436-030	3	3 15/16	5/16	1 5/8
436-040	4	4 1/16	5/16	1 3/4
436-050	5	5 3/16	3/8	1 13/16
436-060	6	5 7/8	7/16	1 15/16
436-080	8	7 1/8	7/16	2 1/8

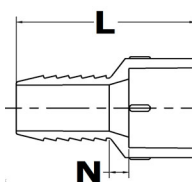


Reducing Male Adapter

Part No	Size (in)	L	N	T
436-073	½ x ¾	1 1/2	1/8	3/4
436-074	½ x ¾	1 3/4	1/8	3/4
436-101	¾ x 1	1 11/16	1/8	13/16
436-102	¾ x 1	1 13/16	3/16	5/8
436-131	1 x ¾	2 5/16	3/16	13/16
436-132	1 x 1¼	2 7/16	3/16	1
436-133	1 x 1½	2 9/16	3/16	1
436-168	1¼ x 1	2	3/16	13/16
436-169	1¼ x 1½	2 5/16	3/16	3/4
436-212	1½ x 1¼	2 1/2	3/16	1
436-213	1½ x 2	2 5/8	3/16	1 1/16
436-251	2 x 1½	2 9/16	3/16	1 1/16
436-252	2 x 2½	3 5/16	1/4	1 1/16
436-253	2 x 3	3 5/16	5/16	1
436-293	2½ x 3	3 7/8	1/4	1 9/16
436-341	3 x 4	3 15/16	5/16	1 5/8

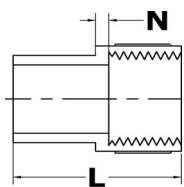
Hex outside diameter measured across hex flats

Body diameter includes body hex (if applicable)



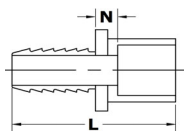
Adapter

Part No	Size (in)	L	N
474-007	¾	2 9/16	1/4
474-010	1	2 11/16	1/4
474-015	1½	3 7/16	3/8
474-020	2	3 5/16	1/4



Fitting Adapter

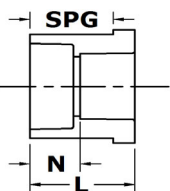
Part No	Size (in)	L	N
478-010	1	2 1/4	3/16
478-012	1¼	2 1/2	3/16
478-015	1½	2 5/16	3/16
478-020	2	2 9/16	3/16



Insert Adapter

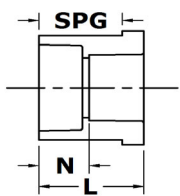
Part No	Size (in)	L	N
460-007	¼ x ¾ SP (½ Slip)	2 9/16	1/4
460-010	1 x 1 SP (¾ Slip)	2 11/16	3/8
460-015	1½ x 1½ SP	3 3/8	3/8

ASTM D 2609 - Plastic Insert Fitting for Polyethylene (PE) pipe



Reducer Bushing

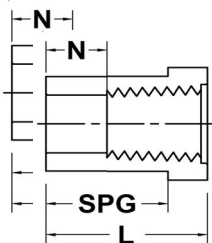
Part No	Size (in)	L	N	SPG
437-073	½ x ¾	1 3/16	7/16	7/8
437-101	¾ x 1½	1 1/16	1/4	13/16
437-130	1 x ½	1 1/4	1/2	1
437-131	1 x ¾	1 1/4	7/16	1
437-166	1¼ x ½	1 9/16	13/16	1 1/4
437-167	1¼ x ¾	1 1/2	3/4	1 3/16
437-168	1¼ x 1	1 1/2	7/16	1 3/16
437-209	1½ x ½	1 5/8	7/8	1 5/16
437-210	1½ x ¾	1 5/8	13/16	1 5/16
437-211	1½ x 1	1 11/16	11/16	1 5/16
437-212	1½ x 1¼	1 9/16	3/8	1 1/4
437-247	2 x ½	1 11/16	15/16	1 3/8
437-248	2 x ¾	1 11/16	7/8	1 3/8
437-249	2 x 1	1 5/8	9/16	1 5/16
437-250	2 x 1¼	1 11/16	7/16	1 3/8
437-251	2 x 1½	1 11/16	3/8	1 3/8
437-287	2½ x ½	2 5/16	1 9/16	2
437-288	2½ x ¾	2 5/16	5/16	2
437-289	2½ x 1	2 5/16	1 5/16	2
437-290	2½ x 1¼	2 1/4	1	2
437-291	2½ x 1½	2 5/16	1	2
437-292	2½ x 2	2 1/4	7/8	1 15/16
437-334	3 x ¾	2 7/16	1/4	2
437-335	3 x 1	2 3/8	1 7/16	2
437-336	3 x 1¼	2 7/16	1 1/4	2 1/16
437-337	3 x 1½	2 3/8	1 1/8	2
437-338	3 x 2	2 3/8	1	2
437-339	3 x 2½	2 3/8	3/8	2



Reducer Bushing (con't)

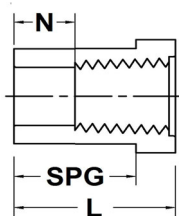
Part No	Size (in)	L	N	SPG
437-420	4 x 2	2 3/8	1	2
437-421	4 x 2½	2 7/16	9/16	2 1/16
437-422	4 x 3	2 3/8	3/8	2
437-488	5 x 3	3 5/16	1 1/4	3 1/16
437-490	5 x 4	3 1/4	1 1/4	3
437-528	6 x 2	4	2 11/16	3 1/2
437-529*	6 x 2½	4 7/16	2 7/16	3 1/2
437-530	6 x 3	4 1/16	2 1/16	3 1/2
437-532	6 x 4	4	2	3 1/2
437-534	6 x 5	3 13/16	13/16	3 1/2
437-582	8 x 4	5 1/4	3 1/4	4 1/2
437-585	8 x 6	5 1/4	1 3/4	4 1/2
437-623	10 x 3	6 3/8	4 3/8	5 1/16
437-624	10 x 4	6 3/8	4 1/3	5 1/16
437-626	10 x 6	5 7/16	2 7/16	5 1/16
437-628	10 x 8	5 7/16	1 3/8	5 1/16
437-661	12 x 3	7 3/8	5 3/8	6 1/16
437-664	12 x 4	7 5/8	5 5/8	6 1/16
437-666	12 x 6	7 11/16	4 1/8	6 1/16
437-668	12 x 8	6 7/16	2 3/8	6 1/16
437-670	12 x 10	6 1/2	1 7/16	6 1/16

Outside diameter taken across hex flats



Reducer Bushing

Part No	Size (in)	L	N	SPG
438-071	½ x ⅝	1 3/16	3/4	7/8
438-072	½ x ¼	1 3/16	1/2	7/8
438-073	½ x ⅜	1 1/4	5/8	7/8
438-098	¾ x ¼	1 1/8	1/2	13/16
438-101	¾ x ½	1 1/16	1/4	13/16
438-130	1 x ½	1 1/4	1/2	1
438-131	1 x ¾	1 1/4	9/16	1
438-166	1¼ x ½	1 9/16	1/2	1 1/4
438-167	1¼ x ¾	1 9/16	13/16	1 1/4
438-168	1¼ x 1	1 9/16	9/16	1 1/4
438-209	1½ x ½	1 9/16	7/8	1 1/4
438-210	1½ x ¾	1 9/16	7/8	1 1/4
438-211	1½ x 1	1 9/16	11/16	1 1/4
438-212	1½ x 1¼	1 5/8	1/4	1 5/16
438-247	2 x ½	1 11/16	15/16	1 7/16
438-248	2 x ¾	1 11/16	1	1 3/8
438-249	2 x 1	1 3/4	5/8	1 3/8
438-250	2 x 1¼	1 11/16	5/16	1 3/8
438-251	2 x 1½	1 11/16	3/4	1 1/3
438-288*	2½ x ¾	2 5/8	1 15/16	2

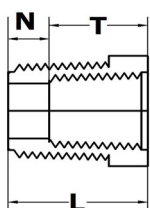


Reducer Bushing (con't)

Part No	Size (in)	L	N	SPG
438-289	2½ x 1	2 5/16	1 3/16	2
438-290	2½ x 1¼	2 1/4	15/16	2
438-291	2½ x 1½	2 5/16	1	2
438-292	2½ x 2	2 5/16	13/16	2
438-335	3 x 1	2 3/8	1 7/16	2
438-336	3 x 1¼	2 1/2	1 9/16	2 1/8
438-337	3 x 1½	2 3/8	1 1/2	2
438-338	3 x 2	2 3/8	1 3/8	2
438-339	3 x 2½	2 3/8	7/8	2
438-420	4 x 2	2 7/16	1 7/16	2
438-421	4 x 2½	2 7/16	1 1/8	2 1/16
438-422	4 x 3	2 3/8	1	2
438-490	5 x 4	3 3/8	1 5/8	3
438-528*	6 x 2	4 7/16	3 1/2	3 9/16
438-532	6 x 4	3 7/8	2 3/16	3 1/2

*Fabricated part

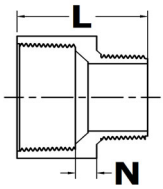
Hex outside diameter taken across hex flats



Threaded Reducer Bushing

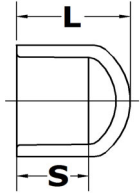
Part No	Size (in)	L	T	N
439-005	½	7/8	11/16	1/4
439-052	¾ x ¼	1 1/8	11/16	7/16
439-072	½ x ¼	1 1/8	5/8	1/2
439-073	½ x ¾	1 1/8	11/16	1/2
439-098	¾ x ¼	1 1/8	11/16	7/16
439-099	¾ x ¾	1 1/8	5/8	1/2
439-101	¾ x ½	1	3/4	1/4
439-130	1 x ½	1 1/16	3/4	5/16
439-131	1 x ¾	1 1/8	3/4	3/8
439-166	1¼ x ½	1 5/16	3/4	1/2
439-167	1¼ x ¾	1 5/16	1/2	13/16
439-168	1¼ x 1	1 5/16	1	5/16
439-209	1½ x ½	1 3/8	3/4	5/8
439-210	1½ x ¾	1 7/16	13/16	5/8
439-211	1½ x 1	1 7/16	1 1/8	5/16
439-212	1½ x 1¼	1 7/16	1	7/16
439-249	2 x 1	1 7/16	1	7/16
439-250	2 x 1¼	1 7/16	1	7/16
439-251	2 x 1½	1 1/2	1	1/2
439-292	2½ x 2	1 13/16	1 1/16	3/4
439-338	3 x 2	2 1/16	1 1/16	1

Outside diameter taken across hex flats (if applicable)



Increaser Adapter

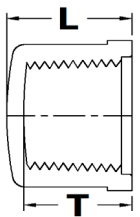
Part No	Size (in)	L	N
439-198	1½ x 2	2 5/8	5/8



Cap

Part No	Size (in)	L	S*
447-005	½	1 3/16	3/4
447-007	¾	1 5/16	13/16
447-010	1	1 3/4	1 1/8
447-012	1¼	1 3/4	1 1/4
447-015	1½	2	1 5/16
447-020	2	2 3/16	1 3/8
447-025	2 ½	3 1/16	2 1/16
447-030	3	3 3/16	2 3/16
447-040	4	3 1/2	2 1/4
447-050	5	4 7/8	3 5/16
447-060	6	5 3/8	3 3/8
447-080	8	6 11/16	4 1/2
447-100	10	8 1/2	5 9/16
447-120	12	9 5/8	6 5/8

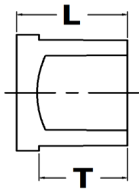
*S dimension is a measurement of two blended radii



Cap

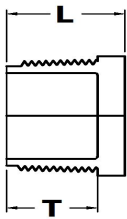
Part No	Size (in)	L	T
448-005	½	1 1/16	3/4
448-007	¾	1 1/8	13/16
448-010	1	1 1/4	1
448-012	1¼	1 1/2	1 5/16
448-015	1½	1 9/16	1 1/16
448-020	2	1 3/4	1 7/16
448-025	2 ½	2 9/16	2 1/8
448-030	3	3 1/8	2
448-040	4	3 1/4	2 3/16

Hex outside diameter measured across hex flats (if applicable)



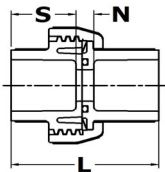
Plug			
Part No	Size (in)	L	SPG
449-003	$\frac{3}{8}$	1	$\frac{3}{4}$
449-005	$\frac{1}{2}$	1	$\frac{3}{4}$
449-007	$\frac{3}{4}$	1 $\frac{1}{16}$	$\frac{13}{16}$
449-010	1	1 $\frac{1}{4}$	1
449-012	$1\frac{1}{4}$	1 $\frac{9}{16}$	1 $\frac{1}{4}$
449-015	$1\frac{1}{2}$	1 $\frac{5}{8}$	1 $\frac{5}{16}$
449-020	2	1 $\frac{11}{16}$	1 $\frac{3}{8}$
449-025	$2\frac{1}{2}$	2 $\frac{3}{8}$	2
449-030	3	2 $\frac{3}{8}$	2
449-040	4	2 $\frac{3}{8}$	2

Hex outside diameter measured across hex flats (if applicable)

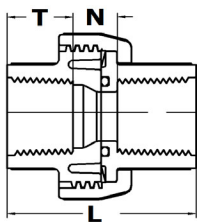


Plug			
Part No	Size (in)	L	T
450-005	$\frac{1}{2}$	1	$\frac{3}{4}$
450-007	$\frac{3}{4}$	1 $\frac{1}{16}$	$\frac{3}{4}$
450-010	1	1 $\frac{1}{8}$	$\frac{13}{16}$
450-012*	$1\frac{1}{4}$	1 $\frac{1}{4}$	$\frac{13}{16}$
450-015	$1\frac{1}{2}$	1 $\frac{3}{8}$	1
450-020	2	1 $\frac{3}{8}$	1 $\frac{1}{16}$
450-025	$2\frac{1}{2}$	1 $\frac{15}{16}$	1 $\frac{9}{16}$
450-030	3	2	1 $\frac{11}{16}$
450-040	4	2 $\frac{1}{8}$	1 $\frac{3}{4}$

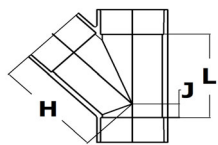
Hex outside diameter measured across hex flats



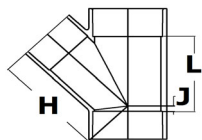
Union (O-Ring Type)				
Part No	Size (in)	L	N	S
457-005	$\frac{1}{2}$	1 $\frac{3}{4}$	$\frac{1}{4}$	$\frac{3}{4}$
457-007	$\frac{3}{4}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{13}{16}$
457-010	1	2 $\frac{3}{8}$	$\frac{1}{4}$	1 $\frac{1}{16}$
457-012	$1\frac{1}{4}$	2 $\frac{13}{16}$	$\frac{3}{8}$	1 $\frac{1}{4}$
457-015	$1\frac{1}{2}$	3	$\frac{3}{8}$	1 $\frac{5}{16}$
457-020	2	3 $\frac{1}{8}$	$\frac{3}{8}$	1 $\frac{3}{8}$
457-030	3	4 $\frac{3}{8}$	$\frac{7}{16}$	2



Union (O-Ring Type)				
Part No	Size (in)	L	N	T
458-005	$\frac{1}{2}$	1 $\frac{3}{4}$	$\frac{1}{4}$	$\frac{3}{4}$
458-007	$\frac{3}{4}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{13}{16}$
458-010	1	2 $\frac{7}{16}$	$\frac{5}{16}$	1 $\frac{1}{16}$
458-012	$1\frac{1}{4}$	2 $\frac{13}{16}$	$\frac{5}{8}$	1 $\frac{1}{8}$
458-015	$1\frac{1}{2}$	3	$\frac{13}{16}$	1 $\frac{1}{16}$
458-020	2	3 $\frac{1}{8}$	$\frac{13}{16}$	1 $\frac{3}{16}$
458-030	3	4	1 $\frac{1}{8}$	1 $\frac{7}{16}$
458-040	4	4 $\frac{5}{8}$	1 $\frac{5}{8}$	1 $\frac{1}{2}$



WYE				
Part No	Size (in)	L	J	H
475-015	1½	3 1/16	1/2	3 7/8
475-020	2	3 25/32	19/32	4 9/16
475-030	3	5 23/32	31/32	6 21/32
475-040	4	6 3/4	1 1/8	5 7/8
475-060	6	9 15/32	31/32	11 3/32
475-080	8	13 11/32	2 1/16	15 1/4



Reducing WYE				
Part No	Size (in)	L	J	H
475-209	1½ X ½	3 1/16	1/2	3 7/16
475-210	1½ X ¾	3 1/16	1/2	3 13/32
475-211	1½ x 1	3 1/16	1/2	3 7/32
475-212	1½ x 1¼	3 1/16	1/2	2 15/16
475-247	2 x 1/2	3 25/32	19/32	4 1/32
475-248	2 x ¾	3 25/32	19/32	4 3/32
475-249	2 x 1	3 25/32	19/32	3 7/8
475-250	2 x 1¼	3 25/32	19/32	3 5/8
475-251	2 x 1½	3 25/32	19/32	3 9/16
475-334	3 x ¾	5 3/8	¾	6 3/32
475-335	3 x 1	5 3/8	¾	5 27/32
475-336	3 x 1¼	5 3/8	¾	5 11/16
475-337	3 x 1½	5 3/8	¾	5 19/32
475-338	3 x 2	5 3/8	¾	5 17/32
475-339	3 x 2½	5 3/8	¾	4 29/32
475-420	4 x 2	6 ¾	1 1/8	6 29/32
475-421	4 x 2½	6 ¾	1 1/8	6 7/16
475-422	4 x 4 x 3	6 ¾	¾	5 7/16
475-528	6 x 2	9 17/32	1 13/32	10 9/32
475-529	6 x 2½	9 17/32	1 13/32	10 1/32
475-530	6 x 3	9 17/32	1 13/32	9 21/32
475-532	6X4	6 23/32	0	7 1/16
475-582	8X4	8	¾	9 17/32

150 psi working pressure