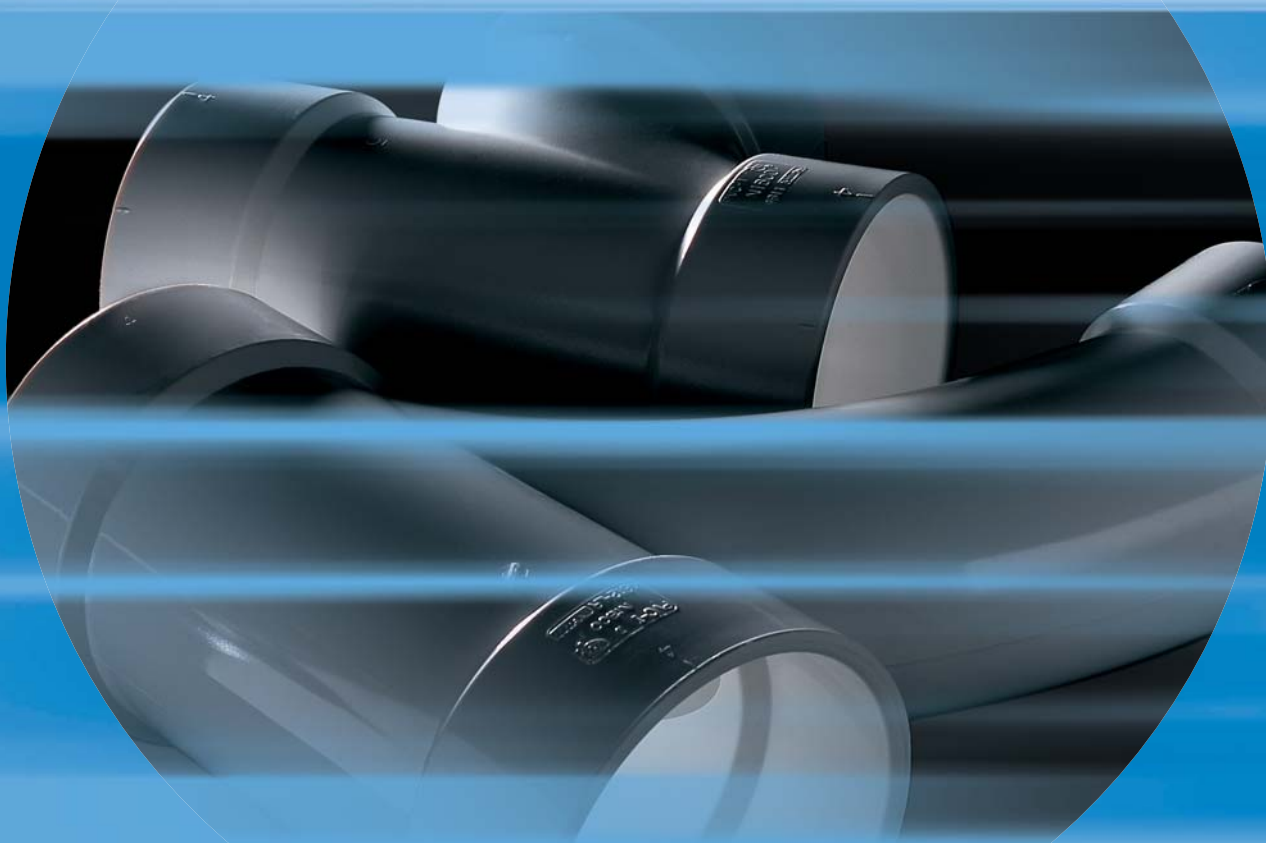


NIBCO®

AHEAD OF THE FLOW®



Plastic Fittings

Business-to-Business Solutions

Look to NIBCO for technology leadership.

The velocity with which e-business evolves demands that new products and services be continuously developed and introduced to keep our customers at the center of our business efforts. NIBCO provides an entire suite of business-to-business solutions that is changing the way we interact with customers.



NIBCOpartner.comsm is an exclusive set of secure web applications that allow quick access to customer-specific information and online order processing. This self-service approach gives you 24/7 access to your order status putting you in total control of your business.

Real time information includes:

- Online order entry
- Viewable invoices & reports
- Inventory availability
- Current price checks
- Order status
- Online library of price sheets, catalogs & submittals



Electronic Data Interchange (EDI) makes it possible to trade business documents at the speed of light. This technology cuts the cost of each transaction by eliminating the manual labor and paperwork involved in traditional order taking. This amounts to cost-savings, increased accuracy and better use of resources.

With EDI, you can trade:

- Purchase orders
- PO Acknowledgements
- Invoices
- Product activity data
- Advanced ship notices
- Remittance advice



Vendor Managed Inventory (VMI), a sophisticated service for automated inventory management, reduces your overhead by transferring inventory management, order entry and forecasting to NIBCO. This is an on-going, interactive partnership with NIBCO.

Through automation, VMI brings results:

- Improves customer service
- Optimum inventory efficiencies
- Better forecasting
- Cuts transaction costs
- Peace of mind
- Relief from day-to-day management





Visit our website for the most current information.

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Material Selection

Thermoplastic and Elastomers

ABS

(Acrylonitrile-butadiene-styrene) Class 3-2-2-2-2, conforming to ASTM D 3965, is a time proven material. The smooth inner surface and superior resistance to deposit formation makes ABS drain, waste and vent material ideal for residential and commercial sanitary systems. The residential DWV system can be exposed in service to a wide temperature span. ABS-DWV has proven satisfactory for use from -40°F to 180°F. These temperature variations can occur due to ambient temperature fluctuations or the discharge of hot liquids into the system. ABS-DWV is very resistant to a wide variety of materials ranging from sewage to commercial household chemical formulations. ABS-DWV is joined by solvent cementing or threading and can easily be connected to steel, copper, or cast iron through the use of transition fittings.

PVC

(Polyvinyl Chloride) conforming to ASTM D 1784 Class 12454, formerly designated Type 1, Grade 1. PVC is the most frequently specified of all thermoplastic materials. It has been used successfully for over 30 years in such areas as chemical processing, industrial plating, chilled water distribution, deionized water lines, chemical drainage, and irrigation systems. PVC is characterized by high physical properties and resistance to corrosion and chemical attack by acids, alkalies, salt solutions and many other chemicals. It is attacked, however, by polar solvents such as ketones, some chlorinated hydrocarbons, and aromatics. The maximum service temperature of PVC is 140°F. With a design stress of 2,000 psi, PVC has the highest long-term hydrostatic strength at 73°F of any of the major thermoplastics being used for piping systems. PVC is joined by solvent cementing, threading, or flanging.

CPVC

(Chlorinated Polyvinyl Chloride) Class 23447, formerly designated Type IV, Grade 1 conforming to ASTM D 1784, has physical properties at 73°F similar to those of PVC and its chemical resistance is similar to or generally better than that of PVC. CPVC, with a design stress of 2000 psi and maximum service temperature of 210°F, has, over a period of about 30 years, proven to be an excellent material for hot corrosive liquids, hot and cold-water distribution, and similar applications above the temperature range of PVC. CPVC is joined by solvent cementing, threading, or flanging.

PTFE

PTFE (Polytetrafluoroethylene) has outstanding resistance to chemical attack by most chemicals and solvents. PTFE has a temperature rating of -200°F to 500°F. PTFE, a self-lubricating compound, is used as a seat material in NIBCO/Chemtrol® ball valves.

FPM

FPM (Fluoroelastomers or Fluorocarbons) are inherently compatible with a broad spectrum of chemicals. Because of this extensive chemical compatibility, which spans considerable concentration and temperature ranges, fluorocarbons have gained wide acceptance as a material of construction for butterfly valve "O"-rings and seats. Fluorocarbons can be used in most applications involving mineral acids (with the exception of HCl), salt solutions, chlorinated hydrocarbons, and petroleum oils.

EPDM

EPDM is a terpolymer elastomer made from ethylene, propylene and diene monomer. EPDM has good abrasion and tear resistance and offers excellent chemical resistance to a variety of acids and alkalines. It is susceptible to attack by hydrocarbons and is not recommended for applications involving petroleum oils, strong acids, or strong alkalines.

Fluorel® is a registered trademark of 3M Company

Material Selection

Plastic Piping Standards

THERMOPLASTIC PIPING MATERIALS

ASTM Test Methods	Properties	Material		
		ABS 3-2-2-2-2	PVC 12454	CPVC 23447
General D 792	Specific Gravity	1.00 - 1.08	1.38	1.55
D 570	Water Absorption % 24 Hrs. @ 73°F	0.3	0.05	0.05
Mechanical D 638	Tensile Strength psi @ 73°F	4,500	7,000	7,000
D 638	Modulus of Elasticity in Tension psi @ 73°F x 10 ⁵	2.4	4.0	3.6
D 790	Flexural Strength psi	10,000	14,500	15,600
D 256	Izod Impact Strength @ 73°F (Notched)	4.0	0.65	1.5
Thermal D 696	Coefficient of Thermal Expansion in/in/°F x 10 ⁻⁵	5.0	3.0	3.8
C 177	Thermal Conductivity BTU/HR/Sq. Ft./°F/in	1.35	1.2	0.95
D 648	Heat Distortion Temp. °F @ 66 psi	219	165	238
D 648	Heat Distortion Temp. °F @ 264 psi	180	158	212
	Resistance to Heat °F at Continuous Drainage	180	140	210
Flammability D 2863	Limiting Oxygen Index (%)	19	43	60
E 84	Flame Spread	150-250	15-20	15
	Underwriter's Lab Rating (Sub. 94)	94HB	94V-0	94V-0

Plastic Piping Standards

Many commercial, industrial, and governmental standards or specifications are available to assist the design engineer in specifying plastic piping systems. Standards most frequently specified in plastic piping systems are American Society for Testing and Materials (ASTM) Standards. Below is a list and description of those standards most typically applied to industrial plastic piping.

ASTM Standard D 1784

This standard covers PVC and CPVC compounds used in the manufacture of plastic pipe, valves, and fittings. It provides a means for selecting and identifying compounds on the basis of a number of physical and chemical criteria. Conformance to a particular material classification in this standard requires meeting a number of minimum physical and chemical properties.

ASTM Standards D 2665 and D 3311

These standards provide the material and test requirements as well as the fitting geometries for PVC-DWV (drain, waste and vent) fittings. These fittings are joined by threading or solvent cementing.

ASTM Standard D 2466

This standard covers Schedule 40 PVC threaded and socket pressure fittings. Included in the standard are thread and socket specifications, lay length, wall thickness, burst, material, quality, and identification requirements.

ASTM Standard D 2467

This standard covers Schedule 80 PVC threaded and socket fittings. Included in the standard are thread and socket specifications, lay length, wall thickness, burst, material, quality, and identification requirements.

ASTM Standard D 2846

This standard covers plastic hot and cold-water distribution system components made in one standard dimension ratio. This includes a series of CTS (copper tube size) CPVC fittings meant for use with SDR 11 tube and plastic-to-metal transition fittings.

ASTM Standard D 3965

This standard covers ABS compounds used in the manufacture of pipe and fittings. It identifies the chemical and physical properties of several ABS compositions based upon impact strength, deflection temperature under load, and tensile stress at yield point. These properties identify the polymers or blends of polymers that make up this rigid thermoplastic material.

ASTM Standards D 2661 and D 3311

These standards cover ABS-DWV (drain, waste and vent) by material and by physical configuration. These products are threaded or joined by solvent cement.

Material Selection

Plastic Piping Standards and Chemical Resistance

ASTM Standard F 1498

This standard covers dimensions, tolerances, and gaging of tapered pipe threads used on plastic ends of pipe and fittings.

ASTM Standard F 1970

This standard covers fittings and appurtenances intended to be used in PVC or CPVC plastic piping, or as a transition from such systems to metal systems. These products, such as unions, flanges, or valves, are not included in the scope of other ASTM specifications.

ASME B1.20.1 (American Society of Mechanical Engineers)

This specification details the dimensions, tolerances, and gaging of tapered pipe threads used on metallic ends of pipe and fittings, plus machined plastic threaded ends.

ANSI/NSF Standard 14 (NSF International, formerly National Sanitation Foundation)

This standard establishes the minimum physical and performance requirements for plastic piping system components and related materials. It also provides a basis for certification of products to consensus standards, or other physical and performance requirements where no consensus standard exists. It requires adherence to appropriate ASTM Standards and specifies minimum quality control programs. To comply with this standard the manufacturer must allow periodic testing of product and auditing of procedures by a third-party agency.

ANSI/NSF Standard 61

At the request of the U.S. Environmental Protection Agency (EPA), a consortium led by NSF International developed this standard. It was developed to establish minimum requirements for the control of potential adverse human health effects from products which contact drinking water. This Standard complements the performance requirements that are contained within ASTM product standards. NIBCO PVC & CPVC fitting products intended for potable water applications are tested and certified by a third-party agency for compliance to ANSI/NSF Standard 61.

CSA (Canadian Standards Association)

CSA tests piping products against Canadian standards. These standards require that products meet certain criteria such as dimensions, strength, and compatibility with potable water. Most products sold in Canada require the CSA listing.

IAPMO (International Association of Plumbing and Mechanical Officials)

IAPMO is responsible for the Uniform Plumbing Code (UPC). Products listed by IAPMO are tested by third-party organizations and/or meet PS (Product Standards) or IS (Installation Standards) which are written by IAPMO. Listed products will contain the UPC or IAPMO-T (1½" sizes for mobile home and recreational vehicle (MHRV) use) mark.

Chemical Resistance

Thermoplastics exhibit a 'GO' or 'NO-GO' type of resistance when contacted by aggressive chemicals. That is, they either resist attack completely or they deteriorate rapidly, in which case, the mechanism of attack is either solvation or reaction with the base molecule. Solvation, which is the most common form of attack, involves penetration of a chemical into the plastic causing softening, swelling, and loss of physical properties. Reaction with the base molecule involves the breakage of the molecular chain, crosslinking, or substitution reactions.

The NIBCO *Chemical Resistance Guide* contains specific chemical resistance information for the various plastic and elastomeric materials used in the NIBCO product line. When interpreting the information presented in this brochure it is important to note that it is based only on unstressed immersion testing at the temperatures noted, using pure chemicals or saturated solutions, except where otherwise specified. It is unwise to specify a plastic material without chemical resistance information relative to the specific environment of the intended application. Therefore, in situations where the aggressive environment involves a mixture of chemicals, the Chemical Resistance Guide can be used to investigate the effects of individual chemicals; however, because of possible synergisms, the suitability of a particular plastic for handling a chemical mixture should be verified. Also, since chemicals are more aggressive at higher temperatures and concentrations, chemical resistance information should not be extrapolated to higher temperatures and concentrations. Conversely, chemicals are generally less aggressive at lower temperatures and concentrations; therefore, extrapolation of chemical resistance information to lower temperatures and concentrations is generally acceptable.

When chemical resistance information is not available or a first-of-a-kind process is involved, data may be obtained through immersion testing. ASTM D 543 provides a method for conducting such tests, and the chemical, as well as, the temperature used in this test should be identical to the anticipated process condition.

Key to NIBCO Figure Numbers

DWV Fittings 1 2 3 4 - 5

1 2 TYPE OF MATERIALS

48 = PVC
58 = ABS

3 4 TYPE OF FITTING & DESCRIPTION

01 = Coupling
03 = Female Adapter
04 = Male Adapter
05 = Soil Pipe Adapter
06 = 45° Ell
07 = 90° Ell
08 = 22½° Ell
10 = Wye
11 = Tee
12 = Long Turn TY
14 = Test Tee
16 = Cleanout
17 = Cap
18 = Plug
19 = Blind Flange
26 = Plug (Spg)
27 = Cap (FIPT)
28 = Cross
29 = Nipple
30 = True Y
34 = Double Y
35 = Double Tee
36 = Double Long Turn TY

37 = Double Ell
48 = Offset Closet Flange
51 = Closet Flange
53 = Closet Flange-Flush
55 = Closet Flange w/Knockout Test Plug
60 = 60° Ell
61 = 90° Ell w/Heel Inlet
63-73 = Various Stack Fittings
76 = Return Bend w/CO Hub x SJ
77 = Return Bend Hub x SJ
78 = Return Bend w/CO Hub x Hub
79 = Return Bend Hub x Hub
80 = P-Trap w/CO Hub x SJ
81 = P-Trap Hub x SJ
84 = P-Trap w/CO Hub x SJ
85 = P-Trap Hub x Hub
91 = Drum Trap
92 = P-Trap w/Union Hub x SJ
95 = P-Trap w/Union Hub x Hub

5 TYPE OF CONNECTIONS

Numerical Suffix
2 = Fitting Connection
3 = Female Connection
4 = Male Connection
7 = Slip Joint Connection
9 = Side Inlet
13 = Female Connection Indicating Hub x FIPT x Hub
14 = Female Connection Indicating Hub x Hub x FIPT
16 = Female Connection Indicating Hub x CO x Hub
17 = Female Connection Indicating FIPT x Hub x Hub
18 = Female Connection Indicating FIPT x FIPT x Hub
19 = Baffle Tee Hub x Hub x Hub

Letter Suffix
A = Adjustable Closet Flange
B = Double Fixture Tee
BAF = Baffle
CL = Water Closet Ell
CLAY = Clay
CO = Cleanout
DC = Dust Cap
DP = Dust Plug
EH = Extra Heavy
EL = Extra Long
F = Flush
FX = Fixture Tee
KO = Knockout
L = Lead & Left
LH = Low Heel
LR = Long Radius

LT = Long Turn
N = No Hub
NS = No Stop
P = Fits Pipe I.D.
R = Right
RP = Repair
S = Stack Upturn
SD = Sewer Drain
ASTM-D2852
SE = Special
TE = Trap El
TPA = Tray Plug Adapter
TY = TY-Seal
V = Vent
XL = Extra Long

Schedule 40 - PVC Plastic Fittings

UNIV. PART NO.	DESCRIPTION	END CONNECTIONS	SIZE KEY		
			STRAIGHT SIZES	REDUCING SIZES	REDUCING SIZES
401	Tee	Slip x Slip x Slip	1/4 002	1/2 x 1/2 x 1/4	072 2 x 1½ x 3/4 238
402	Tee	Slip x Slip x FIPT	3/8 003	1/2 x 1/2 x 3/4	074 2 x 1½ x 1 239
405	Tee	FIPT x FIPT x FIPT	1/2 005	3/4 x 1/2 x 1/2	094 2 x 1/2 x 1½ 241
406	90° Ell	Slip x Slip	3/4 007	3/4 x 1/2 x 3/4	095 2 x 2 x 1/2 247
407	90° Ell	Slip x FIPT	1 010	3/4 x 3/4 x 1/2	101 2 x 2 x 3/4 248
408	90° Ell	FIPT x FIPT	1¼ 012	3/4 x 3/4 x 1	102 2 x 2 x 1 249
409	90° Street Ell	Spg x Slip	1½ 015	1 x 1/2 x 1	122 2 x 2 x 1¼ 250
410	90° Ell	MIPT x Slip	2 020	1 x 3/4 x 1/2	124 2 x 2 x 1½ 251
411	90° Street Ell	Spg x FIPT	2½ 025	1 x 3/4 x 3/4	125 2½ x 2½ x 1/2 287
412	90° Street Ell	MIPT x FIPT	3 030	1 x 3/4 x 1	126 2½ x 2½ x 3/4 288
414	90° Side Outlet Ell	Slip x Slip x FIPT	4 040	1 x 1 x 1/2	130 2½ x 2½ x 1 289
417	45° Ell	Slip x Slip	5 050	1 x 1 x 3/4	131 2½ x 2½ x 1¼ 290
420	Cross	All Slip	6 060	1 x 1 x 1¼	132 2½ x 2½ x 1½ 291
429	Coupling	Slip x Slip		1 x 1 x 1½	133 2½ x 2½ x 2 292
430	Coupling	FIPT x FIPT	8 080	1¼ x 1 x 1/2	156 3 x 3 x 1/2 333
434	Riser Extender	MIPT x FIPT	10 100	1¼ x 1 x 3/4	157 3 x 3 x 3/4 334
435	Female Adapter	Slip x FIPT	12 120	1¼ x 1 x 1	158 3 x 3 x 1 335
436	Male Adapter	MIPT x Slip		1¼ x 1¼ x 1/2	166 3 x 3 x 1¼ 336
437	Bushing	Slip x Slip		1¼ x 1¼ x 3/4	167 3 x 3 x 1½ 337
438	Bushing	Spg x Slip		1¼ x 1¼ x 1	168 3 x 3 x 2 338
439	Thread Bushing	MIPT x FIPT		1½ x 1¼ x 1/2	199 3 x 3 x 4 342
447	Cap	Slip		1½ x 1¼ x 3/4	201 4 x 4 x 3/4 416
448	Thread Cap	FIPT		1½ x 1¼ x 1	202 4 x 4 x 1 417
449	Plug	Spg		1½ x 1½ x 1/2	209 4 x 4 x 1¼ 418
450	Thread Plug	MIPT		1½ x 1½ x 3/4	210 4 x 4 x 1½ 419
475	Wye	All Slip		1½ x 1½ x 1	211 4 x 4 x 2 420
482	Deep Socket Coupling	Slip x Slip		1½ x 1½ x 1¼	212 4 x 4 x 3 422
488	Running Trap	Spg x Spg		1½ x 1½ x 2	213
489	P-Trap	Spg x Spg			

Fitting Terms and Abbreviations

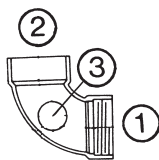
FIPT = Female NPT Thread
Spg = Male End (Spigot)
MIPT = Male NPT Thread
NPSM = Straight Thread for Mechanical Joint
SJ = Slip Joint
Hub = Plastic Socket

Schedule 40 Only
FIPT = Female NPT Thread
MIPT = Male NPT Thread
Slip = Female Socket
Spg = Male End (Spigot)
Ball Valve
S = Socket
T = Threaded

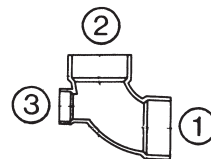
Schedule 80 Only
FIPT = Female NPT Thread
CL = Close
MIPT = Male NPT Thread
Slip = Female Socket
SH = Short
Spg = Male End (Spigot)

CPVC-CTS Only
C = Copper Solder Joint (Transition)
Compression = Transition Fitting
FIPT = Female NPT Thread
MIPT = Male NPT Thread
Slip = Female Socket
Spg = Male End (Spigot)
IPS = Iron Pipe Size
CTS = Copper Tube Size

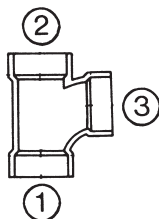
Methods of Designating Inlets of Fittings



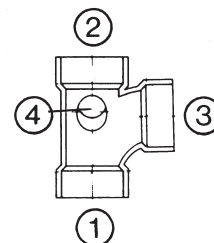
DWV 90° Ell w/Side Inlet



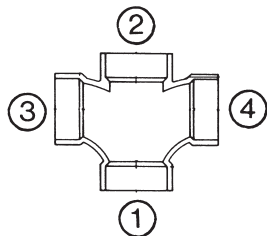
DWV 90° Ell w/High Heel Inlet



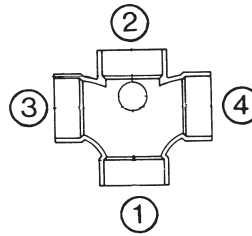
DWV Sanitary Tee



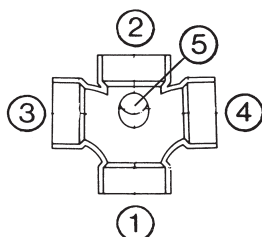
DWV Tee w/90° Right/Left Inlet



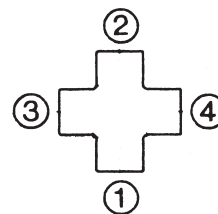
DWV Double Sanitary Tee



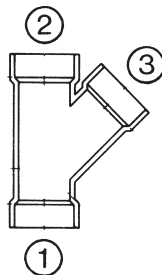
DWV Double Tee w/Two 90° Side Inlets



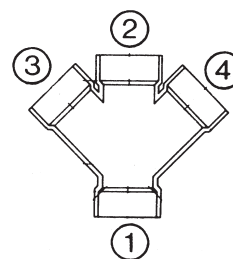
DWV Double Tee w/One 90° Side Inlet



Cross



DWV 45° Y



DWV 45° Double Y

General Note:

The largest opening establishes the basic size of a reducing fitting. The largest opening is named first, except for double branch elbows where both branches are reducing; the outlet is the largest opening and named last in both cases. In designating the openings of reducing fittings, they should be read in the order indicated by the sequence of the numbers 1, 2, 3, 4, 5 and 6. In designating the outlets of side outlet reducing fittings, the side outlet is named last.

ABS & PVC-DWV Fittings

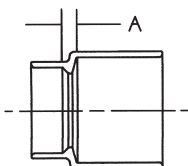
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Bushings	15
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Nipples	24
Plugs	24
Return Bends	25
Tees	25
Traps	28
TY's (Combinations)	30
Wyes	31

ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

ADAPTERS

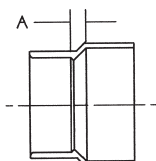
5800 4800



Soil Pipe Adapter (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
2	.200	.301	3/8
3	.500	.708	7/16
4	.834	1.158	1/2

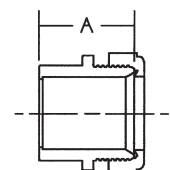
5800-SD 4800-SD



Sewer & Drain Adapter (Hub x Sewer & Drain)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
3 x 4	.362	.502	9/16

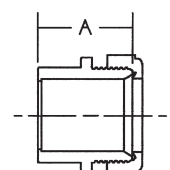
5801-2-7 4801-2-7



Trap Adapter (Spg x SJ)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/4	.085	.102	1 21/32
1 1/2	.094	.120	1 21/32
1 1/2 x 1 1/4	.084	.105	1 21/32
2	.126	.174	1 13/16

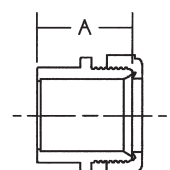
5801-2-7-B



Trap Adapter (Spg x SJ w/Brass Nut)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
* 1 1/2	.166	1 21/32

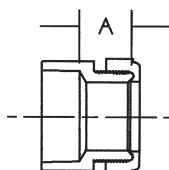
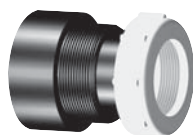
5801-2-7-C 4801-2-7-C



Trap Adapter (Spg x SJ w/Chrome Nut)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2	.123	.149	1 21/32
† 1 1/2 x 1 1/4	.107	.128	1 21/32
* 2 F	.202	N/A	1 13/16

5801-7 4801-7



Trap Adapter (Hub x SJ)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/4	.082	.104	29/32
1 1/2	.091	.112	15/16
1 1/2 x 1 1/4	.087	.115	1 1/16
2	.125	.178	31/32

* Available in ABS only

† Available in PVC only

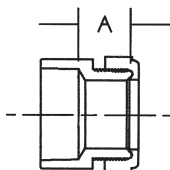
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

ADAPTERS (Continued)

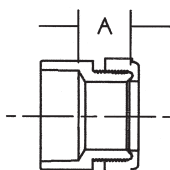
5801-7-B 4801-7-B



Trap Adapter (Hub x SJ w/Brass Nut)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
* 1 ¹ / ₄	.148	N/A	29/32
* 1 ¹ / ₂	.163	N/A	15/16
1 ¹ / ₂ x 1 ¹ / ₄	.153	.181	1 ¹ / ₁₆

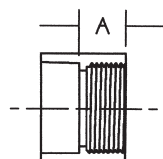
5801-7-C 4801-7-C



Trap Adapter (Hub x SJ w/Chrome Nut)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 ¹ / ₂	.120	.141	15/17
1 ¹ / ₂ x 1 ¹ / ₄	.110	.138	1 ¹ / ₁₆

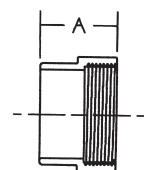
5803 4803



Adapter (Hub x FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 ¹ / ₄	.066	.091	27/32
1 ¹ / ₂	.078	.101	1
2	.096	.135	1
3	.345	.475	1 ¹ / ₂
4	.552	.756	1 ⁵ / ₈
6	1.282	1.815	2 ¹ / ₃₂

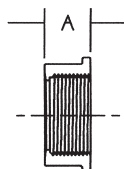
5803-2 4803-2



Adapter (Spg x FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 ¹ / ₄	.051	.066	1 ¹³ / ₃₂
1 ¹ / ₂	.070	.098	1 ²¹ / ₃₂
2	.094	.132	1 ²⁵ / ₃₂
3	.325	.453	2 ²⁹ / ₃₂
4	.548	.727	3 ⁵ / ₁₆
6	1.203	1.689	4 ²⁵ / ₃₂

5803-2-F 4803-2-F



Flush Adapter (Spg x FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 ¹ / ₂ x 1 ¹ / ₄	.041	.055	15/16
2 x 1 ¹ / ₂	.090	.118	1 ¹ / ₁₆
3 x 2	.298	.407	1 ³ / ₄
† 3 x 1 ¹ / ₂	.492	.407	1 ³ / ₄
4 x 3	.492	.674	2

* Available in ABS only

† Available in PVC only

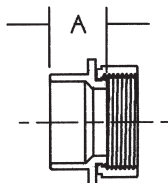
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

ADAPTERS (Continued)

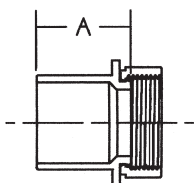
5803-2-SW



Swivel Adapter (Spig x FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
* 1½	.085	1⅞

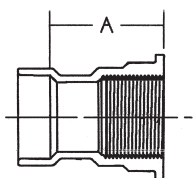
5803-2-SW-EL



Swivel Adapter (Spig x FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
* 1½	.109	1⅞

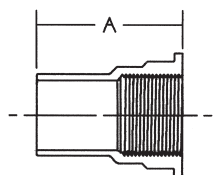
5803-TPA



Tray Plug Adapter (Hub x NPSM Thread)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
* 1½	.168	2⅝

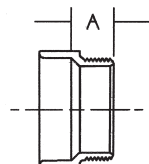
5803-2-TPA



Tray Plug Adapter (Spig x NPSM Thread)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
* 1½	.157	3⅜

5804 4804



Adapter (Hub x MIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1¼	.055	.077	29/32
1½	.060	.081	15/16
1½ x 1¼	.060	.088	1⅞
2	.083	.117	31/32
3	.293	.400	1⅞
4	.484	.695	2⅞

* Available in ABS only

† Available in PVC only

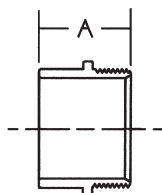
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

ADAPTERS (Continued)

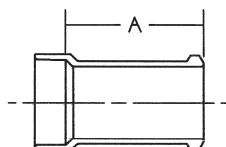
5804-2 4804-2



Adapter (Spg x MIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/4	.058	.075	1 21/32
1 1/2	.063	.089	1 21/32
1 1/2 x 1 1/4	.058	.078	1 21/32
2	.084	.113	1 13/16
3	.282	.385	3 1/2
4	.454	.609	3 7/8

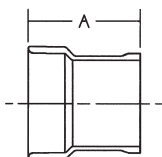
5805 4805



Soil Pipe Adapter (Hub x Spg)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2 x 2	.189	.265	3 1/2
* 1 13/16 x 3	.391	N/A	3 13/16
2	.234	.335	3 13/16
† 2 x 3	.386	.536	3 13/16
3	.533	.744	4 3/16
3 x 4	.722	1.026	4 1/16
4	.853	1.190	4 7/16

5805-N 4805-N

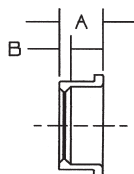


Soil Pipe Adapter (Hub x No Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2 x 2	.083	.111	3/4
2	.119	.163	1 3/4
3	.294	.399	1 15/16
3 x 4	.351	.492	1 29/32
4	.466	.665	1 15/16

BUSHINGS

5801-2-F 4801-2-F



Flush Bushing (Spg x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 1/2 x 1 1/4	.031	.043	15/16	1/4
2 x 1 1/2	.079	.094	1 1/16	3/8
3 x 2	.283	.373	1 3/4	7/8
3 x 1 1/2	.290	.368	1 3/4	1
4 x 3	.411	.526	2	1/2
4 x 2	.506	.683	2	1 1/4
6 x 4	1.167	2.191	3 11/16	1 29/32
† 6 x 3	N/A	1.477	3 9/32	7/32
† 8 x 6	N/A	3.996	4 21/32	1 5/8
† 8 x 4	N/A	4.100	4 21/32	2 7/8

* Available in ABS only

† Available in PVC only

Do not use or test the products in this catalog with compressed air or other gasses.

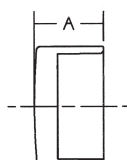
ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

ADAPTERS (Continued)

CAPS

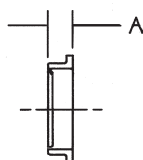
5817 4817



Cap (Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
* 1 1/4	.074	N/A	7/8
1 1/2	.089	.115	7/8
2	.118	.169	3 1/32
3	.317	.469	1 23/32
4	.568	.789	2
6	1.150	3.755	3 1/16
† 8	N/A	4.056	6 3/16

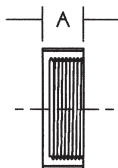
5817-P



Test Cap (Polystyrene)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2	.009	1/4
2	.013	1/4
3	.026	5/16
4	.045	3/8

5827

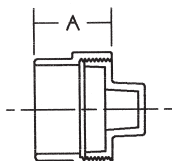


CAP (FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2	.062	29/32
2	.082	15/16
3	.245	1 7/16

CLEANOUTS

5816 4816



Cleanout Adapter (Spg x Cleanout w/Plug)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2	.117	.160	1 21/32
2	.154	.215	1 25/32
3	.486	.679	2 29/32
4	.822	1.094	3 5/16
6	1.825	2.564	4 25/32

* Available in ABS only

† Available in PVC only

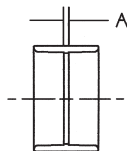
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

COUPLINGS

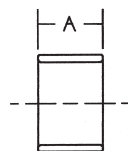
5801 4801



Coupling (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/4	.052	.075	1/8
1 1/2	.065	.090	1/8
1 1/2 x 1 1/4	.072	.100	13/32
2	.084	.119	1/8
2 x 1 1/2	.102	.132	23/32
3	.344	.466	3/16
3 x 2	.285	.397	7/8
3 x 1 1/2	.297	.418	13/32
4	.574	.780	1/4
4 x 3	.569	.784	15/16
4 x 2	.493	.690	13/8
6	1.541	1.541	1/4
† 8	N/A	5.100	1/4
† 10	N/A	8.533	1/2
† 12	N/A	14.490	1/2

5801-RP 4801-RP

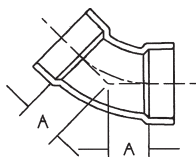


Repair Coupling (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2	.062	.083	1 1/2
2	.086	.115	1 3/4
3	.303	.417	3
4	.510	.711	3 1/2
† 6	N/A	2.050	5 3/4

ELBOWS

5806 4806



45° Ell (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/4	.109	.151	1
1 1/2	.131	.188	1 1/8
2	.205	.281	1 1/2
3	.616	.842	1 3/4
4	1.058	1.515	2 3/16
6	2.875	4.151	3 3/8
† 8	N/A	6.134	2 1/16
† 8 x 6 F	N/A	10.234	2 1/16
† 8 x 4 F	N/A	10.130	2 1/16
10	N/A	19.64	2 5/8
12	N/A	32.12	3 1/8

* Available in ABS only

† Available in PVC only

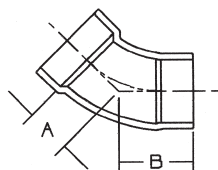
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

ELBOWS (Continued)

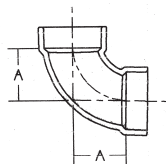
5806-2 4806-2



45° Street Ell (Spig x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 ¹ / ₄	.100	.136	1	1 ³ / ₄
1 ¹ / ₂	.134	.174	1 ¹ / ₈	1 ⁷ / ₈
2	.201	.277	1 ⁷ / ₁₆	2 ¹ / ₄
3	.601	.818	1 ³ / ₄	3 ¹ / ₄
4	1.048	1.464	2 ³ / ₁₆	3 ¹⁵ / ₁₆
6	2.772	3.950	3 ³ / ₈	6 ³ / ₈
† 8	N/A	5.738	2 ¹ / ₁₆	6 ¹ / ₁₆
† 8 x 6 F	N/A	6.500	2 ¹ / ₁₆	5
† 8 x 4 F	N/A	6.200	2 ¹ / ₁₆	3 ³ / ₄

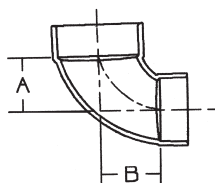
5807 4807



90° Ell (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 ¹ / ₄	.122	.184	1 ⁹ / ₁₆
1 ¹ / ₂	.149	.204	1 ³ / ₄
2	.248	.331	2 ⁵ / ₁₆
3	.724	1.008	3
4	1.278	1.840	3 ⁷ / ₈
6	3.453	4.666	5 ⁵ / ₈
† 8	N/A	8.553	5 ³¹ / ₃₂

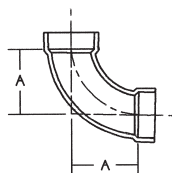
5807-CL 4807-CL



90° Closet Ell (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
4 x 3	1.044	1.448	3	3 ³ / ₈

5807-LT 4807-LT



90° Long Turn Ell (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
* 1 ¹ / ₄	.164	N/A	2 ¹ / ₄
1 ¹ / ₂	.206	.279	2 ¹¹ / ₁₆
2	.291	.409	3 ⁷ / ₃₂
3	.855	1.268	4 ¹ / ₁₆
4	1.542	2.114	4 ¹⁵ / ₁₆

† Available in PVC only

F Fabricated

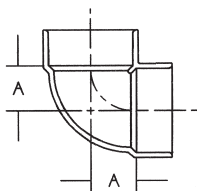
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

ELBOWS (Continued)

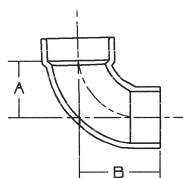
5807-V 4807-V



90° Vent Ell (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
* 1 ¹ / ₄	.106	N/A	1
1 ¹ / ₂	.145	.190	1 ³ / ₁₆
2	.194	.255	1 ¹ / ₂
3	.584	.839	1 ⁷ / ₈
4	1.048	1.547	2 ¹ / ₂
10	N/A	19.410	5 ¹³ / ₁₆
12	N/A	25.940	6 ⁷ / ₈

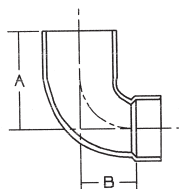
5807-2 4807-2



90° Street Ell (Spg x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 ¹ / ₄	.120	.164	1 ²¹ / ₃₂	2 ⁵ / ₁₆
1 ¹ / ₂	.154	.200	1 ³ / ₄	2 ¹ / ₂
2	.240	.313	2 ⁵ / ₁₆	3 ³ / ₁₆
3	.731	.993	3 ¹ / ₁₆	4 ⁹ / ₁₆
4	1.224	1.731	3 ⁷ / ₈	5 ⁵ / ₈
6	3.319	4.530	5 ⁵ / ₈	8 ⁵ / ₈

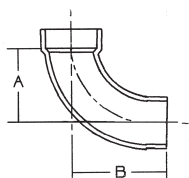
5807-2-CL 4807-2-CL



90° Street Closet Ell (Spg x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
4 x 3	1.137	1.541	6	3 ³ / ₈
4 x 3 w/Cap F	1.182	1.586	6	3 ³ / ₈

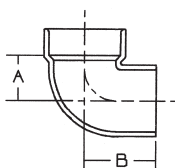
5807-2-LT 4807-2-LT



90° Long Turn Street Ell (Spg x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 ¹ / ₂	.214	.286	2 ³ / ₄	3 ¹ / ₂
2	.293	.407	2 ⁷ / ₃₂	4 ³ / ₃₂
3	.854	1.138	4 ¹ / ₁₆	5 ⁹ / ₁₆
4	1.477	2.021	4 ¹⁵ / ₁₆	6 ¹¹ / ₁₆

5807-2-V 4807-2-V



90° Street Vent Ell (Spg x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 ¹ / ₂	.120	.173	1 ³ / ₁₆	1 ¹⁵ / ₁₆
2	.183	.251	1 ¹ / ₂	2 ³ / ₈
3	.575	.930	1 ⁷ / ₈	3 ³ / ₈

* Available in ABS only

† Available in PVC only

F Fabricated

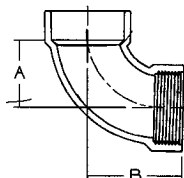
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

ELBOWS (Continued)

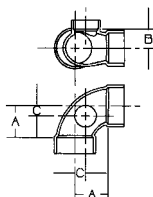
5807-3 4807-3



90° Ell (Hub x FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
3	.801	1.101	3 1/16	4 9/16

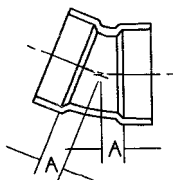
5807-9 4807-9



90° Ell w/Side Inlet (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
3 x 3 x 2	.780	1.127	3	1 21/32	1
3 x 3 x 1 1/2	.764	1.070	3	1 21/32	1

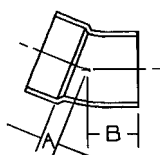
5808 4808



22 1/2° Ell (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2	.099	.131	7/16
2	.156	.195	5/8
3	.448	.637	1 3/16
4	.825	1.132	1
6	2.172	3.060	1 1/2

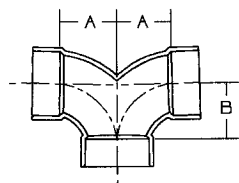
5808-2 4808-2



22 1/2° Street Ell (Spg x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 1/2	.093	.131	7/16	1 3/16
2	.145	.203	5/8	1 1/2
3	.442	.622	1 3/16	2 5/16
4	.768	1.049	1	2 3/4

5837 4837



Double Ell (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 1/2	.225	.311	1 11/16	1 11/16
2	.331	.480	2 5/16	2 5/16
2 x 1 1/2 x 1 1/2	.230	.366	2 1/8	1 7/8
3	1.096	1.448	3 1/16	3 1/16
4	1.876	2.698	3 7/8	3 7/8

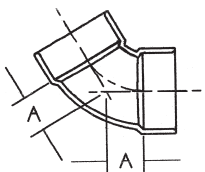
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ABS & PVC-DWV Fittings

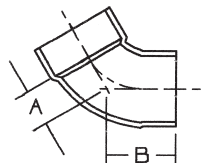
5800 Series - ABS/4800 Series PVC

ELBOWS (Continued)

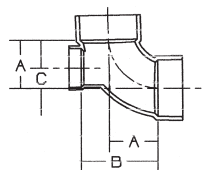
5860 4860



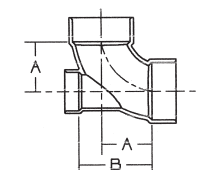
5860-2 4860-2



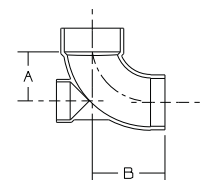
5861 4861



5861-LH 4861-LH



5861-2-LH 4861-2-LH



60° Ell (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/2	.128	.172	1
2	.190	.256	1 5/16
3	.564	.806	1 11/16
4	1.042	1.434	2 1/16

60° Street Ell (Spg x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 1/2	.119	.165	1	1 3/4
2	.182	.250	1 1/4	2 1/8
3	.570	.855	1 11/16	3 3/16
4	1.012	1.266	2 1/16	3 13/16

90° Ell w/High Heel Inlet (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
3 x 3 x 2	.780	1.119	3 1/16	4 3/4	1 1/4
3 x 3 x 1 1/2	.803	1.083	3 1/16	4 7/8	1 1/4

90° Ell w/Low Heel Inlet (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
3 x 3 x 2	.823	1.141	3 1/16	4 7/16
3 x 3 x 1 1/2	.755	1.045	3 1/16	4 3/16
4 x 4 x 2	1.430	1.750	3 1/8	5 7/16

90° Ell w/Low Heel Inlet (Spg x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
3 x 3 x 2	.83	1.089	3 1/16	4 7/16

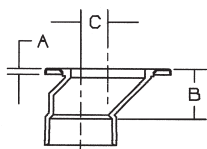
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ABS & PVC-DWV Fittings

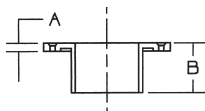
5800 Series - ABS/4800 Series PVC

FLANGES

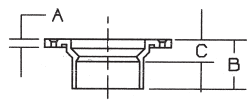
5848-A 4848-A



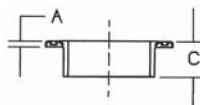
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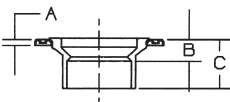
5851 4851



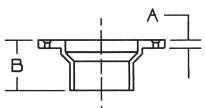
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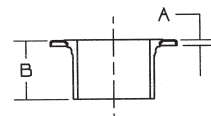
5851-A 4851-A



5851-2 4851-2



5851-2-A 4851-2-A



Offset Adjustable Closet Flange

w/Plastic Coated Steel Flange (Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
4 x 3	.903	1.137	5/16	2 ³ / ₄	1 ¹ / ₂

Closet Flange (Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
4	.466	.672	7/16	2

Reducing Closet Flange (Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
4 x 3	.570	.769	7/16	2 ³ / ₄	1 ¹ / ₄

Adjustable Closet Flange

w/Plastic Coated Steel Flange (Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. C INCHES
4	.665	.777	5/16	2

Reducing Adjustable Closet Flange

w/Plastic Coated Steel Flange (Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
4 x 3	.770	.898	5/16	1 ¹ / ₄	2 ³ / ₄

Closet Flange (Spigot)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
4 x 3	.540	.719	7/16	2 ²⁵ / ₃₂

Adjustable Closet Flange

w/Plastic Coated Steel Flange (Spigot)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
4	.850	1.047	5/16	3 ¹ / ₄
4 x 3	.748	.876	5/16	2 ³ / ₄

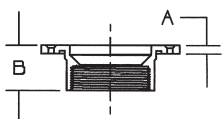
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

FLANGES (Continued)

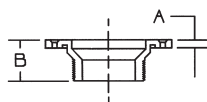
5851-3 4851-3



Closet Flange (FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
4 x 3	.583	.666	7/16	2 ⁵ / ₁₆

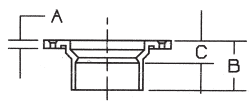
5851-4 4851-4



Closet Flange (MIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
4 x 3	.430	.668	7/16	2 ¹⁵ / ₃₂

5853 4853

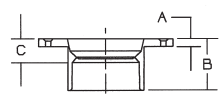


Flush Closet Flange

w/Pipe Stop (Fits Inside 4" DWV Pipe and Over 3" Pipe)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
3 or 4	.570	.762	7/16	2 ³ / ₄	1 ¹ / ₄

5853-KO 4853-KO

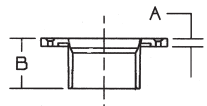


Flush Closet Flange

w/Pipe Stop & Knockout (Fits Inside 4" DWV Pipe and Over 3" Pipe)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
3 or 4	.602	.800	7/16	2 ³ / ₄	1 ¹ / ₄

5853-NS 4853-NS

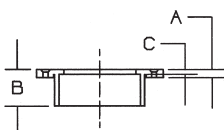


Flush Closet Flange

w/Out Pipe Stop (Fits Inside 4" DWV Pipe and Over 3" Pipe)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
3 or 4	.529	.742	7/16	2 ³ / ₄

5855 4855



Closet Flange w/Knockout Test Plug (Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
4	.585	.795	7/16	2	1/4
4 x 3	.581	.810	5/16	2 ³ / ₄	1 ¹ / ₄

† Available in PVC only

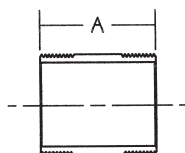
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

NIPPLES

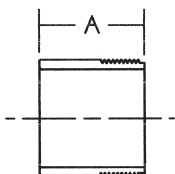
5829



Nipples 3" (MIPT x MIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
* 3	.272	3
* 4	.393	4
* 6	.595	6
* 8	.847	8
* 10	1.092	10
* 12	1.274	12

5829-2

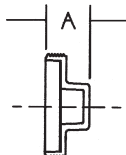
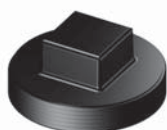


Nipples 3" (MIPT x Plain End)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
* 3	.315	3
* 4	.425	4
* 6	.670	6
* 8	.897	8
* 10	1.115	10

PLUGS

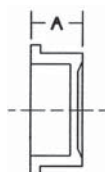
5818 4818



Plug (MIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES
1 1/4	.029	.042	1
1 1/2	.047	.062	1 3/8
2	.060	.083	1 3/8
* 2 1/2	.090	N/A	2 1/2
3	.161	.226	1 3/4
* 3 1/2	.202	N/A	1 3/4
4	.274	.367	1 7/8
6	.622	.875	2

5826



Fitting Plug (Spig)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES
* 1 1/2	.043	3/4
* 2	.090	7/8

* Available in ABS only

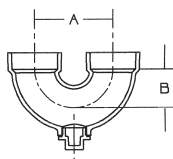
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

RETURN BENDS

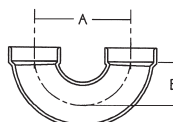
5878 4878



Return Bend (Hub x Hub x Cleanout w/Plug)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 1/2	.259	.366	3 1/4	1 3/8
2	.454	.643	5	2 1/4

5879 4879

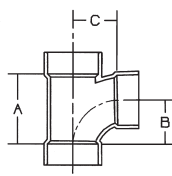


Return Bend (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1 1/2	.231	.333	3 1/4	1 3/8
2	.437	.620	5	2 1/4
3	1.151	1.632	6 5/16	2 11/16
4	2.255	3.083	8 1/2	3 11/16

TEES

5811 4811



Sanitary Tee (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1 1/4	.168	.234	2 3/8	1 19/32	1 9/16
1 1/2	.204	.294	2 5/8	1 11/16	1 11/16
* 1 1/2 x 1 1/2 x 1 1/4	.202	N/A	2 1/2	1 11/16	1 13/16
* 1 1/2 x 1 1/4 x 1 1/2	.235	N/A	2 3/4	1 3/4	1 3/4
* 1 1/2 x 1 1/4 x 1 1/4	.233	N/A	2 5/16	1 9/16	1 9/16
2	.328	.435	3 11/16	2 5/16	2 5/16
2 x 2 x 1 1/2	.273	.379	3 1/8	1 15/16	2 3/16
2 x 1 1/2 x 2	.313	.432	3 11/16	2 5/16	2 5/16
2 x 1 1/2 x 1 1/2	.264	.375	3 1/8	1 15/16	2 3/16
3	.998	1.399	4 7/8	3 1/16	3 1/16
3 x 3 x 2	.674	.946	3 5/16	2 1/8	2 7/8
3 x 3 x 1 1/2	.586	.808	2 11/16	1 3/4	2 9/16
4	1.755	2.495	6 1/8	3 7/8	3 7/8
4 x 4 x 3	1.442	1.980	4 3/4	3	3 9/16
4 x 4 x 2	1.013	1.432	3 3/16	2 1/16	3 5/16
4 x 4 x 1 1/2	1.092	1.526	3 3/16	2 1/16	3 5/16
6	4.375	5.950	8 3/8	4 15/16	4 15/16
6 x 6 x 4	3.065	4.650	6 1/32	3 27/32	4 31/32
† 8	N/A	11.665	10 7/16	5 31/32	5 31/32

* Available in ABS only

† Available in PVC only

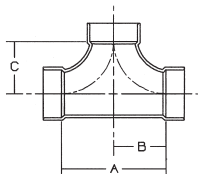
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

TEES (Continued)

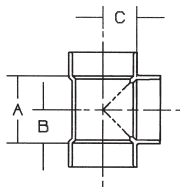
5811-C 4811-C



Two-Way Cleanout Tee (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
3	1.362	1.920	8 ¹ / ₈	4 ¹ / ₁₆	4 ¹ / ₁₆
4	2.433	3.323	9 ⁷ / ₈	4 ¹⁵ / ₁₆	4 ¹⁵ / ₁₆

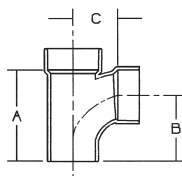
5811-V 4811-V



Vent Tee (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1 ¹ / ₂	.171	.246	2 ³ / ₈	1 ³ / ₁₆	1 ³ / ₁₆
2	.245	.382	3	1 ¹ / ₂	1 ¹ / ₂
3	.756	1.106	3 ³ / ₄	1 ⁷ / ₈	1 ⁷ / ₈
* 3 x 3 x 1 ¹ / ₂	.545	N/A	2 ³ / ₈	1 ³ / ₁₆	1 ⁷ / ₈
* 3 x 3 x 2	.598	N/A	3	1 ¹ / ₂	1 ⁷ / ₈
4	1.397	2.000	5	2 ¹ / ₂	2 ¹ / ₂
10	N/A	23.62	11 ⁵ / ₈	5 ¹³ / ₁₆	5 ¹³ / ₁₆
12	N/A	36.92	13 ³ / ₄	6 ⁷ / ₈	6 ⁷ / ₈

5811-2 4811-2



Sanitary Street Tee (Spig x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1 ¹ / ₂	.207	.275	3 ¹ / ₂	2 ¹ / ₂	1 ³ / ₄
2	.307	.436	4 ⁹ / ₁₆	3 ³ / ₁₆	2 ⁵ / ₁₆
2 x 2 x 1 ¹ / ₂	.267	.368	3 ⁷ / ₈	2 ³ / ₄	2 ¹ / ₈
2 x 1 ¹ / ₂ x 2	.309	.407	4 ⁹ / ₁₆	3 ³ / ₁₆	2 ⁵ / ₁₆
2 x 1 ¹ / ₂ x 1 ¹ / ₂	.247	.373	4	2 ¹³ / ₁₆	2 ³ / ₁₆
3	.994	1.365	6 ³ / ₈	4 ⁹ / ₁₆	3 ¹ / ₁₆
3 x 3 x 2	.658	.862	4 ¹³ / ₁₆	3 ⁵ / ₈	2 ⁷ / ₈
3 x 3 x 1 ¹ / ₂	.576	.813	4 ³ / ₁₆	3 ⁵ / ₈	2 ⁷ / ₈
4	1.750	2.462	7 ⁷ / ₈	5 ⁵ / ₈	3 ⁷ / ₈
† 4 x 4 x 2	N/A	1.724	4 ¹⁵ / ₁₆	3 ¹³ / ₁₆	3 ⁵ / ₁₆

* Available in ABS only

† Available in PVC only

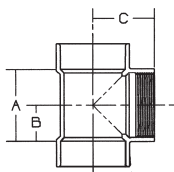
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ABS & PVC-DWV Fittings

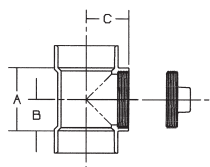
5800 Series - ABS/4800 Series PVC

TEES (Continued)

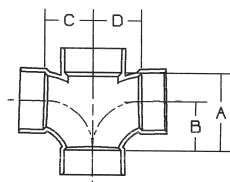
5811-14-V 4811-14-V



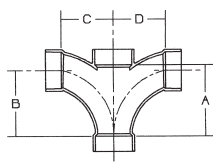
5814 4814



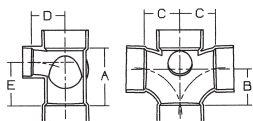
5835 4835



5835-B 4835-B



5835-9 4835-9



Test Tee (Hub x Hub x FIPT w/o plug)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1 1/2	.178	.277	2 3/8	1 3/16	1 13/16
2	.252	.388	3	1 1/2	2 1/8
3	.718	1.024	3 3/4	1 7/8	2 5/8
4	1.355	1.966	5	2 1/2	3 3/8

Test Tee (Hub x Hub x Cleanout w/Plug)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1 1/2	.225	.339	2 3/8	1 3/16	1 13/16
2	.312	.471	3	1 1/2	2 1/8
3	.879	1.250	3 3/4	1 7/8	2 5/8
4	1.629	2.333	5	2 1/2	3 3/8

Double Sanitary Tee (All Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 1/2	.262	.381	2 5/8	1 11/16	1 11/16	1 11/16
2	.394	.575	3 11/16	2 5/16	2 5/16	2 5/16
2 x 2 x 1 1/2 x 1 1/2	.356	.496	3	1 7/8	2 1/8	2 1/8
3	1.254	1.740	4 25/32	3 1/32	3 1/32	3 1/32
3 x 3 x 2 x 2	.784	1.025	3 5/16	2 1/8	2 7/8	2 7/8
3 x 3 x 2 x 1 1/2	.724	1.012	3 5/16	2 1/8	2 7/8	2 9/16
3 x 3 x 1 1/2 x 1 1/2	.644	.900	2 11/16	1 3/4	2 9/16	2 9/16
4	2.190	3.033	6 1/8	3 7/8	3 7/8	3 7/8
4 x 4 x 3 x 3	1.576	2.270	4 3/4	3	3 9/16	3 9/16
4 x 4 x 2 x 2	1.111	1.538	3 3/16	2 1/16	3 5/16	3 5/16

Double Fixture Tee (All Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
2	.593	.818	4 5/8	4 1/4	3 1/2	3 1/2
2 x 1 1/2 x 2 x 2	.585	.810	4 5/8	4 1/4	3 1/2	3 1/2
2 x 1 1/2 x 1 1/2 x 1 1/2	.409	.526	3 9/16	3 3/16	2 7/8	2 7/8
3	1.813	2.607	6 3/4	6 1/4	4 15/16	4 15/16
3 x 2 x 3 x 3	1.689	2.409	6 3/4	6 1/4	4 15/16	4 15/16

Double Sanitary Tee w/One-90° Side Inlet (All Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES	DIM. E INCHES
3 x 3 x 3 x 3 x 2	1.392	1.885	4 7/8	3 1/16	3 1/16	2 7/8	3 11/16
3 x 3 x 3 x 3 x 1 1/2	1.338	1.858	4 7/8	3 1/16	3 1/16	2 9/16	3 11/16
4 x 4 x 4 x 4 x 2	2.282	3.187	6 1/8	3 7/8	3 7/8	3 5/16	5

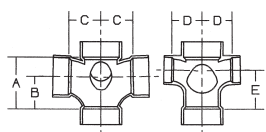
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ABS & PVC-DWV Fittings

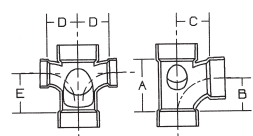
5800 Series - ABS/4800 Series PVC

TEES (Continued)

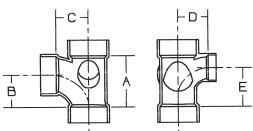
5835-9-9 4835-9-9



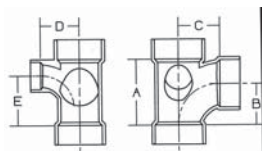
5870 4870



5871 4871



5872 4872



Double Sanitary Tee w/Two-90° Side Inlets (All Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES	DIM. E INCHES
3 x 3 x 3 x 3 x 2 x 2	1.549	2.063	4 ⁷ / ₈	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ⁷ / ₈	3 ¹¹ / ₁₆
4 x 4 x 4 x 4 x 2 x 2	2.477	3.329	6 ¹ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁵ / ₁₆	5

Sanitary Tee w/90° Right & Left Inlets (All Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES	DIM. E INCHES
3 x 3 x 3 x 2 x 2	1.354	1.775	4 ⁷ / ₈	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ⁷ / ₈	3 ¹¹ / ₁₆
† 3 x 3 x 3 x 1 ¹ / ₂ x 1 ¹ / ₂	N/A	1.620	4 ⁷ / ₈	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ⁹ / ₁₆	3 ¹¹ / ₁₆
† 4 x 4 x 4 x 2 x 2	2.079	2.735	6 ¹ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁵ / ₁₆	5

Sanitary Tee w/90° Left Inlet (All Hub)

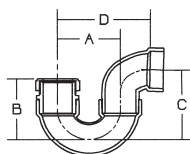
NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES	DIM. E INCHES
3 x 3 x 3 x 2	1.125	1.561	4 ⁷ / ₈	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ⁷ / ₈	3 ¹¹ / ₁₆
3 x 3 x 3 x 1 ¹ / ₂	1.061	1.503	4 ⁷ / ₈	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ⁹ / ₁₆	3 ¹¹ / ₁₆
3 x 3 x 2 x 2 F	1.408	1.934	3 ⁹ / ₈	2 ¹ / ₈	2 ⁷ / ₈	2 ⁷ / ₈	2 ¹ / ₂
4 x 4 x 4 x 2	2.079	2.600	6 ¹ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁵ / ₁₆	5

Sanitary Tee w/90° Right Inlet (All Hub)

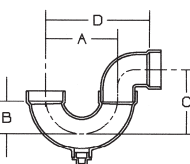
NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES	DIM. E INCHES
3 x 3 x 3 x 2 F	1.147	1.543	4 ⁷ / ₈	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ⁷ / ₈	3 ¹¹ / ₁₆
3 x 3 x 3 x 1 ¹ / ₂	1.061	1.479	4 ⁷ / ₈	3 ¹ / ₁₆	3 ¹ / ₁₆	2 ⁹ / ₁₆	3 ¹¹ / ₁₆
3 x 3 x 2 x 2	1.430	1.916	3 ⁹ / ₈	2 ¹ / ₈	2 ⁷ / ₈	2 ⁷ / ₈	2 ¹ / ₂
4 x 4 x 4 x 2	1.889	2.584	6 ¹ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁵ / ₁₆	5

TRAPS

5881 4881



5884 4884



P-Trap (Hub x SJ)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 ¹ / ₂ F	.471	.634	3 ³ / ₁₆	2 ⁵ / ₁₆	3 ⁵ / ₈	4 ⁷ / ₁₆

P-Trap (Hub x Hub x Cleanout w/Plug)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 ¹ / ₂	.405	.547	3 ¹ / ₄	1 ³ / ₈	3 ⁵ / ₈	4 ⁷ / ₁₆
2	.678	.946	5	2 ¹ / ₄	4 ⁵ / ₈	6 ¹ / ₂

† Available in PVC only

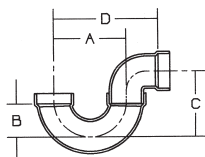
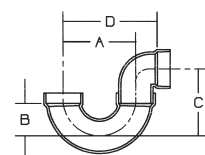
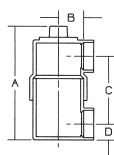
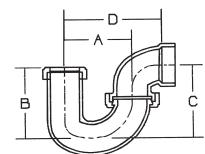
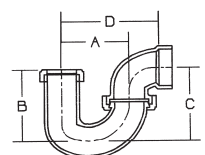
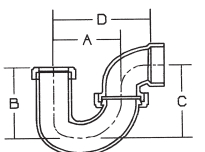
F Fabricated

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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

TRAPS (Continued)

5885 4885

4885-WB

5891 4891

5892 4892

5892-B

5892-C 4892-C


P-Trap (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 1/2	.377	.514	3 1/4	1 3/8	3 5/8	4 13/16
2	.661	.923	5	2 1/4	4 1/2	7 1/4
3	1.748	2.474	6 5/16	2 11/16	6 5/16	8 7/16
4	3.479	4.814	8 1/2	3 11/16	9 3/8	11 31/32

Washer Box P-Trap (Hub x Hub)

NOM. SIZE	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
† 2	.871	5	2 1/4	4 5/8	6 1/2

Swivel Drum Trap (Hub x Hub x Cleanout w/Plug)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 1/2 x 3 x 6	.980	1.342	8	1 3/4	4 5/8	1 3/16

P-Trap w/Union Joint (Hub x SJ)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 1/2	.453	.634	3 1/2	3 3/4	3 13/16	5 1/16
1 1/2 x 1 1/4	.412	.576	3 1/2	3 3/4	3 13/16	5 1/16

P-Trap w/Union Joint (Hub x SJ w/Brass Nut)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
* 1 1/2 F	.525	3 1/2	3 3/4	3 13/16	5 1/16

P-Trap w/Union Joint (Hub x SJ w/Chrome Nut)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 1/2 F	.482	.663	3 1/2	3 3/4	3 13/16	5 1/16
1 1/2 x 1 1/4 F	.435	.599	3 1/2	3 3/4	3 13/16	5 1/16

† Available in PVC only

F Fabricated

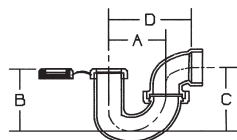
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

TRAPS (Continued)

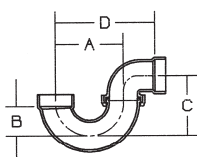
5893 4893



P-Trap w/Union Joint L.A. Pattern (Hub x SJ)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 1/2 or 1 1/2 x 1 1/4	.485	.666	3 1/4	3 5/8	3 1/2	4 1/2

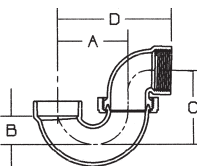
5895 4895



P-Trap w/Union Joint (Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 1/4	.341	.468	3 1/2	1 3/8	3 5/8	4 5/8
1 1/2	.398	.572	3 1/4	1 3/8	3 5/8	4 13/16
2	.695	.929	5	2 1/4	5	7 1/4

5895-3 4895-3

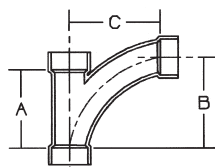


P-Trap w/Union Joint (Hub x FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES
1 1/2	.401	.566	3 1/4	1 3/8	3 1/2	5 1/4

TY'S

5812-LR 4812-LR



Long Radius TY (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1 1/2	.338	.458	3 1/2	3 7/8	3 15/16
2	.520	.694	4 7/16	5 1/8	5 1/8
2 x 2 x 1 1/2	.360	.517	3 1/2	3 7/8	4 5/32
* 2 x 1 1/2 x 2	.522	N/A	4 7/16	5 1/8	5 1/8
2 x 1 1/2 x 1 1/2	.376	.537	3 1/2	3 7/8	4 5/32
3	1.608	2.226	6 1/2	7 9/16	7 9/16
3 x 3 x 2	.936	1.255	4 7/16	5 1/8	5 11/16
3 x 3 x 1 1/2	.750	1.075	3 1/2	3 15/16	4 3/4
4	3.174	4.152	8 1/2	10	10
4 x 4 x 3	2.089	2.919	6 1/2	7 9/16	8 1/16
4 x 4 x 2	1.340	1.845	4 1/2	5 1/8	6 1/8

* Available in ABS only

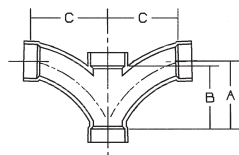
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ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

TY'S (Continued)

5836 4836

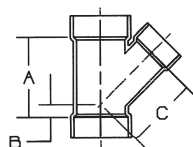


Double Long Turn TY (All Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
† 2 F	N/A	1.341	47/16	5 1/8	5 1/8
2 x 2 x 1 1/2 x 1 1/2 F	.721	.967	3 1/2	3 15/16	4 3/16
3 F	2.759	3.897	6 1/2	7 9/16	7 9/16
† 3 x 3 x 2 x 2 F	N/A	1.900	47/16	5 1/8	5 1/16
4 F	4.896	6.884	8 1/2	10	10
† 4 x 4 x 3 x 3 F	N/A	4.535	6 1/2	7 9/16	8 1/16
† 4 x 4 x 2 x 2 F	N/A	2.549	4 1/2	5 1/8	6 1/8

WYES

5810 4810



45° Wye (Hub x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1 1/4	.220	.312	3 5/8	1 1/16	2 9/16
1 1/2	.264	.373	3 7/8	1 1/16	2 13/16
2	.426	.567	5	1 3/8	3 5/8
2 x 2 x 1 1/2	.372	.470	4 1/4	1	3 3/8
2 x 1 1/2 x 1 1/2	.309	.413	3 19/32	1 1/16	2 31/32
3	1.254	1.697	6 5/8	1 5/8	5
3 x 3 x 2	.826	1.157	5	7/8	4 5/8
3 x 3 x 1 1/2	.781	1.099	4 5/32	7/16	4 9/32
4	2.305	3.171	8 1/4	1 7/8	6 3/8
4 x 4 x 3	1.753	2.418	6 5/8	1 1/16	6
4 x 4 x 2	1.311	1.828	5 1/16	3/8	5 9/16
4 x 4 x 1 1/2	1.390	1.922	5 1/16	3/8	5 7/8
6	5.053	7.144	10 3/8	1 3/4	8 7/16
6 x 6 x 4	3.562	5.040	7 1/4	1/4	7 1/2
6 x 6 x 3	3.973	5.566	7 1/4	1/4	7 3/4
† 8	N/A	15.200	14 3/4	2 3/8	11 3/4
† 8 x 8 x 6	N/A	10.720	9 1/2	1	9 13/16
† 8 x 8 x 4 F	N/A	12.911	9 1/2	1	11 23/32

† Available in PVC only

F Fabricated

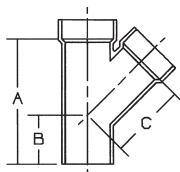
Do not use or test the products in this catalog with compressed air or other gasses.

ABS & PVC-DWV Fittings

5800 Series - ABS/4800 Series PVC

WYES (Continued)

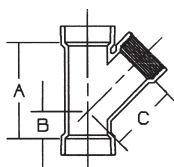
5810-2 4810-2



45° Street Wye (Spg x Hub x Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
* 1½	.258		4 ¹¹ / ₁₆	1 ¹³ / ₁₆	2 ⁷ / ₈
2	.414	.567	5 ²⁹ / ₃₂	2 ¹ / ₄	3 ²¹ / ₃₂
3	1.199	.595	8 ¹ / ₈	3 ¹ / ₈	5
3 x 3 x 2	.827	1.158	6 ¹ / ₂	2 ³ / ₈	4 ⁵ / ₈
3 x 3 x 1½	.725	1.015	5 ³ / ₄	2	4 ⁵ / ₁₆
4	2.183	3.056	10	3 ⁵ / ₈	6 ³ / ₈
4 x 4 x 3	1.678	2.349	8 ³ / ₈	2 ¹³ / ₁₆	6
† 4 x 4 x 2	N/A	1.768	6 ¹³ / ₁₆	2 ¹ / ₈	5 ⁹ / ₁₆

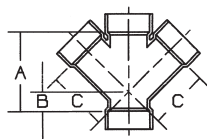
5810-14



45° Wye (Hub x Hub x FIPT)

NOM. SIZE	ABS APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
* 1½	.287	3 ⁷ / ₈	1 ¹ / ₁₆	3 ¹³ / ₁₆

5834 4834



45° Double Wye (All Hub)

NOM. SIZE	ABS APPROX. NET WT./LBS.	PVC APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1½	.365	.504	4	1 ¹ / ₈	2 ⁷ / ₈
2	.558	.787	5	1 ³ / ₈	3 ⁵ / ₈
2 x 2 x 1½ x 1½	.453	.619	4 ³ / ₈	1 ¹ / ₁₆	3 ⁷ / ₁₆
3	1.557	2.261	6 ⁵ / ₈	1 ⁵ / ₈	5
3 x 3 x 2 x 2	.975	1.346	5	7 ⁷ / ₈	4 ⁵ / ₈
3 x 3 x 1½ x 1½	.815	1.170	4 ¹ / ₄	1 ¹ / ₂	4 ⁵ / ₁₆
4	2.800	3.956	8 ¹ / ₄	1 ⁷ / ₈	6 ³ / ₈
4 x 4 x 3 x 3	2.072	2.899	6 ⁵ / ₈	1 ¹ / ₁₆	6
4 x 4 x 2 x 2	1.400	1.995	5 ¹ / ₁₆	3 ³ / ₈	5 ⁹ / ₁₆
† 6	N/A	5.000	10 ³ / ₁₆	1 ³ / ₄	8 ⁷ / ₁₆
6 x 6 x 4 x 4	4.079	5.706	7 ¹ / ₄	1 ¹ / ₄	7 ¹ / ₂

* Available in ABS only

† Available in PVC only

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CPVC-CTS Pressure Fittings

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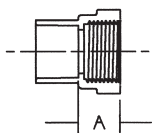
FlowGuard Gold® is a patented CPVC formulated compound developed by Lubrizol Advanced Materials, Inc. to improve the impact resistance of CPVC hot & cold water plumbing products.

FLOWGUARD GOLD®
CPVC

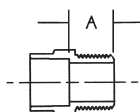
CPVC-CTS Pressure Fittings

ADAPTERS

4703



4704



Female Adapter w/Washer (Slip x FIPT)

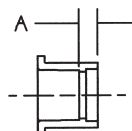
NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.026	3/4
3/4	.039	25/32
1	.065	29/32

Male Adapter (Slip x MIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.023	7/8
3/4	.035	7/8
1	.060	1 1/16
1 1/4	.104	1 1/16
1 1/2	.155	1 1/8
2	.285	1 3/16

BUSHINGS

4718



Bushing (Spg x Slip)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
3/4 x 1/2	.012	7/32
1 x 1/2	.031	1/2
1 x 3/4	.025	5/16
1 1/4 x 1/2	.052	23/32
1 1/4 x 3/4	.055	1/2
1 1/4 x 1	.039	5/16
1 1/2 x 1/2	.081	29/32
1 1/2 x 3/4	.083	29/32
1 1/2 x 1	.083	1/2
1 1/2 x 1 1/4	.053	5/16
2 x 1/2	.170	1 5/16
2 x 3/4	.171	1 1/8
2 x 1	.174	29/32
2 x 1 1/4	.182	23/32
2 x 1 1/2	.148	1/2

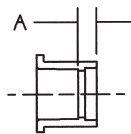
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CPVC-CTS Pressure Fittings

BUSHINGS (Continued)

4718-T

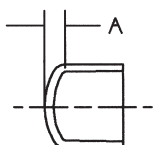


Transition Bushing (Spigot IPS x Slip CTS)

NOM. SIZE		APPROX. NET WT./LBS.	DIM. A INCHES
1	(IPS) x 1 (CTS)	.030	9/32
1 1/4	(IPS) x 1 1/4 (CTS)	.057	1/4
1 1/2	(IPS) x 1 1/2 (CTS)	.070	3/16
2	(IPS) x 2 (CTS)	.111	1/8

CAPS

4717

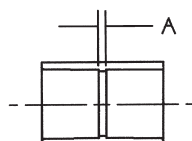


Cap (Slip)

NOM. SIZE		APPROX. NET WT./LBS.	DIM. A INCHES
1/2		.012	1/8
3/4		.019	1/8
1		.034	5/16
1 1/4		.061	7/16
1 1/2		.100	1/2
2		.219	5/8

COUPLINGS

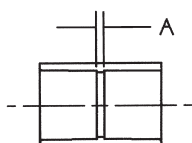
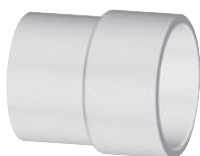
4701



Coupling (Slip x Slip)

NOM. SIZE		APPROX. NET WT./LBS.	DIM. A INCHES
1/2		.017	1/8
3/4		.030	1/8
3/4 x 1/2		.021	1/8
1		.048	1/8
1 x 3/4		.039	1/8
1 1/4		.086	1/8
1 1/2		.139	1/8
2		.305	1/8

4701-T



Transition Coupling (Slip IPS x Slip CTS)

NOM. SIZE		APPROX. NET WT./LBS.	DIM. A INCHES
3/4	(IPS) x 3/4 (CTS)	.039	1/8
1	(IPS) x 1 (CTS)	.068	1/8
2	(IPS) x 2 (CTS)	.330	1/8

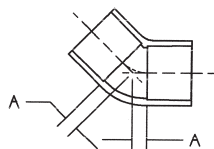
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CPVC-CTS Pressure Fittings

ELBOWS

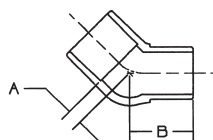
4706



45° Ell (Slip x Slip)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.020	3/16
3/4	.036	1/4
1	.077	5/16
1 1/4	.108	11/32
1 1/2	.174	13/32
2	.382	1/2

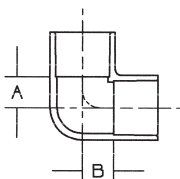
4706-2



45° Street Ell (Spg x Slip)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.018	3/16	13/16
3/4	.032	1/4	1 1/16
1	.074	5/16	1 1/4

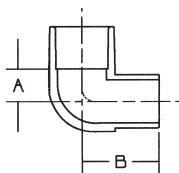
4707



90° Ell (Slip x Slip)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.025	13/32	13/32
3/4	.052	17/32	17/32
3/4 x 1/2	.034	13/32	17/32
1	.077	21/32	21/32
1 x 1/2 F	.108	21/32	1 3/16
1 x 3/4 F	.102	21/32	31/32
1 1/4	.140	25/32	25/32
1 1/4 x 1 F	.179	25/32	1 3/32
1 1/2	.223	29/32	29/32
2	.499	1 5/32	1 5/32

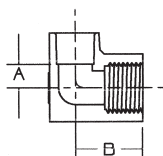
4707-2



90° Street Ell (Spg x Slip)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.022	13/32	15/16
3/4	.039	21/32	1 9/32
1	.087	21/32	1 19/32

4707-3-5



90° Drop Ear Ell w/Washer (Slip x FIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.067	13/32	1 1/8

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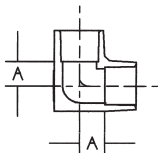
F Fabricated using NSF listed Elbows, Bushings, and 1-Step Solvent Cement

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CPVC-CTS Pressure Fittings

ELBOWS (Continued)

4707-5

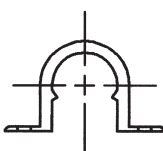


90° Drop Ear Ell (Slip x Slip)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.036	13/32

STRAPS

4724

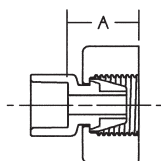


"Snap-On" Strap (Polypropylene)

NOM. SIZE	APPROX. NET WT./LBS.
1/2	.003
3/4	.004

SWIVEL ADAPTERS

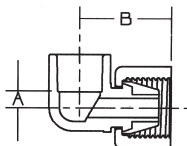
4703-SW



Coupling Adapter (Slip x NPSM)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.034	1

4707-3-SW



90° Ell (Slip x NPSM)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.040	3/4	1 ⁹ / ₃₂

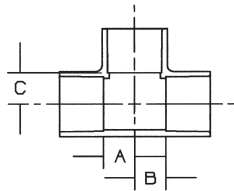
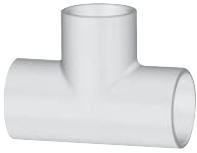
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CPVC-CTS Pressure Fittings

TEES

4711



Tee (Slip x Slip x Slip)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
1/2	.034	13/32	13/32	13/32
1/2 x 1/2 x 3/4 F	.065	11/16	11/16	17/32
3/4	.063	17/32	17/32	17/32
3/4 x 3/4 x 1/2	.045	13/32	13/32	17/32
3/4 x 1/2 x 3/4	.053	17/32	19/32	17/32
3/4 x 1/2 x 1/2	.042	13/32	15/32	17/32
3/4 x 3/4 x 1 F	.150	31/32	31/32	21/32
1	.100	21/32	21/32	21/32
1 x 1/2 x 1/2 F	.127	21/32	1 ³ / ₁₆	1 ³ / ₁₆
1 x 1/2 x 3/4 F	.121	21/32	1 ³ / ₁₆	31/32
1 x 1/2 x 1 F	.131	21/32	1 ³ / ₁₆	21/32
1 x 3/4 x 1/2 F	.121	21/32	31/32	1 ³ / ₁₆
1 x 3/4 x 3/4 F	.109	21/32	31/32	31/32
1 x 3/4 x 1 F	.125	21/32	31/32	21/32
1 x 1 x 1/2 F	.096	21/32	21/32	1 ³ / ₁₆
1 x 1 x 3/4	.084	17/32	17/32	21/32
1 ¹ / ₄	.174	25/32	25/32	25/32
1 ¹ / ₄ x 1 x 3/4 F	.268	25/32	1 ³ / ₃₂	1 ⁵ / ₁₆
1 ¹ / ₄ x 1 x 1 F	.252	25/32	1 ³ / ₃₂	1 ³ / ₃₂
1 ¹ / ₄ x 1 x 1 ¹ / ₄ F	.213	25/32	1 ³ / ₃₂	25/32
1 ¹ / ₄ x 1 ¹ / ₄ x 1/2 F	.226	25/32	25/32	1 ¹ / ₂
1 ¹ / ₄ x 1 ¹ / ₄ x 3/4 F	.229	25/32	25/32	1 ⁵ / ₁₆
1 ¹ / ₄ x 1 ¹ / ₄ x 1 F	.213	25/32	25/32	1 ³ / ₁₆
1 ¹ / ₂	.284	29/32	29/32	29/32
1 ¹ / ₂ x 1 ¹ / ₂ x 1	.215	21/32	21/32	29/32
2	.636	15/32	15/32	1 ⁵ / ₃₂
2 x 2 x 1	.421	21/32	21/32	1 ⁵ / ₃₂

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CPVC-CTS Pressure Fittings

TRANSITION FITTINGS

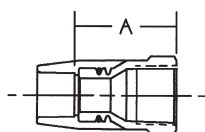
4703-BT



Adapter (CPVC Slip x Brass MIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.112	1 ⁵ / ₇
3/4	.165	2
1	.411	2 ⁴ / ₇
1 ¹ / ₄	.167	3 ¹ / ₄
1 ¹ / ₂	.833	3 ¹ / ₂
2	1.833	4

4703-CT



Female Adapter (CPVC Slip x Copper FIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.130	1 ³ / ₈
3/4	.186	1 ¹¹ / ₁₆

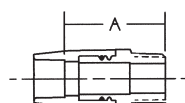
4704-BT



Male Adapter (CPVC Slip x Copper MIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.164	2
3/4	.240	2 ² / ₇
1	.428	2 ⁶ / ₇
1 ¹ / ₄	.833	3 ³ / ₈
1 ¹ / ₂	1.167	3 ⁷ / ₉
2	1.667	4 ² / ₇

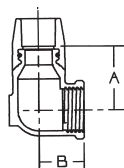
4704-CT



Male Adapter (CPVC Slip x Copper FIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.147	1 ³ / ₈
3/4	.226	1 ¹¹ / ₁₆

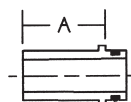
4707-3-5-B



90° Drop Ear El (CPVC Slip x Bronze FIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.214	1 ³ / ₁₆	13/16

4732-2



Compression Fitting (SPG)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.020	1 ⁷ / ₁₆
3/4	.034	1 ⁷ / ₁₆

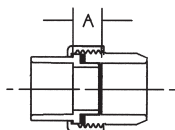
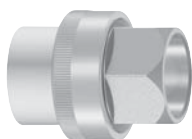
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CPVC-CTS Pressure Fittings

TRANSITION UNIONS

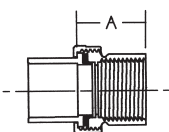
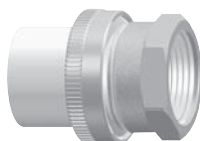
4733



Union (CPVC Slip x Brass Solder)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.106	17/32
3/4	.221	9/16

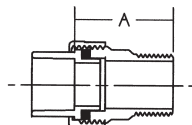
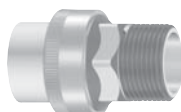
4733-3



Union (CPVC Slip x Brass FIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.179	1 13/32
3/4	.299	1 7/16
1	.435	1 7/16
1 1/4	.607	1 5/8
1 1/2	.757	1 5/8
2	1.298	1 7/8

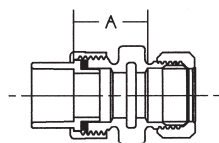
4733-4



Union (CPVC Slip x Copper MIPT)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.131	1 15/32
1/2 x 3/4	.188	1 23/32
3/4	.255	1 11/32

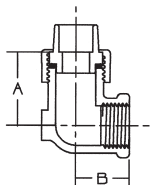
4733-7



Union (CPVC Slip x Brass Compression)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
1/2	.237	1 15/32
1/2 x 3/8 O.D.	.290	1 23/32
3/4	.453	1 11/32

4707-3-5-6



Union 90° Drop Ell (CPVC Slip x Brass FIPT)

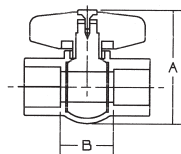
NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.322	1 11/32	15/16

FLOWGUARD GOLD®
CPVC

Do not use or test the products in this catalog with compressed air or other gasses.

CPVC-CTS Pressure Fittings VALVES

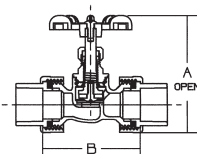
4770



CPVC-CTS Ball Valve

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.090	1 ¹⁵ / ₁₆	1 ¹¹ / ₁₆
3/4	.180	2 ⁷ / ₈	1 ⁷ / ₈
1	.310	3 ¹ / ₁₆	1 ¹⁵ / ₁₆
1 ¹ / ₄	.490	4 ¹ / ₆	1 ¹⁵ / ₁₆
1 ¹ / ₂	.660	4 ¹ / ₂	1 ⁷ / ₈
2	1.150	5 ² / ₃	2 ⁹ / ₃₂

4776

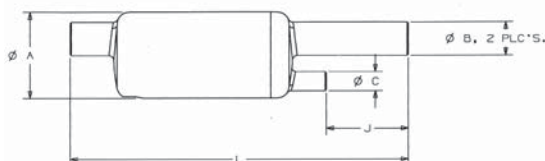


Stop & Waste Valve (CPVC Slip x CPVC Slip)

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	B OPEN INCHES
1/2	.620	2 ⁹ / ₁₆	3
3/4	.740	9 ⁹ / ₁₆	3 ¹ / ₁₆

RAPID HOT WATER DELIVERY SYSTEM

4750



Just Right®

NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES	DIM. D INCHES	DIM. E INCHES
3/4	1.405	2 ¹ / ₄	7/8	1/2	8 ³ / ₄	2 ¹ / ₈

Just Right® is made with NIBCO FlowGuard Gold® CPVC, and is designed for use in both residential and light-commercial applications, including new and existing structures, where the hot-water line is located above the water heater. To complete the re-circulation loop, a return line must be run from the most distant hot-water outlet back to the Just Right® unit. Just Right® from NIBCO is a low-cost hot-water circulating unit that delivers hot water to every tap in a residence's plumbing loop within seconds.

FLOWGUARD GOLD®
CPVC

Do not use or test the products in this catalog with compressed air or other gasses.

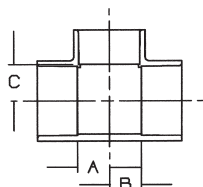
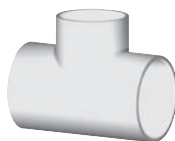
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PVC Schedule 40 Pressure Fittings

TEES

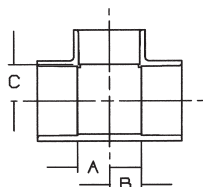
4611



Tee (Slip x Slip x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
401-005	1/2	.065	1/2	1/2	1/2
401-007	3/4	.099	9/16	9/16	9/16
401-010	1	.155	11/16	11/16	11/16
401-012	1 1/4	.241	7/8	7/8	7/8
401-015	1 1/2	.353	1	1	1
401-020	2	.448	1 1/4	1 1/4	1 1/4
401-025	2 1/2	.913	1 1/2	1 1/2	1 1/2
401-030	3	1.588	1 13/16	1 13/16	1 13/16
401-040	4	2.630	2 5/16	2 5/16	2 5/16
401-050	5	7.000	2 1/8	2 1/8	2 1/8
401-060	6	9.480	3 1/2	3 1/2	3 1/2
401-080	8	21.105	4 9/16	4 9/16	4 9/16
401-100	10	24.780	5 3/4	5 3/4	5 3/4
401-120	12	40.880	6 29/32	6 29/32	6 29/32

4611



Reducing Tee (Slip x Slip x Slip)

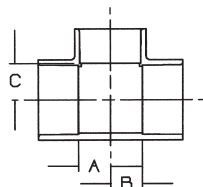
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
401-074	1/2 x 1/2 x 3/4	.125	9/16	9/16	1/2
401-094	3/4 x 1/2 x 1/2	.073	1/2	1/2	9/16
401-095	3/4 x 1/2 x 3/4	.155	9/16	9/16	9/16
401-101	3/4 x 3/4 x 1/2	.081	1/2	1/2	9/16
401-102	3/4 x 3/4 x 1	.220	23/32	23/32	19/32
401-124	1 x 3/4 x 1/2	.185	17/32	17/32	23/32
401-125	1 x 3/4 x 3/4	.204	23/32	23/32	23/32
401-130	1 x 2 x 1/2	.123	1/2	1/2	11/16
401-131	1 x 1 x 3/4	.132	9/16	9/16	11/16
401-133	1 x 1 x 1 1/2	.250	7/8	7/8	7/8
401-157	1 1/4 x 1 x 1 3/4	.290	1/2	1/2	7/8
401-166	1 1/4 x 1 1/4 x 1/2	.175	1/2	1/2	7/8
401-167	1 1/4 x 1 1/4 x 3/4	.170	9/16	9/16	7/8
401-168	1 1/4 x 1 1/4 x 1	.176	11/16	11/16	7/8
401-201	1 1/2 x 1 1/4 x 3/4	.385	1 1/16	1 1/16	1 1/16
401-202	1 1/2 x 1 1/4 x 1	.410	1 1/16	1 1/16	1 1/16
401-209	1 1/2 x 1 1/2 x 1/2	.209	1/2	1/2	1
401-210	1 1/2 x 1 1/2 x 3/4	.218	9/16	9/16	1
401-211	1 1/2 x 1 1/2 x 1	.248	11/16	11/16	1
401-212	1 1/2 x 1 1/2 x 1 1/4	.475	7/8	7/8	1
401-213	1 1/2 x 1 1/2 x 2	.673	1 5/16	1 5/16	1 1/16
401-241	2 x 1 1/2 x 1 1/2	.500	1 1/4	1 1/4	1
401-247	2 x 2 x 1/2	.275	1/2	1/2	1 1/4
401-248	2 x 2 x 3/4	.296	9/16	9/16	1 1/4
401-249	2 x 2 x 1	.325	11/16	11/16	1 1/4
401-250	2 x 2 x 1 1/4	.650	7/8	7/8	1 1/4
401-251	2 x 2 x 1 1/2	.673	1	1	1 1/4

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

TEES (Continued)

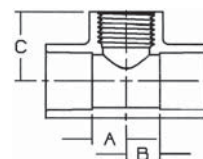
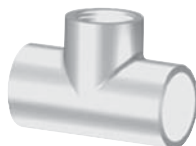
4611



Reducing Tee (Slip x Slip x Slip) (continued)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
401-287	2 1/2 x 2 1/2 x 1/2	1.100	1/2	1/2	1 1/2
401-288	2 1/2 x 2 1/2 x 3/4	1.100	19/32	19/32	1 1/2
401-289	2 1/2 x 2 1/2 x 1	.579	11/16	11/16	1 1/2
401-290	2 1/2 x 2 1/2 x 1 1/4	1.110	1 1/16	1 1/16	1 11/16
401-291	2 1/2 x 2 1/2 x 1 1/2	1.110	1 9/32	1 9/32	1 1/2
401-292	2 1/2 x 2 1/2 x 2	1.180	1 1/4	1 1/4	1 1/2
401-333	3 x 3 x 1/2	.950	23/32	23/32	1 15/16
401-334	3 x 3 x 3/4	.785	3/4	3/4	2
401-335	3 x 3 x 1	.965	11/16	11/16	1 13/16
401-336	3 x 3 x 1 1/4	1.200	7/8	7/8	1 13/16
401-337	3 x 3 x 1 1/2	1.112	1 1/4	1 1/4	1 3/4
401-338	3 x 3 x 2	.963	1 1/4	1 1/4	1 13/16
401-416	4 x 4 x 3/4	1.400	1 3/32	1 3/32	2 13/32
401-417	4 x 4 x 1	1.400	1 3/32	1 3/32	2 13/32
401-419	4 x 4 x 1 1/2	1.550	1 3/32	1 3/32	2 5/16
401-420	4 x 4 x 2	1.515	1 1/4	1 1/4	2 5/16
401-422	4 x 4 x 3	3.308	2 5/16	2 5/16	2 5/16
401-528	6 x 6 x 2	8.000	1 7/16	1 7/16	3 5/8
401-530	6 x 6 x 3	8.250	2	2	3 5/8
401-532	6 x 6 x 4	8.500	2 1/2	2 1/2	3 5/8
401-582	8 x 8 x 4	19.000	2 1/2	2 1/2	4 5/8
401-585	8 x 8 x 6	20.000	3 5/8	3 5/8	4 5/8

4612



Tee (Slip x Slip x FIPT)

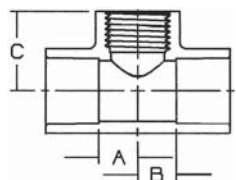
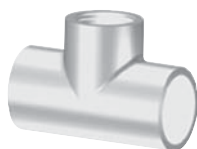
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
402-005	1/2	.065	1/2	1/2	1 1/32
402-007	3/4	.097	9/16	9/16	1 1/8
402-010	1	.158	11/16	11/16	1 3/8
402-012	1 1/4	.390	7/8	7/8	1 19/32
402-015	1 1/2	.529	1	1	1 23/32
402-020	2	.760	1 1/4	1 1/4	2
402-030	3	1.850	1 13/16	1 13/16	3
402-040	4	3.220	2 5/16	2 5/16	3 5/8

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

TEES (Continued)

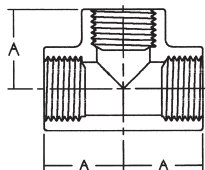
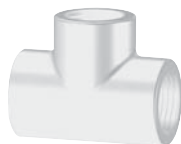
4612



Reducing Tee (Slip x Slip x FIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
402-074	1/2 x 1/2 x 3/4	.145	21/32	21/32	19/16
402-094	3/4 x 1/2 x 1/2	.145	1/2	1/2	13/32
402-101	3/4 x 3/4 x 1/2	.088	1/2	1/2	13/32
402-124	1 x 3/4 x 1/2	.111	1/2	1/2	17/32
402-125	1 x 3/4 x 3/4	.211	9/16	9/16	11/4
402-130	1 x 1 x 1/2	.123	1/2	1/2	17/32
402-131	1 x 1 x 3/4	.130	9/16	9/16	11/4
402-156	1 1/4 x 1 x 1/2	.286	15/16	15/16	1 13/16
402-157	1 1/4 x 1 x 3/4	.298	15/16	15/16	1 15/16
402-158	1 1/4 x 1 x 1	.331	15/16	15/16	2 1/16
402-166	1 1/4 x 1 1/4 x 1/2	.170	1/2	1/2	1 13/32
402-167	1 1/4 x 1 1/4 x 3/4	.335	9/16	9/16	17/16
401-168	1 1/4 x 1 1/4 x 1	.357	11/16	11/16	19/16
402-199	1 1/2 x 1 1/4 x 1/2	.376	1 1/16	1 1/16	19/16
402-201	1 1/2 x 1 1/4 x 3/4	.380	1 1/16	1 1/16	2 1/16
402-202	1 1/2 x 1 1/4 x 1	.410	1 1/16	1 1/16	2 7/16
402-209	1 1/2 x 1 1/2 x 1/2	.410	1/2	1/2	1 17/32
402-210	1 1/2 x 1 1/2 x 3/4	.425	9/16	9/16	19/16
402-211	1 1/2 x 1 1/2 x 1	.453	1 1/16	1 1/16	2 3/16
402-212	1 1/2 x 1 1/2 x 1 1/4	.460	15/16	15/16	2 1/4
402-239	2 x 1 1/2 x 1	.556	1 9/32	1 9/32	2 13/32
402-247	2 x 2 x 1/2	.273	1/2	1/2	1 25/32
402-248	2 x 2 x 3/4	.287	9/16	9/16	1 13/16
402-249	2 x 2 x 1	.632	11/16	11/16	1 15/16
402-251	2 x 2 x 1 1/2	.698	1	1	1 31/32
402-288	2 1/2 x 2 1/2 x 3/4	.990	5/8	5/8	2 1/2
402-333	3 x 3 x 1/2	1.000	5/16	5/16	2 15/16
402-334	3 x 3 x 3/4	1.050	29/32	29/32	2 27/32
402-335	3 x 3 x 1	1.010	1	1	2 1/8
402-337	3 x 3 x 1 1/2	1.005	1 1/4	1 1/4	4 3/16
402-338	3 x 3 x 2	1.025	1 1/4	1 1/4	2 9/16
402-419	4 x 4 x 1 1/2	3.190	2 5/16	2 5/16	3
402-420	4 x 4 x 2	1.518	2 3/8	2 3/8	4 7/8
402-422	4 x 4 x 3	3.672	2 3/8	2 3/8	4 13/16

4612-3-3



Tee (FIPT x FIPT x FIPT)

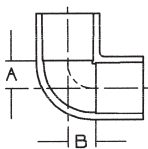
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
405-005	1/2	.115	1 3/8
405-007	3/4	.190	1 21/32
405-010	1	.290	1 29/32
405-015	1 1/2	.575	1 3/4

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

ELBOWS

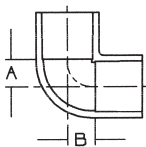
4607



90° Ell (Slip x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
406-005	1/2	.047	1/2	1/2
406-007	3/4	.073	9/16	9/16
406-010	1	.117	11/16	11/16
406-012	1 1/4	.188	7/8	7/8
406-015	1 1/2	.240	1	1
406-020	2	.375	1 1/4	1 1/4
406-025	2 1/2	.869	1 1/2	1 1/2
406-030	3	1.189	1 13/16	1 13/16
406-040	4	2.100	2 5/16	2 5/16
406-050	5	5.000	3 1/4	3 1/4
406-060	6	4.245	3 1/2	3 1/2
406-080	8	14.585	4 9/16	4 9/16
406-100	10	19.390	5 3/4	5 3/4
406-120	12	30.730	6 29/32	6 29/32

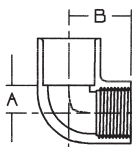
4607



Reducing 90° Ell (Slip x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
406-101	3/4 x 1/2	.061	1/2	9/16
406-130	1 x 1/2	.085	1/2	11/16
406-131	1 x 3/4	.155	13/16	23/32
406-167	1 1/4 x 3/4	.205	3/4	29/32
406-168	1 1/4 x 1	.240	7/8	27/32
406-251	2 x 1 1/2	.396	1 15/16	1 1/8

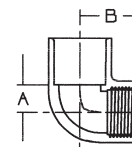
4607-3



90° Ell (Slip x FIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
407-005	1/2	.054	1/2	1 13/32
407-007	3/4	.076	9/16	1 9/16
407-010	1	.124	11/16	1 13/16
407-012	1 1/4	.297	7/8	2 13/16
407-015	1 1/2	.248	1	2 29/32
407-020	2	.540	1 1/4	2 13/16
407-025	2 1/2	.927	1 9/16	3 19/32
407-030	3	1.609	1 3/16	3
407-040	4	2.460	2 5/16	3 5/8

4607-3



Reducing 90° Ell (Slip x FIPT)

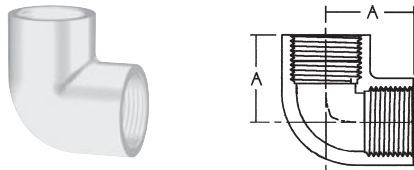
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
407-074	1/2 x 3/4	.098	9/16	1 15/32
407-101	3/4 x 1/2	.065	9/16	1 5/8
407-130	1 x 1/2	.089	1/2	1 13/32
407-131	1 x 3/4	.101	3/4	1 7/8
407-168	1 1/4 x 1	.255	7/8	2 1/8
407-211	1 1/2 x 1	.400	1	2 1/8
407-251	2 x 1 1/2	.575	1 1/4	2 5/32

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

ELBOWS (Continued)

4607-3-3



90° Ell (FIPT x FIPT)

UNIV.	NOM.	APPROX.	DIM. A
408-005	1/2	.085	17/32
408-007	3/4	.138	121/32
408-010	1	.209	17/8
408-012	1 1/4	.320	23/16
408-015	1 1/2	.434	27/16
408-020	2	.675	27/8

4607-2



90° Street Ell (Spq x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
409-005	1/2	.060	1/2	17/16
409-007	3/4	.071	9/16	19/16
409-010	1	.118	11/16	2
409-012	1 1/4	.200	7/8	2 1/16
409-015	1 1/2	.240	1	2 19/32
409-020	2	.363	1 1/4	2 7/8

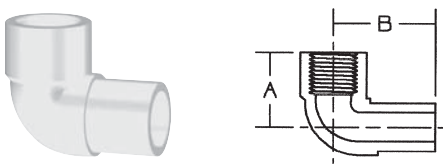
4607-4



90° Street Ell (MIPT x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
410-005	1/2	.042	3/8	1 13/32
410-007	3/4	.061	15/32	1 11/16
410-010	1	.110	19/32	1 7/8
410-012	1 1/4	.225	7/8	2 7/16
410-015	1 1/2	.223	1	2 3/16
410-020	2	.470	1 1/4	3 1/4

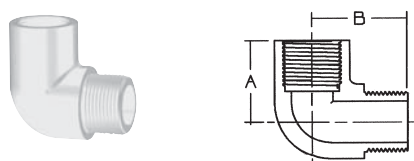
4607-2-3



90° Street Ell (Spq x FIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
411-005	1/2	.048	13/16	1 1/2
411-007	3/4	.071	13/16	1 1/2

4607-3-4



90° Street Ell (MIPT x FIPT)

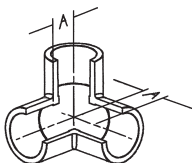
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
412-005	1/2	.049	17/32	1 13/32
412-007	3/4	.105	1 5/16	1 9/16
412-010	1	.118	1 9/16	1 27/32
412-012	1 1/4	.173	1 25/32	2 1/16
412-015	1 1/2	.224	2 1/2	2 11/16
412-020	2	.512	2 13/16	3 1/4

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

ELBOWS (Continued)

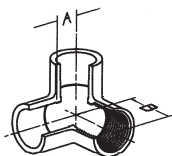
4607-9



90° Ell w/Side Outlet (Slip x Slip x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
413-005	1/2	.060	17/32

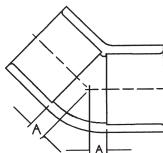
4607-9-3



90° Ell w/Side Outlet (Slip x Slip x FIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
414-005	1/2	.063	1/2	1 1/4
414-101	3/4 x 3/4 x 1/2	.090	9/16	1 1/4
414-130	1 x 1 x 1/2	.133	11/16	1 13/32

4606

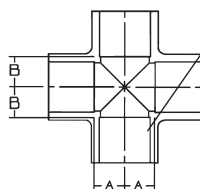


45° Ell (Slip x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
417-005	1/2	.037	1/4
417-007	3/4	.065	5/16
417-010	1	.098	11/32
417-012	1 1/4	.148	3/8
417-015	1 1/2	.191	7/16
417-020	2	.281	5/8
417-025	2 1/2	.676	11/16
417-030	3	.940	3/4
417-040	4	1.628	1
417-050	5	3.250	1 3/4
417-060	6	5.854	1 3/4
417-080	8	12.615	2
417-100	10	13.790	2 5/8
417-120	12	22.890	3 3/32

CROSSES

4635



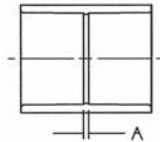
Cross (All Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
420-005	1/2	.076	1/2	1/2
420-007	3/4	.131	9/16	9/16
420-010	1	.180	11/16	11/16
420-012	1 1/4	.297	29/32	29/32
420-015	1 1/2	.377	1 1/32	1 1/32
420-020	2	.539	1 9/32	1 9/32
420-025	2 1/2	1.590	1 1/2	1 1/2
420-030	3	2.400	1 13/16	1 13/16
420-040	4	4.140	2 5/16	2 5/16

Do not use or test the products in this catalog with compressed air or other gasses.

COUPLINGS

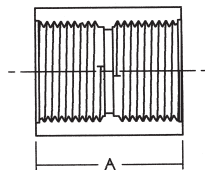
4601



Coupling (Slip x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
429-005	1/2	.032	3/32
429-007	3/4	.049	3/32
429-010	1	.080	3/32
429-012	1 1/4	.121	3/32
429-015	1 1/2	.149	3/32
429-020	2	.200	3/32
429-025	2 1/2	.648	3/16
429-030	3	.570	3/16
429-040	4	.919	3/16
429-050	5	1.933	1/4
429-060	6	2.100	1/4
429-080	8	5.100	1/4
429-100	10	8.533	1/2
429-120	12	14.490	1/2

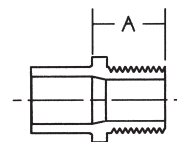
4601-3-3



Coupling (FIPT x FIPT)

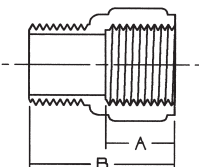
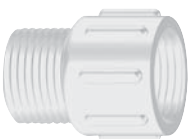
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
430-005	1/2	.037	1 1/2
430-007	3/4	.047	1 7/32
430-010	1	.160	2 1/16
430-073	1/2 x 3/8	.054	1 11/16

ADAPTERS



Male Fitting Adapter (Spg x MIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
433-005	1/2	.025	29/32
433-007	3/4	.036	13/16



Riser Extender (MIPT x FIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
434-005	1/2	.045	11/16	2 1/16
434-007	3/4	.110	13/16	1 19/32
434-010	1	.175	7/8	1 15/16

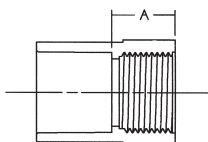
◆ Consult technical services for dimensions

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

ADAPTERS (Continued)

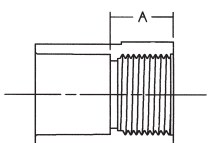
4603



Female Adapter (Slip x FIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
435-005	1/2	.038	13/16
435-007	3/4	.051	13/16
435-010	1	.082	3/32
435-012	1 1/4	.108	1
435-015	1 1/2	.132	1
435-020	2	.180	1
435-025	2 1/2	.624	1 13/32
435-030	3	.548	1 1/2
435-040	4	.838	1 19/32
435-050	5	.750	5 3/32
435-060	6	2.535	5 3/4
435-080	8	5.000	2 1/4

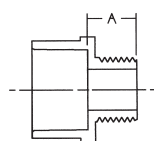
4603



Reducing Female Adapter (Slip x FIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
435-074	1/2 x 3/4	.038	13/16
435-075	1/2 x 1	.061	31/32
435-101	3/4 x 1/2	.045	13/16
435-102	3/4 x 1	.078	31/32
435-131	1 x 3/4	.065	5/8

4604



Male Adapter (MIPT x Slip)

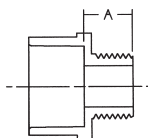
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
436-005	1/2	.027	7/8
436-007	3/4	.043	11/16
436-010	1	.072	7/8
436-012	1 1/4	.102	7/8
436-015	1 1/2	.126	29/32
436-020	2	.175	31/32
436-025	2 1/2	.351	1 1/2
436-030	3	.520	1 21/32
436-040	4	.846	1 3/4
436-060	6	2.500	2 1/4
436-080	8	4.040	2 1/4

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

ADAPTERS (Continued)

4604

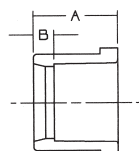


Reducing Male Adapter (MIPT X Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
436-074	1/2 x 3/4	.039	7/8
436-101	3/4 x 1/2	.029	7/8
436-102	3/4 x 1	.064	15/16
436-130	1 x 1/2	.046	1 ³ /32
436-131	1 x 3/4	.049	13/32
436-132	1 x 1 ¹ /4	.099	1 ¹ /8
436-168	1 ¹ /4 x 1	.112	1 ¹ /32
436-169	1 ¹ /4 x 1 ¹ /2	.157	13/16
436-212	1 ¹ /2 x 1 ¹ /4	.107	1 ¹ /32
436-213	1 ¹ /2 x 2	.173	1 ¹ /8
436-251	2 x 1 ¹ /2	.154	1 ¹ /16
436-252	2 x 2 ¹ /2	.525	1 ⁵ /16

BUSHINGS

4618



Bushing (Spig x Slip)

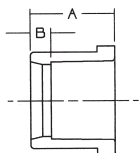
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
437-073	1/2 x 3/8	.010	15/16	1/4
437-101	3/4 x 1/2	.019	17/32	5/16
437-130	1 x 1/2	.046	1 ⁹ /32	1/2
437-131	1 x 3/4	.034	1 ⁹ /32	9/32
437-166	1 ¹ /4 x 1/2	.085	1 ⁷ /8	11/16
437-167	1 ¹ /4 x 3/4	.084	1 ¹ /2	3/4
437-168	1 ¹ /4 x 1	.061	1 ¹⁵ /16	13/32
437-209	1 ¹ /2 x 1/2	.140	1 ¹⁷ /32	5/8
437-210	1 ¹ /2 x 3/4	.114	1 ¹ /2	17/32
437-211	1 ¹ /2 x 1	.111	1 ¹ /2	7/16
437-212	1 ¹ /2 x 1 ¹ /4	.057	1 ¹ /2	1/4
437-247	2 x 1/2	.146	1 ¹¹ /16	25/32
437-248	2 x 3/4	.200	1 ⁹ /16	13/16
437-249	2 x 1	.158	1 ⁹ /16	1/2
437-250	2 x 1 ¹ /4	.170	1 ⁹ /16	5/16
437-251	2 x 1 ¹ /2	.131	1 ⁹ /16	1/4
437-287	2 ¹ /2 x 1/2	.320	1 ¹⁵ /16	1 ³ /32
437-288	2 ¹ /2 x 3/4	.320	1 ¹⁵ /16	31/32
437-289	2 ¹ /2 x 1	.330	1 ¹⁵ /16	27/32
437-290	2 ¹ /2 x 1 ¹ /4	.280	1 ¹⁵ /16	23/32
437-291	2 ¹ /2 x 1 ¹ /2	.330	1 ¹⁵ /16	19/32
437-292	2 ¹ /2 x 2	.201	1 ³¹ /32	19/32

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

BUSHINGS (Continued)

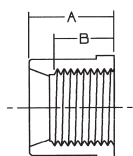
4618



Bushing (Spg x Slip) (continued)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
437-335	3 x 1	.655	2 ¹³ / ₃₂	19/32
437-336	3 x 1 ¹ / ₄	.736	1 ³¹ / ₃₂	11/16
437-337	3 x 1 ¹ / ₂	.688	2 ¹³ / ₃₂	1 ¹ / ₃₂
437-338	3 x 2	.417	2 ¹ / ₈	3/4
437-339	3 x 2 ¹ / ₂	.337	2 ¹ / ₈	11/32
437-420	4 x 2	.680	2 ¹ / ₂	11/8
437-421	4 x 2 ¹ / ₂	1.145	2 ¹⁵ / ₁₆	1 ¹ / ₃₂
437-422	4 x 3	.773	2 ¹ / ₂	19/32
437-488	5 x 3	1.250	3 ⁷ / ₃₂	27/32
437-490	5 x 4	1.270	3 ¹ / ₄	3/4
437-528	6 x 2	3.275	3 ¹ / ₃₂	19/16
437-530	6 x 3	2.000	3 ⁵ / ₁₆	15/16
437-532	6 x 4	2.169	3 ¹ / ₃₂	25/32
437-534	6 x 5	2.600	4	1
437-582	8 x 4	4.250	5 ³ / ₁₆	27/8
437-585	8 x 6	4.200	4 ⁹ / ₁₆	19/16
437-626	10 x 6	10.528	5 ⁵ / ₁₆	23/16
437-628	10 x 8	9.385	5 ⁵ / ₁₆	11/4
437-668	12 x 8	17.065	5 ⁵ / ₁₆	21/2
437-670	12 x 10	12.765	5 ⁷ / ₁₆	13/8

4618-3



Bushing (Spg x FIPT)

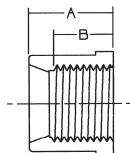
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
438-072	1/2 x 1/4	.010	1 ¹ / ₁₆	21/32
438-073	1/2 x 3/8	.010	15/16	1/4
438-098	3/4 x 1/4	.100	1 ⁹ / ₁₆	25/32
438-101	3/4 x 1/2	.026	2 ⁹ / ₃₂	11/16
438-130	1 x 1/2	.054	1 ¹ / ₄	11/16
438-131	1 x 3/4	.041	1 ¹ / ₁₆	23/32
438-166	1 ¹ / ₄ x 1/2	.141	1 ¹ / ₈	17/32
438-167	1 ¹ / ₄ x 3/4	.082	1 ¹ / ₈	9/16
438-168	1 ¹ / ₄ x 1	.099	1 ¹ / ₈	11/16
438-209	1 ¹ / ₂ x 1/2	.205	1 ²⁵ / ₃₂	15/32
438-210	1 ¹ / ₂ x 3/4	.097	1 ¹ / ₂	23/32
438-211	1 ¹ / ₂ x 1	.164	1 ¹ / ₂	7/8
438-212	1 ¹ / ₂ x 1 ¹ / ₄	.057	1 ¹ / ₂	29/32

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

BUSHINGS (Continued)

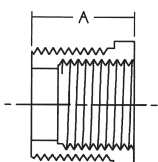
4618-3



Bushing (Spg x FIPT) (continued)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
438-247	2 x 1/2	.338	1 ¹¹ / ₃₂	17/32
438-248	2 x 3/4	.147	1 ⁹ / ₁₆	23/32
438-249	2 x 1	.292	1 ²⁹ / ₃₂	9/16
438-250	2 x 1 ¹ / ₄	.238	1 ²⁹ / ₃₂	19/32
438-251	2 x 1 ¹ / ₂	.130	1 ²⁹ / ₃₂	19/32
438-289	2 ¹ / ₂ x 1	.512	1 ¹¹ / ₃₂	11/16
438-291	2 ¹ / ₂ x 1 ¹ / ₂	.416	1 ¹¹ / ₃₂	23/32
438-292	2 ¹ / ₂ x 2	.297	2 ³ / ₁₆	5/8
438-335	3 x 1	.671	2 ⁷ / ₁₆	9/16
438-337	3 x 1 ¹ / ₂	.727	2 ⁷ / ₁₆	19/32
438-338	3 x 2	.668	2 ¹ / ₁₆	3/4
438-339	3 x 2 ¹ / ₂	.526	2 ⁷ / ₁₆	15/16
438-420	4 x 2	1.180	2 ¹³ / ₁₆	5/8
438-421	4 x 2 ¹ / ₂	1.476	3 ⁵ / ₁₆	1 ¹ / ₈
438-422	4 x 3	1.042	2 ¹³ / ₁₆	1 ¹ / ₃₂
438-490	5 x 4	1.750	3 ¹³ / ₃₂	1 ³ / ₃₂
438-532	6 x 4	2.920	3 ¹ / ₁₆	1 ³ / ₃₂

4618-3-4



Bushing (MIPT x FIPT)

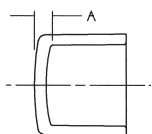
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
439-072	1/2 x 1/4	.016	15/16
439-098	3/4 x 1/4	.026	31/32
439-101	3/4 x 1/2	.030	31/32
439-130	1 x 1/2	.050	1 ¹ / ₈
439-131	1 x 3/4	.048	1 ¹ / ₈
439-166	1 ¹ / ₄ x 1/2	.068	1 ¹ / ₈
439-167	1 ¹ / ₄ x 3/4	.100	1 ¹ / ₈
439-168	1 ¹ / ₄ x 1	.090	1 ¹ / ₈
439-209	1 ¹ / ₂ x 1/2	.180	1 ¹ / ₄
439-210	1 ¹ / ₂ x 3/4	.160	1 ¹ / ₄
439-211	1 ¹ / ₂ x 1	.135	1 ¹ / ₄
439-212	1 ¹ / ₂ x 1 ¹ / ₄	.090	1 ¹ / ₄
439-249	2 x 1	.230	1 ¹⁵ / ₃₂
439-250	2 x 1 ¹ / ₄	.240	1 ⁷ / ₁₆
439-251	2 x 1 ¹ / ₂	.093	1 ¹ / ₈
439-338	3 x 2	.560	2 ¹ / ₃₂

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

CAPS

4617

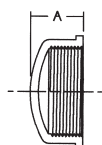


Cap (Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
447-005	1/2	.022	7/32
447-007	3/4	.034	7/32
447-010	1	.055	1/4
447-012	1 1/4	.095	1/4
447-015	1 1/2	.115	1/4
447-020	2	.169	9/32
447-025	2 1/2	.405	11/32
447-030	3	.469	15/16
447-040	4	.789	1 3/32
447-050	5	2.000	15/16
447-060	6	3.755	2
447-080	8	4.056	7/16

Consult Customer Service to determine if caps are flat or domed.

4617-3



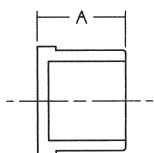
Cap (FIP)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
448-005	1/2	.025	27/32
448-007	3/4	.030	7/8
448-010	1	.055	1 1/32
448-012	1 1/4	.161	1 7/32
448-015	1 1/2	.094	1 3/4
448-020	2	.132	1 3/8
448-025	2 1/2	.455	2 15/16
448-030	3	.665	2 29/32
448-040	4	.755	3 1/4

Consult Customer Service to determine if caps are flat or domed.

PLUGS

4616



Plug (Spg)

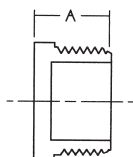
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
449-005	1/2	.028	1 5/32
449-007	3/4	.040	1 9/16
449-010	1	.070	1 11/32
449-012	1 1/4	.116	1 21/32
449-015	1 1/2	.167	1 25/32
449-020	2	.235	1 15/16
449-025	2 1/2	.310	2 3/32
449-030	3	.450	2 13/32
449-040	4	.680	2 13/32

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

PLUGS (Continued)

4616-4

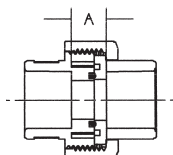


Plug (MIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
450-002	1/4	.007	23/32
450-005	1/2	.020	11/16
450-007	3/4	.030	13/32
450-010	1	.070	11/4
450-012	1 1/4	.108	1 1/8
450-015	1 1/2	.160	1 25/32
450-020	2	.220	1 15/16
450-025	2 1/2	.340	2 3/32
450-030	3	.495	2 13/32
450-040	4	.560	2 13/16

UNIONS

4633

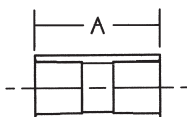


Union (Slip x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
457-015	1 1/2	.200	11/16
457-020	2	.500	25/32

NESTED COUPLING

4601-T-D

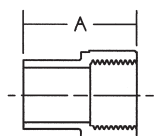


Nested Coupling (Slip x Slip)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
477-005	1/2	.033	1/2

FITTING ADAPTER

4603-2



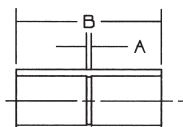
Female Fitting Adapter (Spg x FIPT)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES
478-005	1/2	.030	19/16
478-007	3/4	.043	1 13/16
478-010	1	.076	2 1/8
478-020	2	.182	2 11/32

Do not use or test the products in this catalog with compressed air or other gasses.

PVC Schedule 40 Pressure Fittings

DEEP SOCKET COUPLING



Deep Socket Coupling (Slip x Slip)

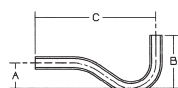
UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
482-007	3/4	.074	3/32	3

TRAPS



Running Trap (Spg x Spg)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
488-005	1/2	.163	1 ⁷ / ₈	10 ⁷ / ₈
488-007	3/4	.225	1 ⁷ / ₈	11 ¹ / ₈

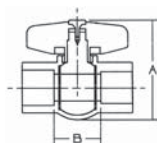


P-Trap (Spg x Spg)

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES	DIM. C INCHES
489-005	1/2	.163	1 ³ / ₄	3 ⁵ / ₈	8 ⁵ / ₁₆
489-007	3/4	.225	2	4 ¹ / ₃₂	8 ⁵ / ₈

VALVES

4660-S/4660-T



PVC Ball Valve (Cup, Female)

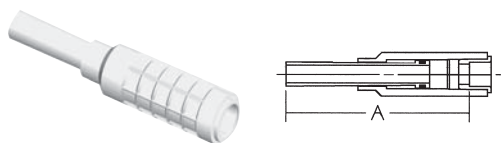
NOM. SIZE	APPROX. NET WT./LBS.	DIM. A INCHES	DIM. B INCHES
1/2	.180	2 ⁷ / ₁₆	1 ¹⁷ / ₃₂
3/4	.210	3 ¹ / ₁₆	1 ³ / ₄
1	.490	3 ²¹ / ₃₂	1 ¹⁵ / ₁₆
1 ¹ / ₄	.570	3 ⁷ / ₈	2
1 ¹ / ₂	.180	4 ¹⁷ / ₃₂	2 ³ / ₈
2	.150	5 ⁵ / ₁₆	2 ⁷ / ₈
2 ¹ / ₂	2.730	6 ⁵ / ₁₆	4 ¹⁷ / ₃₂
3	4.010	7 ¹ / ₂	5 ⁹ / ₃₂
4	8.290	9 ³ / ₁₆	7 ⁵ / ₁₆

Do not use or test the products in this catalog with compressed air or other gasses.

Plastic Irrigation Products

EXPANSION JOINT

FSF



Slip-Fix®

UNIV. FIG. NO.	NOM. SIZE	APPROX. NET WT./LBS.	A CLOSED	A OPEN
† FSF-050	1/2	.209	5 1/2	7 1/2
† FSF-075	3/4	.360	6	8
† FSF-100	1	.525	6 3/8	8 7/8
† FSF-125	1 1/4	.955	7 3/4	10 1/4
† FSF-150	1 1/2	1.205	8 1/8	11 1/8
† FSF-200	2	1.915	9 5/8	12 5/8
† FSF-250	2 1/2	2.765	11 1/4	15 1/4
† FSF-300	3	4.258	12 5/8	16 5/8
† FSF-400	4	6.452	13 3/4	17 3/4

Slip-Fix® is the fast, easy, leak-proof way to repair broken water lines. Slip-Fix is the original PVC Schedule 40 in-line repair coupling. It not only makes restoring a broken line simple, but it can also be used as a coupling for valve installations or for repairing lateral lines in a system.

PVC SCHEDULE 40 BALL VALVES

NIBCO PVC Schedule 40 Ball Valves are excellent for use in cold water pressure distribution systems in residential, commercial, agricultural and light industrial applications. Sizes range from 1/2" through 4" IPS. These valves feature a durable one-piece molded body, convenient quarter-turn action, and their 100 percent thermoplastic design eliminates process or atmospheric corrosion. PVC has excellent rigidity, corrosion and chemical resistance properties. PVC Schedule 40 Ball Valves are NSF approved and manufactured in an ISO 9002 certified facility. (Refer to page 56 for additional information)



PLASTIC FITTINGS



NIBCO PVC Schedule 40 Pressure Fittings are ideal for use in irrigation, golf course construction, pool & spa, potable water, and chilled-water applications. PVC, one of the most frequently specified of all thermoplastic materials, has a high resistance to corrosion and chemical attack by acids, alkalies, salt solutions, and many other chemicals.

ABS DWV fittings are used for residential and commercial drain, waste, and vent non-pressure applications. ABS is an excellent high strength, high-impact thermoplastic material, resistant to a wide variety of materials ranging from sewage to commercial household chemical formulations. ABS is lightweight, safe to handle and easy to install.

PVC DWV fittings have been used for over 30 years in residential and commercial drain, waste, and vent non-pressure applications. PVC DWV can be found in such areas as chemical processing, industrial plating, chilled water distribution, chemical drainage and irrigation systems.

Do not use or test the products in this catalog with compressed air or other gasses.

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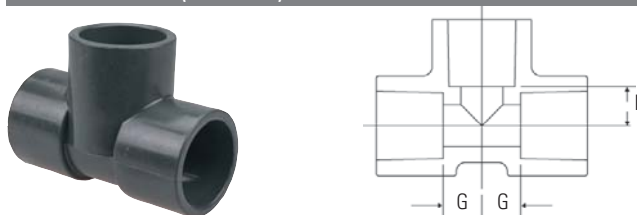
PVC Schedule 80

Chemtrol®

Tees

Chemtrol
Fig. No.

4511 Socket Tee (S x S x S)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. G	Dim. I
1/4	801-002	25	0.05	0.33	0.33	0.33
1/2	801-005	50	0.15	0.52	0.52	0.52
3/4	801-007	50	0.33	0.69	0.69	0.69
1	801-810	25	0.36	0.75	0.75	0.75
1 1/4	801-012	10	0.44	0.92	0.92	0.92
1 1/2	801-015	25	0.73	1.06	1.06	1.06
2	801-020	20	1.05	1.27	1.27	1.27
2 1/2	801-025	5	1.59	1.53	1.53	1.53
3	801-030	12	2.37	1.84	1.84	1.84
4	801-040	10	4.10	2.34	2.34	2.34
6	801-060	4	10.22	3.50	3.50	3.50
8	801-080	1	21.05	4.56	4.56	4.56
10	801-100	1	35.40	5.75	5.75	5.75
12	801-120	1	58.40	6.89	6.89	6.89

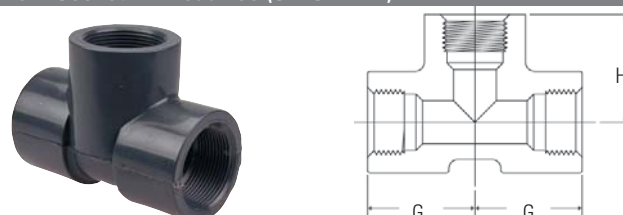
4511 Reducing Socket Tee (S x S x S)

Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. G	Dim. I
3/4 x 3/4 x 1/2	801-101	25	0.18	0.52	0.52	0.62
1 x 1 x 1/2	801-130	10	0.24	0.53	0.53	0.73
1 x 1 x 3/4	801-131	10	0.26	0.63	0.63	0.74
1 1/2 x 1 1/2 x 3/4	801-210	10	0.48	0.67	0.67	1.05
1 1/2 x 1 1/2 x 1	801-211	10	0.52	0.77	0.77	1.04
2 x 2 x 1/2	801-247	10	0.61	0.61	0.61	1.30
2 x 2 x 3/4	801-248	10	0.65	0.71	0.71	1.30
2 x 2 x 1	801-249	10	0.69	0.81	0.81	1.30
2 x 2 x 1 1/2	801-251	10	0.83	1.08	1.08	1.30
3 x 3 x 2	801-338	5	1.73	1.37	1.37	1.86
4 x 4 x 2	801-420	5	2.79	1.40	—	—
4 x 4 x 3	801-422	5	3.33	—	—	—
6 x 6 x 4	801-532	4	7.20	—	—	—

Flanged fitting center-to-face dimensions may be found on page 12. When ordering, specify the figure number and the nominal size (e.g., 2" Schedule 80 PVC flanged tee—4511-12 2").

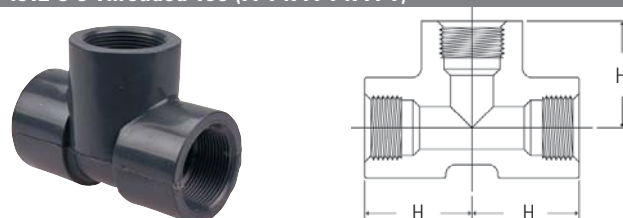
Chemtrol
Fig. No.

4512 Socket x Thread Tee (S x S x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. G	Dim. H
1/2	802-005	10	0.16	0.52	0.52	1.41
3/4	802-007	10	0.24	0.69	0.69	1.71
1	802-010	10	0.34	0.75	0.75	1.89
1 1/4	802-012	10	0.57	0.92	0.92	2.18
1 1/2	802-015	10	0.80	1.06	1.06	2.45
2	802-020	10	1.13	1.27	1.27	2.78

4512-3-3 Threaded Tee (FPT x FPT x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. H
1/4	805-002	25	0.05	0.97
1/2	805-005	25	0.16	1.41
3/4	805-007	25	0.26	1.71
1	805-010	25	0.40	1.89
1 1/4	805-012	10	0.57	2.18
1 1/2	805-015	10	0.80	2.45
2	805-020	10	1.13	2.78
2 1/2	805-025	5	1.79	3.31
3	805-030	5	2.60	3.74
4	805-040	5	4.63	4.62

For questions concerning thermoplastic piping systems, please contact Chemtrol Customer Service

Ph: 888.446.4226

Fax: 888.336.4226

Do not use or test the products in this section of the catalog with compressed air or other gases.

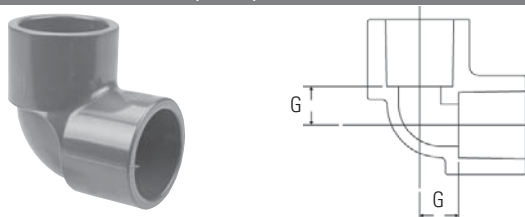
PVC Schedule 80

Chemtrol®

Elbows

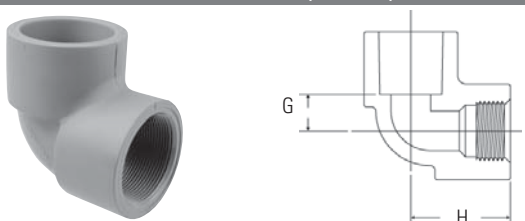
Chemtrol
Fig. No.

4507 Socket 90° ELL (S x S)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G
1/4	806-002	25	0.01	0.33
1/2	806-005	50	0.11	0.52
3/4	806-007	50	0.16	0.69
1	806-010	50	0.21	0.75
1 1/4	806-012	25	0.30	0.92
1 1/2	806-015	25	0.50	1.06
2	806-020	25	0.75	1.27
2 1/2	806-025	5	1.16	1.53
3	806-030	12	1.82	1.84
4	806-040	12	3.17	2.34
6	806-060	4	7.70	3.50
8	806-080	2	15.57	4.56
10	806-100	1	27.70	5.75
12	806-120	1	43.90	6.89

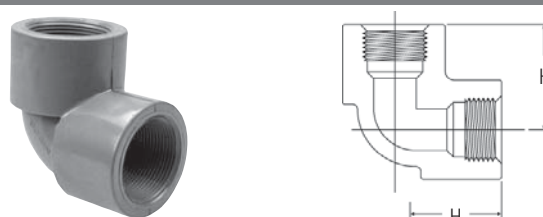
4507-3 Socket x Thread 90° ELL (S x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. H
1/2	807-005	10	0.12	0.52	1.41
3/4	807-007	10	0.17	0.69	1.71
1	807-010	10	0.28	0.75	1.89
1 1/4	807-012	10	0.33	0.92	2.18
1 1/2	807-015	10	0.55	1.06	2.45
2	807-020	10	0.82	1.27	2.78

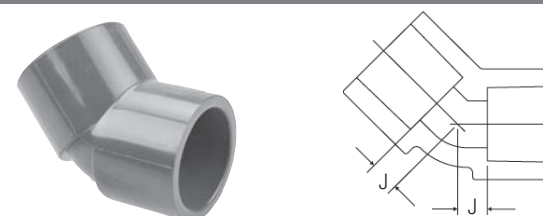
Chemtrol
Fig. No.

4507-3-3 Thread 90° ELL (FPT x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. H
1/4	808-002	25	0.04	0.97
1/2	808-005	25	0.12	1.41
3/4	808-007	25	0.18	1.71
1	808-010	25	0.28	1.89
1 1/4	808-012	10	0.33	2.18
1 1/2	808-015	10	0.55	2.45
2	808-020	10	0.82	2.78
2 1/2	808-025	5	1.25	3.31
3	808-030	5	1.90	3.74
4	808-040	5	3.62	4.62

4506 Socket 45° ELL (S x S)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. J
1/4	817-002	15	0.03	0.18
1/2	817-005	25	0.04	0.26
3/4	817-007	25	0.14	0.33
1	817-010	25	0.15	0.37
1 1/4	817-012	10	0.30	0.43
1 1/2	817-015	10	0.41	0.47
2	817-020	10	0.62	0.61
2 1/2	817-025	5	0.93	0.68
3	817-030	6	1.39	0.78
4	817-040	6	2.46	1.02
6	817-060	4	5.82	1.75
8	817-080	2	12.67	2.22
10	817-100	1	19.70	2.61
12	817-120	1	32.70	3.08

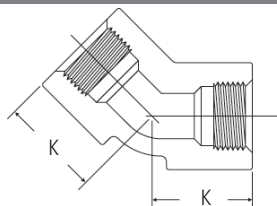
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Chemtrol
Fig. No.

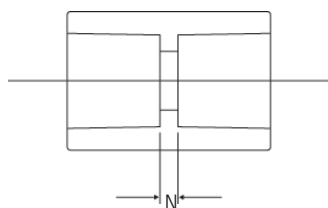
4506-3-3 Thread 45° ELL (FPT x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. K
1/4	819-002	15	0.04	0.82
1/2	819-005	25	0.11	1.15
3/4	819-007	25	0.13	1.35
1	819-010	25	0.25	1.51
1 1/4	819-012	10	0.35	1.70
1 1/2	819-015	10	0.48	1.86
2	819-020	10	0.71	2.13
2 1/2	819-025	5	1.03	2.46
3	819-030	6	1.53	2.69
4	819-040	6	2.52	3.30

Couplings

4501 Socket Coupling (S x S)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. N
1/4	829-002	25	0.05	0.12
1/2	829-005	50	0.09	0.25
3/4	829-007	50	0.13	0.25
1	829-010	40	0.20	0.25
1 1/4	829-012	25	0.29	0.25
1 1/2	829-015	20	0.37	0.25
2	829-020	25	0.52	0.25
2 1/2	829-025	5	1.68	0.20
3	829-030	12	1.05	0.19
4	829-040	10	1.83	0.19
6	829-060	4	4.07	0.25
8	829-080	2	8.89	0.25
10	829-100	1	13.88	0.38
12	829-120	1	21.37	0.50

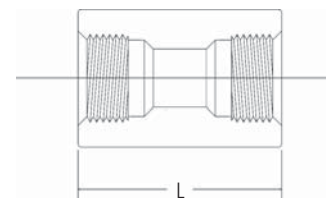
Chemtrol
Fig. No.

4501 Reducing Socket Coupling (S x S)

Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. N
3/4 x 1/2	829-101	25	0.12	0.44
1 x 1/2	829-130	25	0.18	0.67
1 x 3/4	829-131	25	0.19	0.55
1 1/4 x 3/4	829-167	25	0.26	0.72
1 1/4 x 1	829-168	10	0.27	0.60
1 1/2 x 3/4	829-210	10	0.31	0.76
1 1/2 x 1	829-211	10	0.33	0.63
1 1/2 x 1 1/4	829-212	10	0.50	0.51
2 x 1	829-249	10	0.44	0.75
2 x 1 1/2	829-251	10	0.50	0.50
3 x 2	829-338	5	1.00	1.24
4 x 2	829-420	5	1.59	1.59
4 x 3	829-422	5	1.88	1.20

Other Reducing Couplings are produced by solvent Reducer Bushings into Socket Couplings. They may be ordered as factory fabrications or may be assembled in the field.

4501-3-3 Thread Coupling (FPT x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. L
1/4	830-002	25	0.06	1.41
1/2	830-005	25	0.09	2.03
3/4	830-007	25	0.14	2.28
1	830-010	25	0.23	2.53
1 1/4	830-012	10	0.33	2.78
1 1/2	830-015	10	0.41	3.03
2	830-020	10	0.60	3.28
2 1/2	830-025	5	0.86	3.76
3	830-030	5	1.22	4.00
4	830-040	5	2.13	4.75

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PVC Schedule 80

Chemtrol®

Chemtrol
Fig. No.

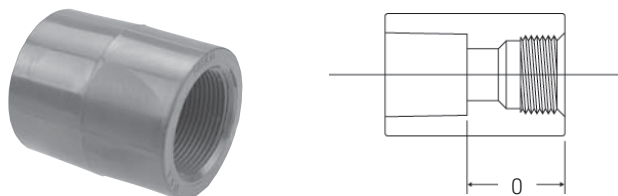
4501-3-3 Reducing Thread Coupling (FPT x FPT)

Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. L
3/4 x 1/2	830-101	25	0.09	2.34
1 x 1/2	830-130	25	0.20	2.70
1 x 3/4	830-131	25	0.18	2.70
1 1/4 x 3/4	830-167	10	0.29	3.00
1 1/4 x 1	830-168	10	0.31	3.00
1 1/2 x 3/4	830-210	10	0.35	3.16
1 1/2 x 1	830-211	10	0.38	3.16
1 1/2 x 1 1/4	830-212	10	0.40	3.16
2 x 1	830-249	10	0.50	3.40
2 x 1 1/2	830-251	10	0.56	3.40
3 x 2	830-338	5	1.15	4.66
4 x 2	830-420	5	1.79	5.38
4 x 3	830-422	5	2.11	5.38

Other Reducing Couplings are produced by solvent cementing appropriate Reducer Bushings into Socket Couplings. They may be ordered as factory fabrications or may be assembled in the field.

Adapters

4503 Female Adapter Coupling (S x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. O
1/4	835-002	15	0.04	0.77
1/2	835-005	25	0.09	1.14
3/4	835-007	25	0.14	1.27
1	835-010	20	0.21	1.39
1 1/4	835-012	10	0.30	1.52
1 1/2	835-015	10	0.38	1.64
2	835-020	10	0.56	1.77
2 1/2	835-025	5	0.77	1.98
3	835-030	5	1.15	2.10
4	835-040	5	1.95	2.47

For additional technical information, or a complete listing of Schedule 80 industrial plastic products, please refer to NIBCO's Chemtrol Fitting Guide, or visit our website at www.chemtrol.com.

Chemtrol
Fig. No.

4504 Male Adapter (S x MPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. OM
1/2	836-005	25	0.04	0.94
3/4	836-007	25	0.06	0.97
1	836-010	25	0.10	1.15
1 1/4	836-012	10	0.14	1.12
1 1/2	836-015	10	0.19	1.12
2	836-020	10	0.27	1.20
2 1/2	836-025	5	0.56	1.89
3	836-030	5	0.79	1.99
4	836-040	5	1.39	2.09

4550 Tank Adapter (Tank x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. OT	Dim. DO
1/2		15	0.17	1.38	1.40
3/4	Use	15	0.23	1.38	1.40
1	Figure	15	0.27	1.90	2.28
1 1/4	No. &	10	0.42	1.90	2.28
1 1/2	Nom.	10	0.34	2.19	3.00
2	Size	5	1.04	2.19	3.00
3		5	2.33	3.40	5.70

Note: Gasket is EPDM and nut is self-tightening left hand thread.

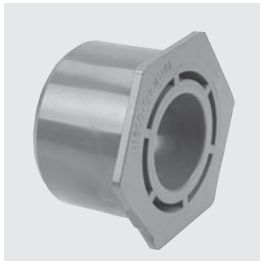
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PVC Schedule 80

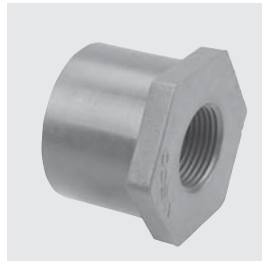
Bushings

Design Styles

The design style of most bushings is to have a solid wall between the inside and outside connections. Some of the multistep reductions with exceedingly thick cross-sections are not solid. This design style achieves structural support with a web of ribs attaching the inner and outer connection walls, with the open area toward the exterior bushing face. The styles are denoted by W and S for webbed and solid designs respectively.



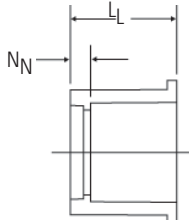
Webbed design



Solid design

Chemtrol
Fig. No.

4518 Flush Socket Reducer Bushing (SPG x S)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Design Style	Dim. L _L	Dim. N _N
1/2 x 1/4	837-072	50	0.03	S	1.17	0.53
3/4 x 1/2	837-101	50	0.05	S	1.15	0.26
1 x 1/2	837-130	50	0.06	S	1.28	0.39
1 x 3/4	837-131	50	0.05	S	1.28	0.27
1 1/4 x 1/2	837-166	10	0.10	S	1.41	0.52
1 1/4 x 3/4	837-167	10	0.05	S	1.41	0.40
1 1/4 x 1	837-168	10	0.06	S	1.41	0.27
1 1/2 x 1/2	837-209	25	0.12	W	1.53	0.64
1 1/2 x 3/4	837-210	25	0.10	S	1.53	0.52
1 1/2 x 1	837-211	25	0.08	S	1.53	0.39
1 1/2 x 1 1/4	837-212	10	0.06	S	1.53	0.27
2 x 1/2	837-247	25	0.25	S	1.66	0.77
2 x 3/4	837-248	25	0.25	S	1.66	0.65
2 x 1	837-249	25	0.25	W	1.66	0.52
2 x 1 1/4	837-250	10	0.22	W	1.66	0.40
2 x 1 1/2	837-251	25	0.20	W	1.66	0.27
2 1/2 x 1	837-289	10	0.31	W	1.94	0.80
2 1/2 x 1 1/4	837-290	10	0.31	W	1.94	0.68
2 1/2 x 1 1/2	837-291	10	0.27	S	1.94	0.55
2 1/2 x 2	837-292	10	0.24	S	1.94	0.43
3 x 1	837-335	10	0.65	W	2.42	1.28
3 x 1 1/2	837-337	10	0.67	W	2.42	1.03
3 x 2	837-338	10	0.64	S	2.42	0.91
3 x 2 1/2	837-339	10	0.48	S	2.42	0.64

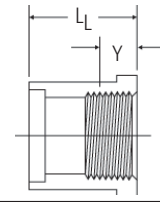
Chemtrol
Fig. No.

4518 Flush Socket Reducer Bushing (SPG x S) (cont.)

Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Design Style	Dim. L _L	Dim. N _N
4 x 2	837-420	10	1.14	W	2.81	1.30
4 x 2 1/2	837-421	5	1.14	W	2.81	1.03
4 x 3	837-422	10	0.93	S	2.81	0.91
6 x 2	837-528	5	3.28	W	3.06	1.55
6 x 4	837-532	10	2.68	S	3.06	0.78
8 x 6	837-585	3	5.51	S	4.59	1.56
10 x 6	837-626	1	10.68	W	5.59	2.56
10 x 8	837-628	1	9.36	S	5.59	1.09
12 x 8	837-668	1	16.73	W	6.59	2.09
12 x 10	837-670	1	12.77	S	6.59	1.09

Other Reducing Couplings are produced by solvent Reducer Bushings into Socket Couplings. They may be ordered as factory fabrications or may be assembled in the field.

4518-3 Flush Spigot x Thread Reducer Bushing (SPG x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Design Style	Dim. L _L	Dim. Y*
1/2 x 1/4	838-072	50	0.03	S	1.17	0.31
3/4 x 1/4	838-098	50	0.04	S	1.29	0.31
3/4 x 1/2	838-101	50	0.03	S	1.29	0.43
1 x 1/2	838-130	50	0.07	S	1.56	0.43
1 x 3/4	838-131	50	0.05	S	1.56	0.45
1 1/4 x 1/2	838-166	10	0.14	S	1.66	0.43
1 1/4 x 3/4	838-167	10	0.12	S	1.66	0.45
1 1/4 x 1	838-168	10	0.10	S	1.66	0.53
1 1/2 x 1/2	838-209	10	0.21	S	1.78	0.43
1 1/2 x 3/4	838-210	10	0.19	S	1.78	0.45
1 1/2 x 1	838-211	5	0.17	S	1.78	0.53
1 1/2 x 1 1/4	838-212	10	0.12	S	1.78	0.55
2 x 1/2	838-247	10	0.34	S	1.92	0.43
2 x 3/4	838-248	10	0.32	S	1.92	0.45
2 x 1	838-249	10	0.29	S	1.92	0.53
2 x 1 1/4	838-250	10	0.24	S	1.92	0.55
2 x 1 1/2	838-251	10	0.20	S	1.92	0.55
2 1/2 x 2	838-292	5	0.25	S	2.18	0.57
3 x 1	838-335	5	0.65	S	2.42	0.53
3 x 1 1/2	838-337	5	0.70	S	2.42	0.55
3 x 2	838-338	5	0.67	S	2.42	0.57
3 x 2 1/2	838-339	5	0.52	S	2.42	0.87
4 x 2	838-420	5	1.17	S	2.81	0.57
4 x 3	838-422	5	1.01	S	2.81	0.95

Other size reductions are produced by solvent cementing appropriate Reducer Bushings together. They may be ordered as factory fabrications or may be assembled in the field.

*Typical male component engagement, hand tight (L_L in ANSI B1.20.1 thread spec.) plus 1 1/2 turns.

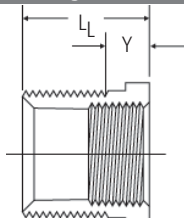
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Fig. No.

4518-3-4 Flush Thread Reducer Bushing (MPT x FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Design Style	Dim. L1	Dim. Y*
1/2 x 1/4	839-072	50	0.02	S	0.93	0.25
3/4 x 1/4	839-098	50	0.03	S	0.95	0.25
3/4 x 1/2	839-101	50	0.02	S	0.95	0.25
1 x 1/2	839-130	50	0.05	S	1.24	0.38
1 x 3/4	839-131	50	0.03	S	1.24	0.38
1 1/4 x 1/2	839-166	10	0.10	S	1.27	0.38
1 1/4 x 3/4	839-167	10	0.09	S	1.27	0.38
1 1/4 x 1	839-168	10	0.07	S	1.27	0.38
1 1/2 x 1/2	839-209	10	0.15	S	1.28	0.38
1 1/2 x 3/4	839-210	10	0.14	S	1.28	0.38
1 1/2 x 1	839-211	5	0.12	S	1.28	0.38
1 1/2 x 1 1/4	839-212	10	0.08	S	1.28	0.38
2 x 1/2	839-247	10	0.23	S	1.32	0.38
2 x 3/4	839-248	10	0.22	S	1.32	0.38
2 x 1	839-249	10	0.20	S	1.32	0.38
2 x 1 1/4	839-250	10	0.16	S	1.32	0.38
2 x 1 1/2	839-251	10	0.12	S	1.32	0.38
2 1/2 x 2	839-292	5	0.21	S	2.18	0.57
3 x 1 1/2	839-337	5	0.58	S	2.42	0.55
3 x 2	839-338	5	0.56	S	2.42	0.57
3 x 2 1/2	839-339	5	0.45	S	2.42	0.87
4 x 2	839-420	5	1.09	S	2.81	0.57
4 x 3	839-422	5	0.81	S	2.81	0.95

Other size reductions are produced by solvent cementing appropriate Reducer Bushings together. They may be ordered as factory fabrications or may be assembled in the field.

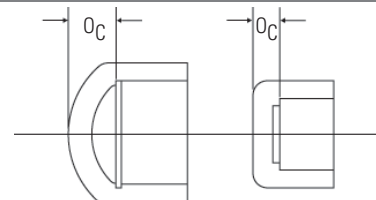
*Typical male component engagement, hand tight (L1 in ANSI B1.20.1 thread spec.) plus 1 1/2 turns

For additional technical information, or a complete listing of Schedule 80 industrial plastic products, please refer to NIBCO's Chemtrol Fitting Guide, or visit our website at www.chemtrol.com.

Caps

Chemtrol
Fig. No.

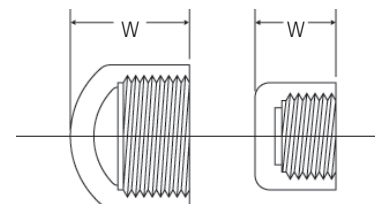
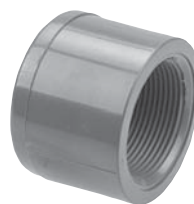
4517 Socket Cap* (S)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. Oc
1/4	847-002	15	0.03	0.25
1/2	847-005	25	0.06	0.39
3/4	847-007	25	0.08	0.37
1	847-010	25	0.14	0.41
1 1/4	847-012	10	0.20	0.40
1 1/2	847-015	10	0.26	0.41
2	847-020	10	0.38	0.42
2 1/2	847-025	5	0.57	0.57
3	847-030	5	0.87	1.29
4	847-040	5	1.53	1.58
6	847-060	5	3.77	2.13

*Sizes 2" and smaller are flat; 2 1/2" and larger are domed.

4517-3 Thread Cap* (FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. W
1/4	848-002	15	0.01	0.89
1/2	848-005	25	0.06	1.28
3/4	848-007	25	0.10	1.38
1	848-010	25	0.15	1.55
1 1/4	848-012	10	0.22	1.66
1 1/2	848-015	10	0.29	1.80
2	848-020	10	0.41	1.93
2 1/2	848-025	5	0.64	2.35
3	848-030	5	0.93	3.19
4	848-040	5	1.73	3.86

*Sizes 2" and smaller are flat; 2 1/2" and larger are domed.

Do not use or test the products in this section of the catalog with compressed air or other gases.

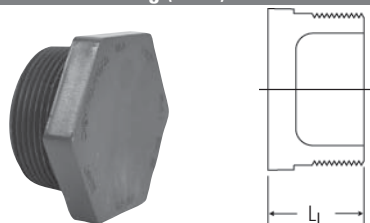
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Plugs

Chemtrol
Fig. No.

4516-4 Thread Plug (MPT)



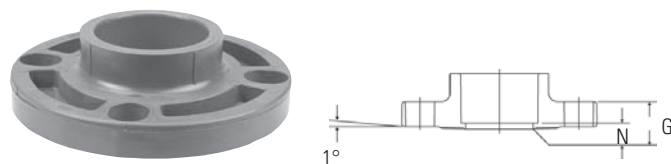
Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. L
1/4	850-002	25	0.01	0.85
1/2	850-005	50	0.03	1.04
3/4	850-007	50	0.03	1.10
1	850-010	25	0.06	1.25
1 1/4	850-012	10	0.09	1.27
1 1/2	850-015	10	0.12	1.28
2	850-020	10	0.18	1.32
2 1/2	850-025	5	0.29	2.18
3	850-030	5	0.51	2.42
4	850-040	5	0.95	2.81

1/4" Plug is solid, only

Class 150 Flanges

For flange dimensions that comply with ANSI B16.5, 150 lb., steel flanges, see page 87.

4551-W Socket Flange (S), One-Piece (Webbed Design)



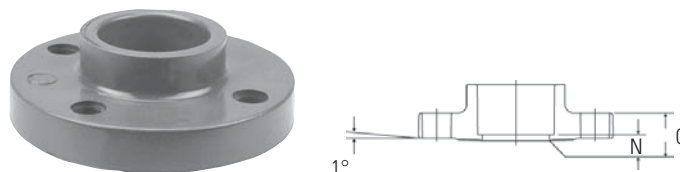
Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. N
2	851-020	12	0.79	0.92	0.27
3	851-030	10	1.60	1.13	0.29
4	851-040	10	2.42	1.24	0.32
6	851-060	5	3.69	1.36	0.31

Reducing Flanges are produced by solvent cementing Reducer Bushings into Socket Flanges. They may be ordered as factory fabrications or may be assembled in the field.

Note: One-piece webbed flanges have oblong bolt holes which permit mating with ANSI B16.5, 150 lb.; BS 1560, class 150; ISO 2084, PN10; and DIN 2532, PN10 flanges.

Chemtrol
Fig. No.

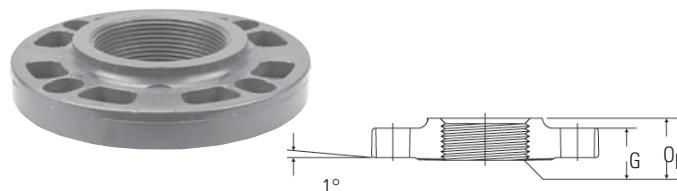
4551-H Socket Flange (S), One-Piece (Solid)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. N
1/2	851-H05	10	0.21	0.54	0.20
3/4	851-H07	10	0.31	0.61	0.17
1	851-H10	24	0.41	0.68	0.18
1 1/4	851-H12	10	0.53	0.73	0.20
1 1/2	851-H15	12	0.68	0.82	0.23
2	851-H20	12	1.03	0.92	0.27
2 1/2	851-H25	5	1.61	1.02	0.20
3	851-H30	10	2.08	1.13	0.29
4	851-H40	10	3.14	1.24	0.32
6	851-H60	5	4.79	1.36	0.31
8	851-H80	2	8.67	1.50	0.35

Reducing Flanges are produced by solvent cementing Reducer Bushings into Socket Flanges. They may be ordered as factory fabrications or may be assembled in the field.

4551-W-3 Thread Flange (FPT), One-Piece (Webbed Design)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. O_F
2	852-020	10	0.78	0.92	1.18
3	852-030	5	1.54	1.13	1.55
4	852-040	5	2.25	1.24	1.67

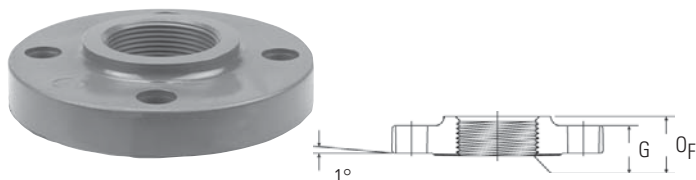
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Chemtrol
Fig. No.

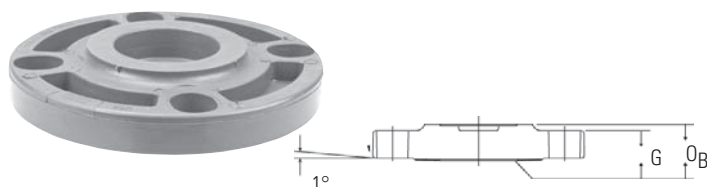
4551-H-3 Thread Flange (FPT), One-Piece (Solid)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. OF
1/2	852-H05	10	0.21	0.54	0.88
3/4	852-H07	10	0.30	0.61	0.91
1	852-H10	10	0.40	0.68	1.08
1 1/4	852-H12	10	0.50	0.73	1.11
1 1/2	852-H15	12	0.65	0.82	1.12
2	852-H20	10	0.97	0.92	1.18
2 1/2	852-H25	5	1.50	1.02	1.42
3	852-H30	5	1.93	1.13	1.55
4	852-H40	5	2.80	1.24	1.67

Reducing Flanges are produced by solvent cementing Reducer Bushings into Socket Flanges. They may be ordered as factory fabrications or may be assembled in the field.

4519-W Blind Flange, One-Piece (Webbed Design)



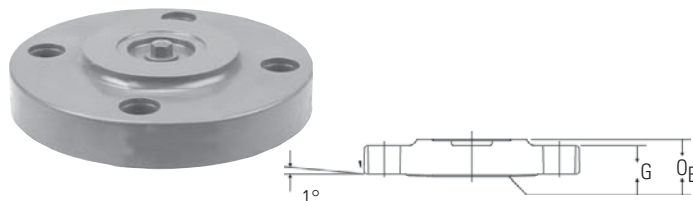
Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. OB
2	853-020	12	0.78	0.92	1.13
3	853-030	10	1.76	1.13	1.39
4	853-040	5	2.56	1.24	1.51
6	853-060	5	4.51	1.36	1.60

Note: One-piece webbed flanges have oblong bolt holes which permit mating with ANSI B16.5, 150 lb.; BS 1560, class 150; ISO 2084, PN10; and DIN 2532, PN10 flanges.

For additional technical information, or a complete listing of Schedule 80 industrial plastic products, please refer to NIBCO's Chemtrol Fitting Guide, or visit our website at www.chemtrol.com.

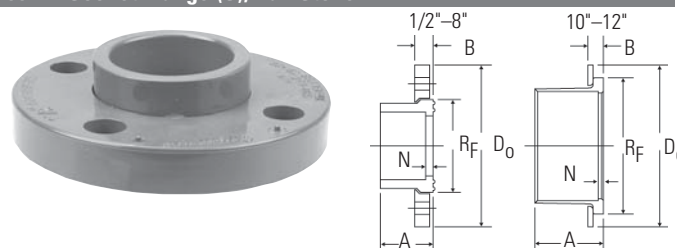
Chemtrol
Fig. No.

4519-H Blind Flange, One-Piece (Solid)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. G	Dim. OB
1/2	853-H05	10	0.21	0.54	0.76
3/4	853-H07	10	0.32	0.61	0.83
1	853-H10	10	0.43	0.68	0.88
1 1/4	853-H12	10	0.57	0.73	0.95
1 1/2	853-H15	12	0.69	0.82	1.04
2	853-H20	12	1.08	0.92	1.13
2 1/2	853-H25	5	1.81	1.02	1.22
3	853-H30	10	2.45	1.13	1.39
4	853-H40	5	3.56	1.24	1.51
6	853-H60	5	6.27	1.36	1.60
8	853-H80	2	10.35	1.50	1.78

4551-A Socket Flange (S), Van Stone



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. A	Dim. B	Dim. D0	Dim. Rf	Dim. N
1/2	854-005	10	0.19	1.00	.50	3.50	1.48	0.11
3/4	854-007	10	0.24	1.13	.50	3.88	1.75	0.11
1	854-010	24	0.38	1.25	.56	4.25	2.04	0.11
1 1/4	854-012	10	0.40	1.38	.63	4.63	2.50	0.11
1 1/2	854-015	12	0.54	1.50	.69	5.00	2.78	0.11
2	854-020	12	0.92	1.63	.75	6.00	3.41	0.11
2 1/2	854-025	5	1.37	1.94	.94	7.00	4.11	0.16
3	854-030	10	1.75	2.40	1.05	7.50	4.81	0.50
4	854-040	10	2.65	2.76	1.16	8.98	6.19	0.48
6	854-060	5	4.53	3.56	1.29	11.00	7.97	0.53
8	854-080	2	12.20	5.01	1.42	13.50	10.45	0.51
10*	854-100	1	10.20	5.83	1.31	16.00	13.29	0.33
12*	854-120	1	17.53	7.45	1.70	19.00	16.00	0.45

*Aluminum ring with PVC coating.

Do not use or test the products in this section of the catalog with compressed air or other gases.

PVC Schedule 80

Chemtrol
Fig. No.

Van Stone Flange Assembly List

Item	Description	Material
1	Connector Hub	PVC
2	Flange Ring	PVC Coated Aluminum
3	Flange Ring	PVC

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Fig. No.

NR 51 Flange Gaskets, for Class 150 Flanges



Note: These gaskets are 1/8" thick, full face CR, 70 durometer.

Nominal Size	Part No.	Approx. Lbs./Ea.
1/2	Use Figure No. & Nom. Size	0.11
3/4		0.12
1		0.13
1 1/4		0.14
1 1/2		0.15
2		0.20
2 1/2		0.25
3		0.28
4		0.30
6		0.40
8		0.50
10		0.55
12		0.60

Flanged Fittings*— Fabricated from Molded Components

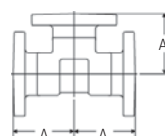


Fig. No. 4511-12
Flanged Tee

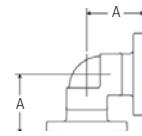


Fig. No. 4507-12
Flanged 90° ELL

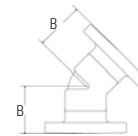


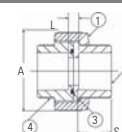
Fig. No. 4506-12
Flanged 45° ELL

Nominal Size	Approx. Lbs./Ea.	Dim. A	Approx. Lbs./Ea.	Dim. A	Approx. Lbs./Ea.	Dim. B
1	1.71	3 3/32	1.19	3 3/32	1.12	2 23/32
1 1/4	2.39	3 19/32	1.60	3 19/32	1.60	3 3/32
1 1/2	3.24	3 31/32	2.06	3 31/32	2.09	3 13/32
2	4.86	4 15/32	3.28	4 15/32	3.16	3 27/32
2 1/2	7.82	5 7/32	5.30	5 7/32	5.08	4 13/32
3	10.67	5 13/32	7.32	5 13/32	6.92	4 25/32
4	16.64	7 3/32	11.60	7 3/32	10.79	5 25/32
6	32.74	9 25/32	22.65	9 25/32	20.84	8 1/2
8	65.79	13 31/32	45.40	13 31/32	42.50	11 5/8

*Flanged fittings are produced by solvent cementing socket flanges to socket fittings with short plain end pipe nipples. They may be ordered as factory fabrications or may be assembled in the field.

Unions

4533 FKM / 4533E (EPDM) Socket Union (S x S)



Nominal Size	FKM Part No.	EPDM Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. A	Dim. L	Dim. S*
1/4	897-002	897E002	10	0.07	1.70	0.40	0.64
1/2	897-005	897E005	10	0.16	2.00	0.43	0.89
3/4	897-007	897E007	10	0.27	2.44	0.45	1.01
1	897-010	897E010	10	0.40	2.83	0.43	1.14
1 1/4	897-012	897E012	5	0.87	4.08	0.79	1.26
1 1/2	897-015	897E015	10	0.93	4.08	0.80	1.39
2	897-020	897E020	10	1.83	5.26	0.80	1.51
3	897-030	897E030	5	3.47	7.17	0.90	1.90

The 2 1/2" Socket Union is available as a fabrication from the 3" size Bushed down.

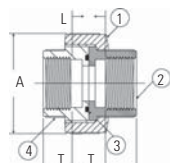
* Socket Depth

Do not use or test the products in this section of the catalog with compressed air or other gases.

PVC Schedule 80

Chemtrol
Fig. No.

4533-3-3 FKM / 4533E-3-3 (EPDM) Threaded Union (FPT x FPT)

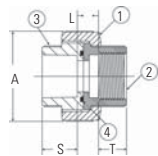


Nominal Size	FKM Part No.	EPDM Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. A	Dim. L	Dim. T*
1/4	898-002	898E002	10	0.11	1.70	1.07	0.31
1/2	898-005	898E005	10	0.16	2.00	1.30	0.43
3/4	898-007	898E007	10	0.28	2.44	1.38	0.45
1	898-010	898E010	10	0.41	2.83	1.51	0.53
1 1/4	898-012	898E012	5	0.90	4.08	2.01	0.55
1 1/2	898-015	898E015	10	0.92	4.08	2.16	0.55
2	898-020	898E020	10	1.82	5.26	2.36	0.57
3	898-030	898E030	5	3.47	7.17	2.88	0.95

The 2 1/2" Thread Union is available as a fabrication from the 3" size Bushed down.

* Thread Joint Engagement

4533E-3 FKM / 4533E-3 (EPDM) Female Adapter Union (S x FPT)



Nominal Size	FKM Part No.	EPDM Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. A	Dim. L	Dim. S*	Dim. T†
1/2	899-005	899E005	10	0.16	2.00	0.84	0.89	0.43
3/4	899-007	899E007	10	0.26	2.44	0.82	1.02	0.45
1	899-010	899E010	10	0.38	2.83	0.90	1.14	0.53
1 1/4	899-012	899E012	10	0.89	4.08	1.29	1.27	0.55
1 1/2	899-015	899E015	10	0.91	4.08	1.32	1.39	0.55
2	899-020	899E020	5	1.81	5.26	1.41	1.51	0.57
3	899-030	899E030	5	3.86	7.17	1.93	1.91	0.95

The 2 1/2" Socket x Thread Union is available as a fabrication from the 3" size Bushed down.

* Socket Depth

† Thread Joint Engagement

Transition Unions

Purchase and Assembly Instructions

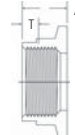
Transition Unions result from field assembly. First, the basic plastic Union is chosen, which includes selections for material of construction, O-ring type and connection style, remembering that the Union Nut screws onto the plastic Union Tailpiece. Next, the metal End Connector is chosen for material type and choice of thread connection style. Prior to installation, the mechanic must disassemble the Union, remove and discard the plastic End Connector, and then reassemble with the metal End Connector in its place.

For additional technical information, or a complete listing of Schedule 80 industrial plastic products, please refer to NIBCO's Chemtrol Fitting Guide, or visit our website at www.chemtrol.com.

Chemtrol®

Chemtrol
Fig. No.

TCBR-3 Brass End Connector (FPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. A	Dim. T*
1/2	Use Fig. No. & Nom. Size	1	0.33	1.02	0.43
3/4		1	0.43	1.02	0.45
1		1	0.52	1.19	0.53
1 1/4		1	0.85	1.42	0.55
1 1/2		1	1.81	1.42	0.55
2		1	2.74	1.57	0.57
3		1	5.45	2.25	0.95

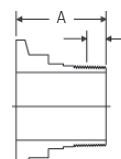
* Thread Joint Engagement

TCSS-3 Stainless Steel End Connector (FPT)

Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. A	Dim. T*
1/2	Use Fig. No. & Nom. Size	1	0.30	1.02	0.43
3/4		1	0.39	1.02	0.45
1		1	0.47	1.19	0.53
1 1/4		1	0.77	1.42	0.55
1 1/2		1	1.64	1.42	0.55
2		1	2.48	1.57	0.57
3		1	4.97	2.25	0.95

* Thread Joint Engagement

TCBR-4 Brass End Connector (MPT) Brass End Connector (MPT)



Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. A	Dim. T*
1/2	Use Fig. No. & Nom. Size	1	0.31	1.66	0.43
3/4		1	0.41	1.69	0.45
1		1	0.49	2.19	0.53
1 1/4		1	0.81	2.38	0.55
1 1/2		1	1.72	2.38	0.55
2		1	2.60	2.63	0.57
3		1	5.45	3.50	0.95

* Thread Joint Engagement

TCSS-4 Stainless Steel End Connector (MPT)

Nominal Size	Universal Part No.	Ctn. Qty.	Approx. Lbs./Ea.	Dim. A	Dim. T*
1/2	Use Fig. No. & Nom. Size	1	0.28	1.66	0.43
3/4		1	0.37	1.69	0.45
1		1	0.44	2.19	0.53
1 1/4		1	0.73	2.38	0.55
1 1/2		1	1.56	2.38	0.55
2		1	2.36	2.63	0.57
3		1	4.97	3.50	0.95

* Thread Joint Engagement

Do not use or test the products in this section of the catalog with compressed air or other gases.

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Pressure Ratings

Pipe and Tube

¹Based on water service, for more severe service, an additional correction factor may be required.

Maximum Non-Shock Operating Pressure (psi) AT 73°F ¹			
Nominal Size	Schedule 40 PVC	Schedule 80 PVC	CPVC-CTS SDR-11
3/8	620	920	400
1/2	600	850	400
3/4	480	690	400
1	450	630	400
1 1/4	370	520	400
1 1/2	330	470	400
2	280	400	400
2 1/2	300	425	N/A
3	260	375	N/A
4	220	325	N/A
6	180	280	N/A
8	160	250	N/A
10	140	230	N/A
12	130	230	N/A

NOTE: ABS & PVC DWV used for non-pressure applications only.

N. R. - Not Recommended.

N/A - Not Available.

Pipe and tube pressure ratings are based on non-shock service. As the severity of the service application increases, a service-correction factor should be considered. Specifically, for Schedule 40 applications that may experience severe cyclical-pressure loading, such as in irrigation systems, the following maximum-suggested design pressures are suggested.

Systems with threaded Schedule 80 thermoplastic fittings shall have a maximum-suggested design pressure of 50% that of equivalent pipe size pressure rating. This reduction is because threads are formed by the removal of material. Refer to the following table for maximum-suggested design pressures.

Conversely, CPVC-CTS pipe and fittings do carry the same pressure rating, as defined by ASTM D2846. Refer to the following table for maximum-suggested design pressures.

Fittings with Service Correction Factors

NOTE: ABS & PVC DWV used for non-pressure applications only.

Maximum-Suggested Design Pressure (psi) AT 73°F ¹			
Nominal Size	Schedule 40 PVC	Schedule 80 PVC	CPVC-CTS SDR-11
	Socket End	Threaded End	Socket End
3/8	370	460	400
1/2	360	420	400
3/4	280	340	400
1	270	320	400
1 1/4	220	260	400
1 1/2	200	240	400
2	170	200	400
2 1/2	180	210	N/A
3	155	190	N/A
4	130	160	N/A
6	110	N.R.	N/A
8	95	N.R.	N/A
10	85	N.R.	N/A
12	80	N.R.	N/A

N. R. - Not Recommended.

N/A - Not Available.

The maximum-allowable non-shock pressure rating for PVC and CPVC-CTS thermoplastic piping is a function of temperature. For pipe and fitting applications above 73°F, refer to the table below for Temperature Correction Factors. To determine the maximum non-shock pressure rating at an elevated temperature, simply multiply the base pressure rating obtained from the appropriate table by the correction factor from the following table. Below 73°F the pressure rating will be the same as the base pressure in the tables above.

Pressure Ratings (Continued)

Fittings Temperature Correction Factors

Operating Temperature, °F	FACTORS	
	PVC	CPVC-CTS
70	1.00	1.00
80	0.90	0.96
90	0.75	0.92
100	0.62	0.85
110	0.50	0.77
120	0.40	0.70
130	0.30	0.55
140	0.22	0.50
150	N.R.	0.47
160	N.R.	0.40
170	N.R.	0.32
180	N.R.	0.25
200	N.R.	0.18
210	N.R.	0.15

N.R. - Not Recommended.

Valves, Flanges, and Unions

The maximum pressure rating for NIBCO valves, flanges, and unions, regardless of size, is 150 psi at 73°F. As with all other thermoplastic piping components, the maximum non-shock operating pressure is related to temperature. Above 100°F refer to the chart below.

Temperature Correction Factors

Operating Temperature, °F	Maximum Non-Shock Operating Pressure, psi	
	PVC	CPVC
100	150	150
110	135	140
120	110	130
130	75	120
140	50	110
150	N.R.	100
160	N.R.	90
170	N.R.	80
180	N.R.	70
190	N.R.	60
200	N.R.	50

N.R. - Not Recommended

ABS & PVC-DWV Pipe & Fittings

NIBCO ABS 5800 series fittings conform to the material and dimensions of American Society for Testing and Materials, ASTM D 2661 and D 3311. ABS pipe meets the material requirements of ASTM D 3965 and the dimensions of ASTM D 2661.

NIBCO PVC 4800 series fittings are manufactured to meet the material and dimensional requirements of ASTM D 2665 and D 3311. PVC pipe is produced in compliance with ASTM D 2665 and D 1784.

NIBCO products have been designed to conform to the specifications listed above. Many of these products have been listed by and contain the mark of CSA, IAPMO, and NSF. For a current listing contact NIBCO INC.

ABS & PVC Schedule 40 Pipe Dimensions

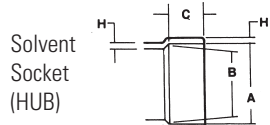
Nominal Size	Average O.D., in.	Average I.D., in.	Min. Wall Thickness, in.
1 1/4	1.660	1.380	0.140
1 1/2	1.900	1.610	0.145
2	2.375	2.067	0.154
3	3.500	3.068	0.216
4	4.500	4.026	0.237
6	6.625	6.065	0.280
8*	8.625	7.981	0.322
10*	10.750	10.020	0.365
12*	12.750	11.938	0.406

*These sizes of ABS pipe are not currently covered in ASTM D 2661.

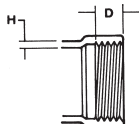
Pipe



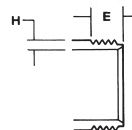
Dimensions of NIBCO ABS & PVC DWV Fitting Sockets, Threaded Ends and Male Ends



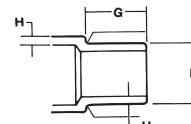
Internal (Female) Threads (FIPT)



External (Male) Threads (MIPT)



Spigot (Male) End (SPIG)



Nominal Size	A, avg.	B, avg.	C, min.	D	E	F	G, min.	H, min.
1 1/4	1.670	1.655	0.688	0.75	0.71	1.660	0.75	0.16
1 1/2	1.910	1.895	0.688	0.75	0.72	1.900	0.75	0.16
2	2.385	2.370	0.750	0.75	0.75	2.375	0.81	0.16
3	3.515	3.495	1.500	1.20	1.20	3.500	1.56	0.22
4	4.515	4.495	1.750	1.30	1.30	4.500	1.81	0.25
6	6.647	6.614	3.000	1.50	1.51	6.625	3.06	0.28
8	8.655	8.610	4.000	2.00	1.72	8.625	4.06	0.33
10	10.776	10.737	5.000	2.20	N/A	10.750	5.06	0.36
12	12.788	12.736	6.000	2.38	N/A	12.750	6.06	0.41

CPVC-CTS Copper Tube Size (SDR 11)

Tube and Fittings

Dimensions and Pressure Ratings

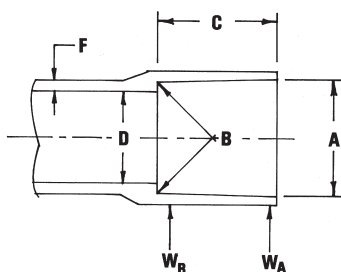
NIBCO CPVC-CTS tube and fittings are manufactured to the material and dimensional requirements of ASTM D 2846. Each product can be easily identified by the tan color. The outside diameter of the tube has the same dimension as the equivalent size copper tube; therefore, the product line is referred to as CPVC-CTS (Copper Tube Size).

The tube meets the dimensional requirements of SDR-11 (Standard Dimension Ratio). Through the ratio of tube O.D.-to-wall thickness, SDR design maintains the same pressure rating regardless of size. Tube dimensions and pressure ratings are shown below. All dimensions are in inches.

CPVC-CTS Tube Dimensions

Outside Diameter, Wall Thickness, and Tolerances for CPVC 4120, SDR 11 Plastic Tubing per ASTM D 2846

Nominal Size	Average Tubing O.D.	Tolerance on Average O.D.	Average Tubing I.D.	Wall Thickness	Tolerance on Wall
1/2	0.625	±0.003	0.489	0.060	+0.020
3/4	0.875	±0.003	0.715	0.080	+0.020
1	1.125	±0.003	0.921	0.102	+0.020
1 1/4	1.375	±0.003	1.125	0.125	+0.020
1 1/2	1.625	±0.004	1.329	0.148	+0.020
2	2.125	±0.004	1.739	0.193	+0.023



Fitting Dimensions

Nominal Size	Socket Entrance Dia., A		Socket Bottom Dia., B		C Min.	D Min.	WA Min.	WB Min.	F Min.
	Average	Tolerance	Average	Tolerance					
1/2	0.633	±0.003	0.619	±0.003	0.500	0.489	0.068	0.102	0.128
3/4	0.884	±0.003	0.870	±0.003	0.700	0.715	0.080	0.102	0.128
1	1.135	±0.003	1.121	±0.003	0.900	0.921	0.102	0.102	0.128
1 1/4	1.386	±0.003	1.372	±0.003	1.100	1.125	0.125	0.125	0.156
1 1/2	1.640	±0.004	1.622	±0.004	1.300	1.329	0.148	0.148	0.185
2	2.141	±0.004	2.123	±0.004	1.700	1.739	0.193	0.193	0.241

NOTE: NIBCO recommends the use of proper transition fittings when joining plastic to metal threaded fittings or pipe.

PVC Schedule 40 Pipe & Pressure Fittings

PVC Schedule 40 pipe and fittings are made for use in cold water systems where the temperature does not exceed 140°F. PVC Schedule 40 fittings are made in compliance with ASTM D 2466. Schedule 40 pipe meets the requirements of ASTM D 1785. Both the pipe and fittings are manufactured from material conforming to ASTM D 1784 and meeting cell Class 12454.

Schedule 40

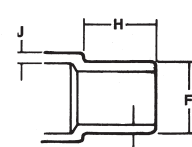
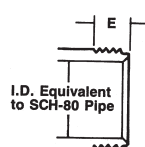
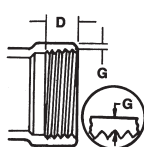
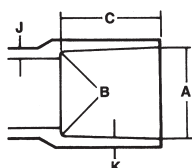
*Pipe Dimensions and References



(20 ft. lengths)

Nominal Size	Average Outside Diameter Inches	Average Inside Diameter Inches	Wall Thickness Inches		Pipe Wall Cross-Sectional Area Inches ²	Inside Diameter Area Inches ²
			Nom.	Min.		
1/2	0.840	0.602	0.119	0.109	0.270	0.285
3/4	1.050	0.804	0.123	0.113	0.358	0.508
1	1.315	1.029	0.143	0.133	0.527	0.832
1 1/4	1.660	1.360	0.150	0.140	0.712	1.453
1 1/2	1.900	1.590	0.155	0.145	0.850	1.986
2	2.375	2.047	0.164	0.154	1.139	3.291
2 1/2	2.875	2.445	0.215	0.203	1.797	4.695
3	3.500	3.042	0.229	0.216	2.353	7.268
4	4.500	3.998	0.251	0.237	3.351	12.554
6	6.625	6.031	0.297	0.280	5.904	28.567
8	8.625	7.942	0.341	0.322	8.887	49.539
10	10.750	9.976	0.387	0.365	12.599	78.164
12	12.750	11.889	0.430	0.406	16.662	111.015

Fittings¹



* Do not thread Schedule 40 pipe. Use appropriate fittings for threaded assembly.

Nominal Size	Average Outside Diameter Inches	Solvent Socket (Hub)			Internal Threads (FIPT)		External Threads (MIPT)	Male End (Spg)		Wall Thickness	
		A	B	C ² Min.	D	G Min.		F	H Min.	J ² Min.	K ² Min.
1/2	0.840	0.848	0.836	0.688	0.463	0.072	0.463	0.840	0.688	0.136	0.109
3/4	1.050	1.058	1.046	0.719	0.482	0.079	0.482	1.050	0.719	0.141	0.113
1	1.315	1.325	1.310	0.875	0.574	0.087	0.574	1.315	0.875	0.166	0.133
1 1/4	1.660	1.670	1.655	0.938	0.594	0.098	0.594	1.660	0.938	0.175	0.140
1 1/2	1.900	1.912	1.894	1.094	0.594	0.106	0.594	1.900	1.094	0.181	0.145
2	2.375	2.387	2.369	1.156	0.610	0.123	0.610	2.375	1.156	0.193	0.154
2 1/2	2.875	2.889	2.868	1.750	0.932	0.139	0.932	2.875	1.750	0.254	0.203
3	3.500	3.516	3.492	1.875	1.016	0.160	1.016	3.500	1.875	0.270	0.216
4	4.500	4.518	4.491	2.000	1.094	0.194	1.094	4.500	2.000	0.296	0.237
6	6.625	6.647	6.614	3.000	1.208	0.280	1.513	6.625	3.000	0.350	0.280
8	8.625	8.655	8.610	4.000	1.313	0.322	1.723	8.625	4.000	0.403	0.322
10	10.750	10.776	10.737	5.375	-	-	-	10.750	5.375	0.487	0.402
12	12.750	12.765	12.700	6.875	-	-	-	12.750	6.875	0.532	0.465

¹With exception of thread lengths, dimensions shown are listed in ASTM D 2466 for PVC Schedule 40 Fittings.

²NIBCO fittings may exceed certain minimum ASTM dimensional requirements shown in order to ensure functional satisfaction.

PVC Schedule 80 Pipe & Pressure Fittings

NIBCO/Chemtrol grey PVC Schedule 80 fittings are manufactured to applicable national standards, such as, ASTM D 2467, for threaded and socket-type fittings. Schedule 80 pipe meets the dimensional requirements of ASTM D 1785. Both Schedule 80 pipe and fittings meet cell Class 12454 as specified in ASTM D 1784.

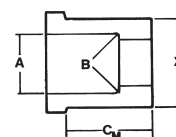
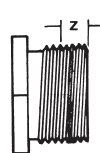
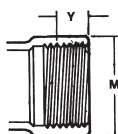
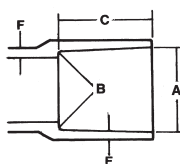
Schedule 80 Pipe Dimensions



(20 ft. lengths)

Nominal Size	Average Outside Diameter Inches	Average Inside Diameter Inches	Wall Thickness Inches		Pipe Wall Cross-Sectional Area Inches ²
			Nom.	Min.	
1/4	0.540	0.282	0.129	0.119	0.167
1/2	0.840	0.526	0.157	0.147	0.337
3/4	1.050	0.722	0.164	0.154	0.457
1	1.315	0.936	0.189	0.179	0.670
1 1/4	1.660	1.255	0.202	0.191	0.927
1 1/2	1.900	1.476	0.212	0.200	1.124
2	2.375	1.913	0.231	0.218	1.556
2 1/2	2.875	2.290	0.292	0.276	2.373
3	3.500	2.864	0.318	0.300	3.179
4	4.500	3.786	0.357	0.337	4.647
6	6.625	5.709	0.458	0.432	8.873
8	8.625	7.565	0.530	0.500	13.479
10	10.750	9.493	0.628	0.593	19.985
12	12.750	11.294	0.728	0.687	27.495

Fittings¹



Nominal Size	Average Outside Diameter Inches	Solvent Socket (Hub)			Internal Threads (FIPT)		External Threads (MIPT)	Male End (Spg)		Wall Thickness	
		A	B	C ² Min.	Y ²	M Min.		X	C _M Min.	F ² Min.	E ² Min.
1/4	0.540	0.552	0.536	0.625	0.339	0.840	0.339	0.540	0.625	0.149	0.119
1/2	0.840	0.848	0.836	0.875	0.463	1.280	0.463	0.840	0.875	0.185	0.147
3/4	1.050	1.058	1.046	1.000	0.482	1.500	0.482	1.050	1.000	0.195	0.154
1	1.315	1.325	1.310	1.125	0.574	1.810	0.574	1.315	1.125	0.225	0.179
1 1/4	1.660	1.670	1.655	1.250	0.594	2.200	0.594	1.660	1.250	0.240	0.191
1 1/2	1.900	1.912	1.894	1.375	0.594	2.500	0.594	1.900	1.375	0.250	0.200
2	2.375	2.387	2.369	1.500	0.610	3.000	0.610	2.375	1.500	0.275	0.218
2 1/2	2.875	2.889	2.868	1.750	0.932	3.560	0.932	2.875	1.750	0.345	0.276
3	3.500	3.516	3.492	1.875	1.016	4.300	1.016	3.500	1.875	0.375	0.300
4	4.500	4.518	4.491	2.250	1.094	5.430	1.094	4.500	2.250	0.420	0.337
6	6.625	6.647	6.614	3.000	N/A	N/A	N/A	6.625	3.000	0.540	0.432
8	8.625	8.655	8.610	4.000	N/A	N/A	N/A	8.625	4.000	0.625	0.500
10	10.750	10.798	10.725	5.500	N/A	N/A	N/A	N/A	N/A	0.741	0.593
12	12.750	12.785	12.725	7.000	N/A	N/A	N/A	N/A	N/A	0.859	0.687

¹Dimensions shown are listed in ASTM D 2467 for Threaded and Socket-Type Schedule 80 Fittings.

²Fittings may exceed certain minimum ASTM dimensional requirements shown in order to insure functional satisfaction.

General Storage, Handling, and Safety Considerations for Thermoplastic Piping Components

STORAGE

Thermoplastic piping components are designed and manufactured for use in systems involving the transport of aggressive liquids as well as potable water. In order to ensure their integrity, they must be handled with reasonable care prior to installation.

Pipe

When pipe is received in standard lifts it should remain in the lift until ready for use. Lifts should not be stacked more than three high and should always be stacked wood-on-wood. Loose pipe should be stored on racks with a minimum support spacing of three feet. Pipe should be shaded but not covered directly when stored outside in high ambient temperatures. This will provide for free circulation of air and reduce the heat build-up due to direct sunlight exposure.

Fittings

Fittings should be stored in their original cartons to keep them free of dirt and reduce the possibility of damage. If possible, fittings should be stored indoors.

Solvent Cements and Primers

Solvent cements have a definitive shelf life and each can and carton is clearly marked with a date of manufacture. Stock should be rotated to insure that the oldest material is used first.

HANDLING

Pipe and Fittings

Care should be exercised to avoid rough handling of thermoplastic pipe and fittings. They should not be dragged over sharp projections, dropped, or have objects dropped upon them. Pipe ends should be inspected for cracks resulting from such abuse. Transportation by truck or pipe trailer will require that the pipe be continuously supported and all sharp edges on the trailer bed that come in contact with the pipe must be padded.

Solvent Cements and Primers

Keep containers for solvent cements tightly closed except when in use. Avoid prolonged breathing of solvent vapors, and when pipe and fittings are being joined in partially enclosed areas use a ventilating device to attenuate vapor levels. Keep solvent cements, primers, and cleaners away from all sources of ignition, heat, sparks, and open flames. Avoid repeated

contact with the skin by wearing proper gloves impervious to the solvents. Application of the solvents or cements with rags and bare hands is not recommended; natural fiber brushes and other suitable applicators can produce satisfactory results.

IMPORTANT FACTS TO KNOW ABOUT ABS, PVC, AND CPVC SOLVENT CEMENT

1. ABS solvent cement should be used only for joining ABS pipe and fittings.
2. PVC solvent cement should be used only for joining PVC Pipe and fittings.
3. CPVC solvent cement should be used only for joining CPVC pipe and fittings.
4. A good joint is as strong as the pipe, since the solvent chemically welds the fitting to the pipe.
5. The solvent cement containers should always be covered when not in use to prevent excessive evaporation. Do not use thinner. Cement that shows signs of thickening and is lumpy should be discarded.
6. PVC solvent cement and primer can be used for both PVC pressure and DWV piping systems.

SAFETY CONSIDERATIONS

Pipe and Fittings

ABS, PVC, and CPVC products contained within this catalog are intended for use in the distribution of media that are chemically compatible with the piping materials. **Due to the inherent hazards associated with testing these components and piping systems with compressed air or other compressed gases, NIBCO does not allow pneumatic testing or use of these products in compressed air or gas piping systems.**

Note: pressurized (compressed) air and other compressed gases contain large amounts of stored energy, which present serious safety hazards should the system fail for any reason.

General Storage, Handling, and Safety Considerations for Thermoplastic Piping Components (continued)

Solvent Cements and Primers

DANGER:

- Solvent cements and primers are extremely flammable.
- Vapors from solvent cements and primers may be harmful if inhaled for prolonged periods of time.
- Solvent cements and primers may be harmful if swallowed.
- Solvent cements and primers may cause skin or eye irritation.

CAUTION: Solvent Cements and Primers are composed of various solvents and as such require special conditions for storage. Because of their flammability they must not be stored in an area where they might be exposed to ignition, heats, sparks, or open flames.

Solvent Welding Instructions for ABS, PVC, & CPVC-CTS Pressure & DWV Piping Systems

Scope

The solvent welding procedure detailed herein applies to all NIBCO ABS-DWV, PVC-DWV, PVC, and CPVC-CTS pressure piping systems including molded fittings and valves. Belled-end pipe and sewer pipe can also be joined in this manner. NIBCO TECHNICAL SERVICES is available for additional solvent-welding guidance and recommendations.

Joining Equipment and Materials

- Cutting Tool
- Rags (non-synthetic, i.e., cotton)
- Deburring Tool
- Cement and Primer Applicators
- Applicator Can or Bucket
- Purple Primer
- Solvent Cement
- Tool Tray
- Notched Boards

TYPES OF CEMENT

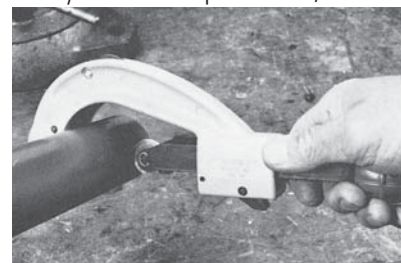
- PVC Solvent Cement - Light Duty Industrial Grade is for use with all Sch. 40, DWV and SDR pipe through 6".
- PVC Solvent Cement - Heavy Duty Industrial Grade is for use with all Sch. 80 and SDR pipe through 6".
- PVC Solvent Cement - Extra Heavy Duty Industrial Grade is for use with all PVC pipe 6" and larger.
- ABS Solvent Cement - For use in joining Sch. 40, SDR, and DWV pipe through 12" size.
- CPVC-CTS, Orange Colored Solvent Cement is for use with all sizes of Copper Tube Size tube and fittings.
- Purple Primer is for use with all PVC and CPVC pipe/tube and fittings.

NOTE: Do not take shortcuts - follow instructions completely.

PIPE/TUBE PREPARATION

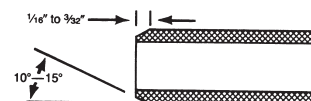
1. Cutting

Plastic pipe/tube can be easily cut with a powersaw, circular saw, band saw, or hand-saw. For best results, use a fine-toothed blade (16-18 teeth per inch) with little or no set (maximum 0.025 inch). A circumferential speed of about 6,000 ft./min. is suitable for circular saws; band saw speed should be approximately 3,000 ft./min. Carbide-tipped blades are preferable when quantities of pipe/tube are to be cut. To insure square-end cuts, a mitre box, hold-down, or jig should be used. Pipe or tubing cutters can be used for smaller diameter pipe/tube when the cutting wheel is specifically designed for plastic pipe.



2. Deburring and Beveling

All burrs, chips, filings, etc., should be removed from both the pipe/tube I.D. and O.D. before joining. Use a knife, deburring tool, or a half-round, coarse file to remove all burrs. All pipe/tube ends should be beveled to approximately the dimensions shown below for ease of socketing and to minimize the chances of wiping the solvent cement from the I.D. of the fitting as the pipe/tube is socketed:



The beveling can be done with a coarse file or a beveling tool such as that manufactured by Reed Manufacturing Company, Erie, Pennsylvania.

FITTING PREPARATION

Prior to solvent welding, all fittings and couplings should be removed from their cartons and exposed for at least one hour to the same temperature conditions as the pipe/tube in order to assure that they are thermally balanced before joining.

Solvent Welding Instructions for ABS, PVC, & CPVC-CTS Pressure & DWV Piping Systems (continued)

CLEANING

Using a clean, dry cotton rag, wipe away all loose dirt and moisture from the I.D. and O.D. of the pipe/tube end and the I.D. of the fitting. DO NOT ATTEMPT TO SOLVENT-WELD WET SURFACES.

DANGER: Solvent cements and primers are extremely flammable and harmful if swallowed. Vapors are harmful. May cause eye irritation and repeated or prolonged skin contact causes skin irritation.

Keep away from heat, sparks and open flame. Use only with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid prolonged breathing of vapor. Close container after each use.

FIRST AID: In case of skin contact, flush with water; for eyes, flush with water for at least 15 minutes and seek medical attention. Wash contaminated clothing before reuse. If swallowed, DO NOT INDUCE VOMITING, call a Physician immediately.

PRIMING

The function of purple primer is to penetrate and soften the bonding surfaces of PVC and CPVC pipe/tube and fittings. (Primer is not required with ABS.) It is a product that penetrates rapidly. It is very effective on the hard-finished, high-gloss products now being produced.

Apply primer to the pipe/tube with a paint brush approximately 1/2 of the pipe/tube diameter. A rag is not recommended as repeated contact with skin may cause irritation or blistering.

Apply primer freely in the socket, keeping surface and applicator wet and in motion 5 to 15 seconds. Redip applicator as necessary. Avoid puddling in the socket.



Apply again to the fitting socket. The second application is especially recommended for belled-end pipe and fittings fabricated from pipe stock, for many of them have especially hard inside-surfaces.

For checking penetration, you should be able to scratch or scrape a few thousandths of an inch of the primed surfaces away. Repeated application to either or both surfaces may be necessary. Weather conditions affect priming action. In cold weather more time is required for proper penetration.

NOTE: The pipe/tube ends can be rested on notched boards to keep them clean and for ease of solvent cement application.

Note: There are "one-step" cements available for CPVC that eliminate the need to use a primer. Cements approved for use with FlowGuard® Gold™ CPVC will produce pressure-tight joints when used with NIBCO CPVC pipe and fittings. NIBCO recommends that the use of "one-step" cements be limited to applications where established temperatures are 40°F or higher, following the cement manufacturer's instructions.

SOLVENT CEMENT APPLICATION

Using the proper applicator (see chart - page 158 for specific recommendations) proceed as follows:

1. Apply a full even layer of cement on the pipe O.D. for a distance slightly greater than the depth of the socket of the fitting.



2. Coat the fitting socket with a medium layer, avoiding puddling. On belled-end pipe or fabricated fittings, do not coat beyond the socket depth or allow cement to run beyond the bell.



3. Put a second full even layer on the pipe/tube O.D. Cement Layers must be without voids and sufficient to fill any gap in the joints.

Solvent Welding Instructions for ABS, PVC, & CPVC-CTS Pressure & DWV Piping Systems (continued)

HANDLING OF PRIMER AND CEMENT

NOTE: Observe the "use prior to" date. Cement has a limited shelf life. Do not permit solvent cement cans to stand open. Do not use cement that has dried to the point where it becomes lumpy and stringy. Dispose of properly. Do not attempt to thin out sluggish cement with thinner or primer. The solvents in the primer and cement are highly flammable, like a fast drying lacquer, and should not be used near an open flame. Use them in a well ventilated area and avoid prolonged breathing of the fumes. Prolonged contact with the skin could cause minor irritation.

JOINING

1. Immediately upon finishing cement application and before it starts to set, insert the pipe/tube to the full socket depth while rotating the pipe or fitting a 1/4 turn to insure complete and even distribution of the cement. Hold joint together for a minimum of 10 to 15 seconds to make sure that pipe/tube does not move or back out of the socket.



2. For pipe sizes 6" and larger, a joining crew consisting of two persons is recommended and the following additional steps necessary:
 - a. Rotation of the pipe in the fitting may be omitted.
 - b. Hold joint together for 1 to 3 minutes depending on pipe size.
 - c. As an aid for joining in these larger sizes it is recommended that a come-along or pipe joining tool similar to that manufactured by Reed Manufacturing Company be used.



EXCESS CEMENT

Immediately after joining and before joint is set, gently place it back onto a level surface, wipe off all excess cement from the circumference of the pipe and fitting.

JOINT INTEGRITY

ABS, PVC, and CPVC-CTS piping joint integrity depends greatly upon following exactly and by intent NIBCO's specific handling, inspection, storage, shipping, fabrication, installation, testing, and operating instructions. Joint integrity also depends greatly upon an infinitely wide, unpredictable, and uncontrollable set of product and environmental conditions that go into determining the length of drying times, before a joint should be moved, handled, or whether intended for low or high working-pressure applications. These conditions include size of pipe, surface temperature of the joint, dry joint interference fit, and relative humidity. Drying times will be faster with smaller pipe/tube, higher surface temperatures, tighter interference fits, and lower relative humidity. Drying times will be slower when these conditions are reversed.

Because of the uncontrollable and unpredictable variety of drying conditions that can exist from job-to-job and moment-to-moment, NIBCO recommends only the drying times and solvent-welding conditions specified below:

1. When exposed to direct sunlight, solvent-welding joining should not be done in atmospheric temperatures below 40°F or above 90°F.
2. NIBCO recommends that 24 hours of joint drying time should elapse for all sizes of pipe and drying temperatures, before the joint is moved or subjected to any appreciable internal or external pressure.

HANDLING

During the initial setting of the cement, which begins about two minutes after application, (on small sizes) be careful not to move or disturb the joint. NIBCO offers, as a non-liability supplier, the following drying times as a guide in aiding the installer, engineer, owner, or other decision making party in deciding at his own risk when the joints are sufficiently dry for movement, handling, low pressure, initial joint testing, application of high pressure tests, and introduction of working pressure. These drying times are based upon a combination of past field experience and laboratory tests.

Solvent Welding Instructions for ABS, PVC, & CPVC-CTS Pressure & DWV Piping Systems (Continued)

ABS, PVC, and CPVC-CTS Joint Movement Times

Nominal Size	HOT WEATHER* 90°-150°F Surface Temperature	MILD WEATHER* 50°-90°F Surface Temperature	COLD WEATHER* 10°-50°F Surface Temperature
1/2 - 1 1/4	12 Min.	20 Min.	30 Min.
1 1/2 - 2 1/2	30 Min.	45 Min.	1 Hr.
3 - 4	45 Min.	1 Hr.	1 Hr. & 30 Min.
6 - 8	1 Hr.	1 Hr. & 30 Min.	2 Hrs. & 30 Min.
10 - 12	2 Hrs.	3 Hrs.	5 Hrs.

*The temperatures above are only **drying** temperatures and should not be confused with atmospheric, joining-temperature recommendations and limitations. See Section on "Joint Integrity."

PRESSURE TESTING

CAUTION: AIR OR COMPRESSED GAS ARE NOT RECOMMENDED AS MEDIA FOR PRESSURE TESTING OF PLASTIC PIPING SYSTEMS.

1. Initial joint testing: Initial joint testing of PVC and CPVC-CTS pipe/tube could possibly be accomplished to 10% of its hydrostatic pressure rating after the below drying times have been observed:

PVC and CPVC-CTS Joint Drying Times at 10% Pressure.

Nominal Size	HOT WEATHER* 90°-150°F Surface Temperature	MILD WEATHER* 50°-90°F Surface Temperature	COLD WEATHER* 10°-50°F Surface Temperature
1/2 - 1 1/4	1 Hr.	1 Hr. & 15 Min.	1 Hr. & 45 Min.
1 1/2 - 2 1/2	1 Hr. & 30 Min.	1 Hr. & 45 Min.	3 Hrs.
3 - 4	2 Hrs. & 45 Min.	3 Hrs. & 30 Min.	6 Hrs.
6 - 8	3 Hrs. & 30 Min.	4 Hrs.	12 Hrs.
10 - 12	6 Hrs.	8 Hrs.	72 Hrs.

*The temperatures above are only **drying** temperatures and should not be confused with atmospheric, joining-temperature recommendations and limitations. See Section on "Joint Integrity."

2. The PVC pipe and CPVC-CTS tube could possibly be pressure tested up to 100% of its hydrostatic pressure rating after the below drying times:

PVC and CPVC-CTS Joint Drying Times For 100% Pressure

Nominal Size	HOT WEATHER* 90°-150°F Surface Temperature	MILD WEATHER* 50°-90°F Surface Temperature	COLD WEATHER* 10°-50°F Surface Temperature
1/2 - 1 1/4	4 Hrs.	5 Hrs.	7 Hrs.
1 1/2 - 2 1/2	6 Hrs.	8 Hrs.	10 Hrs.
3 - 4	8 Hrs.	18 Hrs.	24 Hrs.
6 - 8	12 Hrs.	24 Hrs.	48 Hrs.
10 - 12	18 Hrs.	36 Hrs.	72 Hrs.

*The temperatures above are only **drying** temperatures and should not be confused with atmospheric, joining-temperature recommendations and limitations. See Section on "Joint Integrity."

DO'S AND DON'TS

DO:

- Use the proper applicator.
- Use the proper type of solvent cement for the job.
- Follow the instructions completely.

DON'T:

- Attempt to solvent weld under the following conditions:
 1. If it is raining.
 2. If the atmospheric temperature is below 40°F.
 3. If under direct exposure to sun at atmospheric temperatures above 90°F
- Discard empty cans of solvent, primer or rags in trench or near piping. Concentrated fumes or dripping cement or primer can cause piping failure.

Solvent Welding Instructions for ABS, PVC, & CPVC-CTS Pressure & DWV Piping Systems (Continued)

HOT WEATHER CEMENTING

Since cement contains a solvent, certain precautions or steps should be taken when the atmospheric temperature is above 90°F, to avoid evaporation of the solvent from the cement just prior to joining. Such evaporation will cause the cement to prematurely set before joining, thus, adversely affecting the joint integrity. Use one or a combination of the list below to reduce the chances of this condition occurring:

1. Shade or shelter the joint surfaces from direct exposure to the sun's rays for at least one hour prior to joining and during the joining process.
2. Make cement joints during early morning hours.
3. Apply cement quickly. On 6" and larger pipe, it is recommended that two persons apply cement to pipe surface while the third applies it to the fitting socket.
4. Join pipe to fittings as quickly as possible after applying cement.

COLD WEATHER CEMENTING

Because the solvents in the cement will not evaporate as readily when the temperature is below 40°F, the pipe joints will not set up as rapidly in cold weather. If solvent cementing must be done when the temperature is below 40°F the following suggestions are offered:

1. Store pipe, fittings, cement and primer in a heated area.
2. Prefab as much of the system as possible in a heated work area.
3. Joints that must be made outside should be protected with a portable shelter and heated with indirect heat to surface temperatures above 40°F prior to joining. The shelter and heat should remain in place for at least two hours after joint assembly.
4. Pipe and fittings must be dry prior to joining and the joints should be kept dry until the cement has had sufficient time to set.

CAUTION: DO NOT ATTEMPT TO SPEED THE SETTING OR DRYING OF THE CEMENT BY APPLYING DIRECT HEAT TO THE SOLVENT WELDED JOINT. Forced rapid drying by heating will cause the cement solvents to boil off, forming porosity, bubbles, and blisters in the cement film.

Applicators

Nominal Size	Roller Size	Recommended Brush Width*, in.
1/4	Not Recommended	1/2
3/8		1/2
1/2		1/2
3/4		1/2
1		1/2
1 1/4		1
1 1/2		1
2		1
2 1/2		1 1/2
3	3	1 1/2
4		2
6		3
8	7	4
10		4, 6, or 8
12		4, 6, or 8

*Natural bristle brushes should always be specified. It is recognized that the recommended brush width may not always be readily available. However, the selection should come as close as possible to the recommended width in order to insure complete coverage with a minimum number of brush strokes.

REQUIREMENTS

The below estimated PVC, CPVC, and ABS IPS pipe solvent cement requirements should only be considered as a guideline for usage and could vary according to a wide variety of installation conditions. Further, these estimates should in no way be used to restrict the liberal cement application instructions recommended for the pipe.

Number of Joints Per...*

Nominal Size	Pint	Quart	Gallon
1/2	130	260	1040
3/4	80	160	640
1	70	140	560
1 1/4	50	100	400
1 1/2	35	70	280
2	20	40	160
2 1/2	17	34	136
3	15	30	120
4	10	20	80
5	8	16	64
6	N/R	8	24
8	N/R	3	12
10	N/R	N/R	10
12	N/R	N/R	6

*Each joint represents one socket in a fitting.

N/R - Not Recommended.

Solvent Welding Instructions for ABS, PVC, & CPVC-CTS Pressure & DWV Piping Systems (Continued)

The estimated CPVC-CTS solvent cement requirements listed below should only be considered as a guideline for usage and could vary according to a wide variety of installation conditions. Further, these estimates should in no way be used to restrict the liberal cement application instructions recommended for the tube.

Number of Joints Per Pint

Nominal Size	Joints
1/2	255
3/4	170
1	138
1 1/4	95
1 1/2	68
2	38

Threading Instructions for Thermoplastic Pipe

Scope

The procedure presented herein covers threading of all IPS Schedule 80 or heavier thermoplastic pipe. These tapered threads are National Pipe Threads (NPT) which are cut to the dimensions outlined in ANSI B1.20.1.

Thread Dimensions

PIPE		THREADS					
Nominal Size	Outside Diameter D, in.	Number of Threads Per Inch	Normal Engagement By Hand C, in.	Length of Effective Thread A, in.	Total Length: End of Pipe to Vanish Point B, in.	Pitch Diameter at End of Internal Thread E, in.	Depth of Thread (Max.) in.
1/4	0.540	18	0.228	0.4018	0.5946	0.49163	0.04444
1/2	0.840	14	0.320	0.5337	0.7815	0.77843	0.05714
3/4	1.050	14	0.339	0.5457	0.7935	0.98887	0.05714
1	1.315	11½	0.400	0.6828	0.9845	1.23863	0.06957
1¼	1.660	11½	0.420	0.7068	1.0085	1.58338	0.06957
1½	1.900	11½	0.420	0.7235	1.0252	1.82234	0.06957
2	2.375	11½	0.436	0.7565	1.0582	2.29627	0.06957
2½	2.875	8	0.682	1.1375	1.5712	2.76216	0.10000
3	3.500	8	0.766	1.2000	1.6337	3.38850	0.10000
4	4.500	8	0.844	1.3000	1.7337	4.38713	0.10000

Note: Do not thread Schedule 40 pipe.

THREADING EQUIPMENT AND MATERIALS

- Pipe Dies
- Pipe Vise
- Threading ratchet or power machine
- Tapered plug
- Cutting lubricant (soap and water)
- Strap wrench
- PTFE tape
- Cutting tools
- Deburring tool

PIPE PREPARATION

Plastic pipe can be easily cut with a powersaw, circular saw, band saw, or handsaw. For best results, use a fine-toothed blade (16-18 teeth per inch) with little or no set (maximum 0.025 inch). A circumferential speed of about 6,000 ft./min. is suitable for circular saws; band saw speed should be approximately 3,000 ft./min. Carbide-tipped blades are preferable when quantities of pipe are to be cut. To ensure square-end cuts, a mitre box, holddown, or jig should be used. Pipe or tubing cutters can be used for smaller diameter pipe when the cutting wheel is specifically designed for plastic pipe. Such a cutter is available from the Reed Manufacturing Co. or Ridge Tool Company.

THREADING DIES

Thread-cutting dies should be clean, sharp, and in good condition, and should not be used to cut materials other than plastics. Dies with a 5° negative front-rake angle are recommended when using power threading equipment and dies with a 5° to 10° negative front-rake angle are recommended when cutting threads by hand. When cutting threads with power threading equipment, self-opening die heads and a slight chamfer to lead the dies will speed production.

1. Hold pipe firmly in a pipe vise. Protect the pipe at the point of grip by inserting a rubber sheet or other material between the pipe and vise.



Threading Instructions for Thermoplastic Pipe (Continued)

2. A tapered plug must be inserted in the end of the pipe to be threaded. This plug provides additional support and prevents distortion of the pipe in the threaded area. Distortion of the pipe during the threading operation will result in eccentric threads, non-uniform circumferential thread depth or gouging and tearing of the pipe wall. See table below for approximate plug O.D. dimensions.



Reinforcing Plug Dimensions*

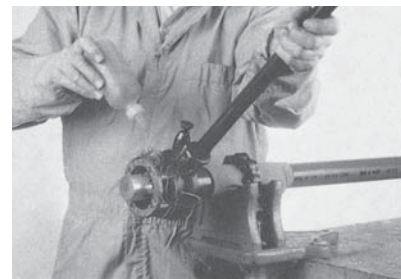
Nominal Size	Plug O.D.*
1/2	0.526
3/4	0.722
1	0.935
1 1/4	1.254
1 1/2	1.476
2	1.913
2 1/2	2.289
3	2.864
4	3.786

These dimensions are based on the median wall thicknesses and average outside diameter for the respective pipe sizes. Variations in wall thickness and O. D. dimensions may require alteration of the plug dimensions.

3. Use a die stock with a proper guide that is free of burrs or sharp edges, so that the die will start and go on square to the pipe axis.



4. Push straight down on the handle, avoiding side pressure that might distort the sides of the threads. If power threading equipment is used, the dies should not be driven at high speeds or with heavy pressure. Apply an external lubricant liberally when cutting the threads. Advance the die to the point where the thread dimensions are equal to those listed in the table on Thread Dimensions above. Do not over-thread.



5. Periodically check the threads with a ring gage to insure that proper procedures are being followed. Thread dimensions are listed in the table on Thread Dimensions. The gauging tolerance is $\pm 1\frac{1}{2}$ turns.

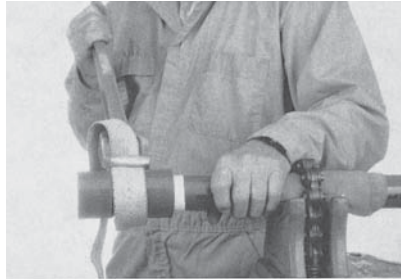


6. Brush threads clean of chips and ribbons. Then starting with the second full thread, and continuing over the thread length, wrap PTFE thread tape in the direction of the threads. Overlap each wrap by one half the width of the tape. Thread lubricant/sealant may be used if approved by the manufacturer.



Threading Instructions for Thermoplastic Pipe (Continued)

7. Thread the fitting onto the pipe and tighten by hand. Using a strap wrench only, further tighten the connection an additional one to two threads past hand tightness. Avoid excessive torque as this may cause thread damage or fitting damage.



Pressure Testing

Threaded piping systems can be pressure tested up to 100% of their hydrostatic pressure rating as soon as the last connection is made.

CAUTION: AIR OR COMPRESSED GAS ARE NOT RECOMMENDED AS MEDIA FOR PRESSURE TESTING OF PLASTIC PIPING SYSTEMS.

Flanged Joints

Scope

Flanging is used extensively for plastic process lines that require periodic dismantling. Plastic flanges and factory flanged valves and fittings in PVC, CPVC, PVDF and polypropylene are available in a full range of sizes and types for joining to pipe by solvent welding, threading, or thermosealing as in the case with polypropylene and PVDF. Gasket seals between the flange faces should be an elastomeric full flat-faced gasket with a hardness of 50 to 70 durometer A. NIBCO can provide polychloroprene (CR) gaskets nominal sizes 1/2 through 8 having a 1/8 inch thickness. For chemical environments too aggressive for polychloroprene other more resistant elastomers should be used.

Dimensions

Bolt circle and number of bolt holes for the flanges are the same as Class 150 metal flanges per ANSI B16.5. Threads are tapered iron pipe size threads per ANSI B1.20.1. The socket dimensions conform to ASTM D 2467, which describes nominal sizes 1/2 thru 8. Internal NIBCO specifications have been established for the size 10 and 12 PVC patterns.

Pressure Rating

As with all other thermoplastic piping components, the maximum non-shock operating pressure is a function of temperature. Maximum pressure rating for NIBCO valves, unions and flanges is 150 psi. Above 100°F refer to the chart.

Maximum Operating Pressure (psi)

Operating Temp. °F	PVC
100	150
110	135
120	110
130	75
140	50
150	N/R
160	N/R
170	N/R
180	N/R
190	N/R
200	N/R
250	N/R
280	N/R

N/R Not Recommended

ANSI B16.5 Dimensional Data for Flanges and Flanged Fittings

(Dimensions and Bolts Conform to Class 150 Steel Flanges) Sealing

Nominal Size	Outside Diameter (inches)	Dimensions		
		Number of Holes	Drilling	
			Diameter of Bolt (Inches)	Diameter of Bolt Circle (inches)
1/2	3.50	4	1/2	2.38
3/4	3.88	4	1/2	2.75
1	4.25	4	1/2	3.12
1 1/4	4.62	4	1/2	3.50
1 1/2	5.00	4	1/2	3.88
2	6.00	4	5/8	4.75
2 1/2	7.00	4	5/8	5.50
3	7.50	4	5/8	6.00
4	9.00	8	5/8	7.50
6	11.00	8	3/4	9.50
8	13.50	8	3/4	11.75
10	16.00	12	7/8	14.25
12	19.00	12	7/8	17.00

The faces of the flanges are tapered back away from the orifice area at a 1/2 to 1° pitch, so that when the bolts are tightened, the faces will be pulled together generating a force in the water way area to improve the sealing.

INSTALLATION TIPS

Once a flange is joined to the pipe, the method for joining two flanges together is as follows:

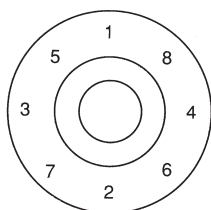
1. Make sure that all the bolt holes of the mating flanges match up. It is not necessary to twist the flange and pipe to achieve this.
2. Insert all bolts.
3. Make sure that the faces of the mating flanges are not separated by excessive distance prior to bolting down the flanges.
4. The bolts on the plastic flanges should be tightened by pulling down the nuts diametrically opposite each other using a torque wrench. Complete tightening should be accomplished in stages and the final torque values shown in the table should be followed for the various sizes of flanges. Uniform stress across the flange will eliminate leaky gaskets.

Flanged Joints (continued)

Flange Size	Recommended Torque*
1/2 - 1 1/2	10- 15 ft. lbs.
2 - 4	20- 30 ft. lbs.
6 - 8	33- 50 ft. lbs.
10	53- 75 ft. lbs.
12	80-110 ft. lbs.

*For a well-lubricated bolt with flat washers under bolt head and nut.

The following tightening pattern is suggested for the flange bolts:



- If the flange is mated to a rigid and stationary flanged object, or a metal flange, particularly in a buried situation where settling could occur with the plastic pipe, the plastic flange must be supported to eliminate potential stressing.

Adapting Plastic Piping to Other Piping Materials

THREADED CONNECTIONS - ABS, CPVC, & PVC pipe less than Schedule 80 wall should not be threaded. Most codes require transition from one material to another by use of appropriate adapter fittings. NIBCO offers a complete line of adapters for ABS, CPVC, & PVC.

Common thread sealants should not be used on threaded ABS, CPVC, or PVC joints. When necessary, PTFE pipe tape can be used.

CONNECTING CPVC TO METAL PIPE OR FITTINGS - The recommended methods of joining CPVC tube to metal threaded valves or piping are to use one of the special transition unions or a CPVC adapter with a threaded-brass insert. Threaded plastic-to-metal connections are not recommended. The difference in the rates of expansion of CPVC and metal may cause leakage in threaded joints.

CONNECTING CPVC TO HOT WATER HEATER

An approved temperature/pressure relief valve should be assembled to the hot water heater so that the probe or sensing element enters the water at the top of the heater. Using metal nipples, extend the metal piping at least 12 inches from the water heater on both the cold water supply and the hot water discharge lines. Special transition unions or CPVC adapters with a threaded-brass insert must be used to join the CPVC tube to the nipples. Do not use CPVC pipe and fittings with commercial type non-storage water heaters.

Pipe Support Spacing

ABS & PVC piping should be supported just as any other piping system. Ordinary hanger straps may be used for suspending below floor systems. The light weight of ABS & PVC may lead one to believe that wider hanger spacing could be permitted. Four or five foot spacing is recommended, with proper support at the base of each stack. CPVC Pressure pipe should be supported every three feet.

Since ABS, CPVC, & PVC are non-metallic, they are not as "stiff" as their metal counterparts, therefore the installer must exercise care to assure proper alignment of required grades.

Branch fittings serving trap arms should also be secured to the framing to prevent movement. Hanger straps should not be so tight as to compress, distort, cut, or abrade the piping.

ALLOWING FOR EXPANSION-In Pressure piping, allowance for expansion due to changing temperature is important. It is good practice to include a 12-inch offset every ten feet in a straight run. Illustrated below are several methods for providing off sets.

Specific Gravity	Correction Factor
1.1	0.98
1.2	0.96
1.4	0.93
1.6	0.90
2.0	0.85
2.5	0.80

The above data is for un-insulated lines. For insulated lines reduce spans to 70% of table values. For spans of less than 2 feet continuous support should be used.

Pipe Support Spacing, ABS-DWV, Ft.			
Nominal Size	70°F	100°F	140°F
1 1/4	4 1/2	4 1/2	4
1 1/2	5	5	4 1/2
2	5	5	4 1/2
3	6	6	5 1/2
4	6 1/4	6 1/4	5 3/4
6	6 3/4	6 3/4	6
8	7	7	6 1/2
10	7	7	6 1/2
12	7	7	6 1/2

Pipe Support Spacing, CPVC-CTS, Ft.				
Nominal Size	70°F	100°F	140°F	180°F
1/2	3	3	2 1/2	2 1/2
3/4	3	3	2 1/2	2 1/2
1	3	3	2 1/2	2 1/2
1 1/4	4	4	3 1/2	3 1/2
1 1/2	4	4	3 1/2	3 1/2
2	4	4	3 1/2	3 1/2

Pipe Support Spacing, PVC-Schedule 40, Ft.			
Nominal Size	70°F	100°F	140°F
1/2	4 1/2	4	2 1/2
3/4	5	4	2 1/2
1	5 1/2	4 1/2	2 1/2
1 1/4	6	5	3
1 1/2	6	5	3
2	6	5	3
2 1/2	7	6	3 1/2
3	7	6	3 1/2
4	7 1/2	6 1/2	4
5	7 1/2	6 1/2	4
6	8 1/2	7 1/2	4 1/2
8	9	8	4 1/2
10	10	8 1/2	5
12	10	8 1/2	5

Pipe Support Spacing, PVC-Schedule 80, Ft.			
Nominal Size	70°F	100°F	140°F
1/2	5	4 1/2	2 1/2
3/4	5 1/2	4	2 1/2
1	6	5	3
1 1/4	6 1/2	5 1/2	3 1/2
1 1/2	6 1/2	5 1/2	3 1/2
2	7	6	3 1/2
2 1/2	8	7	4
3	8	7	4
4	9	7 1/2	4 1/2
6	10	9	5
8	11	9 1/2	5 1/2

Expansion and Contraction of Plastic Pipe

CALCULATING STRESS

Plastics, like other piping materials, undergo dimensional changes as a result of temperature variations above and below the installation temperature. If movement resulting from these dimensional changes is restricted by adjacent equipment or by a vessel to which the pipe may be rigidly attached, the resultant stresses and forces may cause damage to such items or even to the pipe itself. In such a case, where compensation is not provided for these dimensional changes and where the piping system is rigidly held or restricted at both ends, an estimate of the magnitude of the resultant stresses can be obtained with the following formula. This formula relates the temperature differential to the temperature dependent modulus and the expansion coefficient for the particular plastic material.

$$S = EC(T_1 - T_2)$$

Where:

S = Stress (psi)

E = Modulus of Elasticity (psi) (See table below for specific values at various temperatures)

C = Coefficient of Expansion (in/in/°F x 10⁵) (See physical property chart on page 7 for values)

$T_1 - T_2$ = Temperature differential between the installation temperature and the maximum or minimum system temperature

N/A = Not Applicable

Temperature Vs. Modulus (x 10 ⁵) psi						
Temperature, °F	73	90	100	140	180	210
PVC	4.20	3.75	3.60	2.70	N/A	N/A
CPVC	4.23	4.00	3.85	3.25	2.69	2.20
ABS	2.71	2.43	2.40	1.90	1.54	N/A

The magnitude of the resultant longitudinal forces can be determined by multiplying the stress, times the plastic cross-sectional area.

Example 1:

Assuming the temperature extremes are from 70°F to 100°F, what would be the amount of force developed in nominal size 2 Schedule 40 PVC pipe with the pipe rigidly held and restricted at both ends?

$$S = EC(T_1 - T_2)$$

$$S = EQ(30)$$

$$S = (3.60 \times 10^5) \times (3.0 \times 10^{-5})(30)$$

$$S = 324 \text{ psi}$$

The magnitude of the resultant longitudinal forces:

$$F = S \times A$$

Where:

F = Force (lbs)

S = Stress (psi)

A = Cross-sectional Area (in²)

Nominal size 2 Schedule 40 PVC Pipe has:

$$OD = 2.375 \text{ in}$$

$$ID = 2.047 \text{ in}$$

$$\text{Cross-sectional area (A)} = \left[\left(\frac{OD}{2} \right)^2 - \left(\frac{ID}{2} \right)^2 \right] \times 3.14 = 1.14 \text{ in}^2$$

Therefore, the magnitude of the resultant longitudinal force is:

$$F = SA$$

$$F = 324 \times 1.14$$

$$F = 369 \text{ lbs.}$$

The extent of expansion or contraction is dependent upon the piping material of construction and its coefficient of linear expansion which, for convenience, is listed below for several materials in units of inches of expansion per 10°F temperature change per 100 feet of pipe or tube.

Expansion Coefficient	
Material	Y, in/10°F/100ft
PVC	0.360
CPVC	0.380
ABS	0.500

The degree of thermal expansion or contraction is also dependent upon the system temperature differential, as well as, the length of pipe run between changes in direction and it can be calculated using the following formula:

$$\Delta L = \frac{Y(T_1 - T_2)}{10} \times \frac{L}{100}$$

Expansion and Contraction of Plastic Pipe (Continued)

Where:

ΔL = Dimensional change due to thermal expansion or contraction (in.)

Y = Expansion coefficient (in/10°F/100ft) (See Table on previous page)

(T_1-T_2) = Temperature differential between the installation temperature and the maximum and minimum system temperature, which ever provides the greatest differential (°F)

L = Length of pipe run between changes in direction (ft)

Example 1:

How much expansion can be expected in a 200 foot straight run of nominal size 3 PVC Pipe that will be installed at 75°F when the piping system will be operated at a maximum of 120°F and a minimum of 40°?

$$\Delta L = \frac{0.360(120 - 75)}{10} \times \frac{200}{100}$$

$$\Delta L = .360 \times 4.5 \times 2.0 = 3.24 \text{ inches}$$

Stresses and forces that result from thermal expansion and contraction can be reduced or eliminated by providing for flexibility in the piping system through frequent changes in direction or introduction of loops as graphically depicted in the figures below.

Normally, piping systems are designed with sufficient directional changes which provide inherent flexibility to compensate for expansion and contraction. However, when this is not the case or when there is reasonable doubt as to the adequate flexibility of the system, expansion loops or expansion joints should be designed into the system. If an expansion loop (which is fabricated with 90° elbows and straight pipe as depicted in Fig. 1) is to be used, the leg length (R) should be determined by using the following formula to insure that it is of sufficient length to absorb expansion and contraction movement without damage.

$$R = 1.44 \sqrt{D\Delta L}$$

Where:

R = Expansion loop leg length (ft)

D = Nominal outside diameter of pipe (in)

ΔL = Dimensional change due to thermal expansion or contraction (in)

Example 2:

How long should the expansion loop legs be in order to compensate for the expansion in Example 1?

$$R = 1.44 \sqrt{D\Delta L}$$

Flexibility, through the introduction of flexural off-sets, must be inserted into a piping system design in situations where straight runs of pipe are long or the ends of a straight run are restricted from movement and also in situations where the system is restrained. Several examples of methods for inserting flexibility in these situations are graphically presented below. In each case, rigid supports or restraints should not be placed within the leg length of an expansion loop, off-set, or bend.

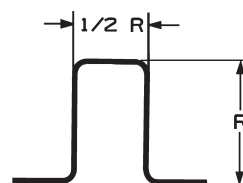


Fig. 1

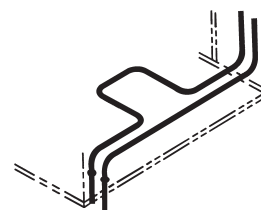


Fig. 3



Fig. 3



Fig. 4

ABS-DWV Figure Number Comparison

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
5800	2	—	—
5800	3	—	—
5800	4	122	02946
5800-SD	3 x 4	117	02962
5801	1 1/4	—	02932
5801	1 1/2	100	02933
5801	1 1/2 x 1 1/4	—	—
5801	2	100	02934
5801	2 x 1 1/2	102	02948
5801	3	100	02935
5801	3 x 1 1/2	102	02949
5801	3 x 2	102	02950
5801	4	100	02936
5801	4 x 2	102	02951
5801	4 x 3	102	02952
5801	6	100	03143
5801-2-7	1 1/4	—	03308
5801-2-7	1 1/2	103-P	03389
5801-2-7	1 1/2 x 1 1/4	103-P	03409
5801-2-7	2	103-P	03390
5801-2-7-B	1 1/2	—	—
5801-2-7-C	1 1/2	103-X	03392
5801-2-7-C	2	—	—
5801-2-F	1 1/2 x 1 1/4	107	02904
5801-2-F	2 x 1 1/2	107	02906
5801-2-F	3 x 1 1/2	107	02907
5801-2-F	3 x 2	107	02908
5801-2-F	4 x 2	107	02910
5801-2-F	4 x 3	107	02909
5801-2-F	6 x 4	107	03144
5801-7	1 1/4	—	03380
5801-7	1 1/2	104-P	03383
5801-7	1 1/2 x 1 1/4	104-P	03384
5801-7	2	—	—
5801-7-B	1 1/4	—	—
5801-7-B	1 1/2	—	03376
5801-7-B	1 1/2 x 1 1/4	—	03394
5801-7-C	1 1/2	104-X	03376
5801-7-C	1 1/2 x 1 1/4	104-X	03394
5801-RP	1 1/2	130	02965
5801-RP	2	130	02966
5801-RP	3	130	02967
5801-RP	4	130	02968
5803	1 1/4	—	03006
5803	1 1/2	101	02866
5803	2	101	02867
5803	3	101	02869
5803	4	101	03396
5803	6	101	03147
5803-2	1 1/4	—	02921

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
5803-2	1 1/2	105	02922
5803-2	2	105	02923
5803-2	3	105	02924
5803-2	4	105	02925
5803-2	6	105	03148
5803-2-F	1 1/2 x 1 1/4	—	02912
5803-2-F	2 x 1 1/2	—	02913
5803-2-F	3 x 2	—	—
5803-2-F	4 x 3	—	—
5803-2-SW	1 1/2	900	03418
5803-2-SW-EL	1 1/2	—	—
5803-2-TPA	1 1/2	—	03419
5803-TPA	1 1/2	—	03014
5804	1 1/4	—	02931
5804	1 1/2	109	02927
5804	1 1/2 x 1 1/4	—	02926
5804	2	109	02928
5804	3	109	02929
5804	4	109	02930
5804-2	1 1/4	—	03010
5804-2	1 1/2	103	03386
5804-2	1 1/2 x 1 1/4	—	03387
5804-2	2	103	03385
5804-2	3	—	03366
5804-2	4	—	—
5805	1 1/2 x 2	—	02961
5805	1 1/2 x 3	—	02964
5805	2	123	02957
5805	3	—	02958
5805	3 x 4	123-R	02960
5805	4	—	02959
5805-N	1 1/2 x 2	—	02947
5805-N	2	119	02954
5805-N	3	119	02955
5805-N	3 x 4	119	02953
5805-N	4	119	02956
5806	1 1/4	—	02884
5806	1 1/2	321	02885
5806	2	321	02886
5806	3	321	02887
5806	4	321	02888
5806	6	321	03132
5806	10	—	—
5806	12	—	—
5806-2	1 1/4	—	03016
5806-2	1 1/2	323	02890
5806-2	2	323	02891
5806-2	3	323	02892
5806-2	4	323	02893
5806-2	6	323	03133

ABS-DWV Figure Number Comparison

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
5807	1 $\frac{1}{4}$	—	02875
5807	1 $\frac{1}{2}$	300	02876
5807	2	300	02877
5807	3	300	02878
5807	4	300	02979
5807	6	300	03130
5807-2	1 $\frac{1}{4}$	—	02894
5807-2	1 $\frac{1}{2}$	302	02880
5807-2	2	302	02881
5807-2	3	302	02882
5807-2	4	302	02883
5807-2	6	—	02889
5807-2-CL	4 x 3	330	03107
5807-2-CL	4 x 3 w/Cap	330-X	03108
5807-2-LT	1 $\frac{1}{2}$	309	03060
5807-2-LT	2	309	03061
5807-2-LT	3	309	03063
5807-2-LT	4	—	—
5807-2-V	1 $\frac{1}{2}$	333	03088
5807-2-V	2	333	03089
5807-2-V	3	—	03090
5807-3	3	—	02807
5807-9	3 x 3 x 1 $\frac{1}{2}$	—	03069
5807-9	3 x 3 x 2	300-S	03070
5807-CL	4 x 3	329	03093
5807-LT	1 $\frac{1}{4}$	—	02870
5807-LT	1 $\frac{1}{2}$	304	02871
5807-LT	2	304	02872
5807-LT	3	304	02873
5807-LT	4	304	02874
5807-V	1 $\frac{1}{4}$	—	03083
5807-V	1 $\frac{1}{2}$	331	03084
5807-V	2	331	03085
5807-V	3	331	03086
5807-V	4	—	03087
5807-V	10	—	—
5807-V	12	—	—
5808	1 $\frac{1}{2}$	324	02899
5808	2	324	02900
5808	3	324	02901
5808	4	324	02983
5808	6	324	02988
5808-2	1 $\frac{1}{2}$	326	02984
5808-2	2	326	02985
5808-2	3	326	02986
5808-2	4	326	02987
5810	1 $\frac{1}{4}$	—	02816
5810	1 $\frac{1}{2}$	600	02822
5810	2	600	02823
5810	2 x 1 $\frac{1}{2}$ x 1 $\frac{1}{2}$	601	02831

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
5810	2 x 2 x 1 $\frac{1}{2}$	601	02826
5810	3	600	02824
5810	3 x 3 x 1 $\frac{1}{2}$	601	02827
5810	3 x 3 x 2	601	02828
5810	4	600	02825
5810	4 x 4 x 1 $\frac{1}{2}$	601	02833
5810	4 x 4 x 2	601	02829
5810	4 x 4 x 3	601	02830
5810	6	600	03135
5810	6 x 6 x 3	—	—
5810	6 x 6 x 4	601	03137
5810-14	1 $\frac{1}{2}$	—	—
5810-2	1 $\frac{1}{2}$	—	03367
5810-2	2	602	03368
5810-2	3	602	03369
5810-2	3 x 3 x 1 $\frac{1}{2}$	—	03372
5810-2	3 x 3 x 2	603	03373
5810-2	4	—	03370
5810-2	4 x 4 x 3	—	03375
5811	1 $\frac{1}{4}$	—	02751
5811	1 $\frac{1}{2}$	400	02752
5811	1 $\frac{1}{2}$ x 1 $\frac{1}{4}$ x 1 $\frac{1}{4}$	—	02759
5811	1 $\frac{1}{2}$ x 1 $\frac{1}{4}$ x 1 $\frac{1}{2}$	—	02762
5811	1 $\frac{1}{2}$ x 1 $\frac{1}{2}$ x 1 $\frac{1}{4}$	—	02757
5811	2	400	02753
5811	2 x 1 $\frac{1}{2}$ x 1 $\frac{1}{2}$	401	02761
5811	2 x 1 $\frac{1}{2}$ x 2	401	02760
5811	2 x 2 x 1 $\frac{1}{2}$	401	02758
5811	3	400	02754
5811	3 x 3 x 1 $\frac{1}{2}$	401	02764
5811	3 x 3 x 2	401	02763
5811	4	400	02755
5811	4 x 4 x 1 $\frac{1}{2}$	—	—
5811	4 x 4 x 2	401	02765
5811	4 x 4 x 3	401	02766
5811	6	400	02756
5811	6 x 6 x 4	401	02768
5811-14-V	1 $\frac{1}{2}$	445	03413
5811-14-V	2	445	03414
5811-14-V	3	445	03415
5811-14-V	4	445	03416
5811-2	1 $\frac{1}{2}$	403	03112
5811-2	2	403	03113
5811-2	2 x 1 $\frac{1}{2}$ x 1 $\frac{1}{2}$	404	03115
5811-2	2 x 1 $\frac{1}{2}$ x 2	404	03116
5811-2	2 x 2 x 1 $\frac{1}{2}$	404	03117
5811-2	3	403	03114
5811-2	3 x 3 x 1 $\frac{1}{2}$	404	03118
5811-2	3 x 3 x 2	404	03119
5811-2	4	403	03120

ABS-DWV Figure Number Comparison

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
5811-C	3	448	02237
5811-C	4	448	02238
5811-V	1½	441	03403
5811-V	2	441	03404
5811-V	3	441	03405
5811-V	3 x 3 x 1½	—	—
5811-V	3 x 3 x 2	—	—
5811-V	4	—	03406
5811-V	10	—	—
5811-V	12	—	—
5812-LR	1½	501	02853
5812-LR	2	501	02858
5812-LR	2 x 1½ x 1½	502	02835
5812-LR	2 x 1½ x 2	502	02836
5812-LR	2 x 2 x 1½	502	02865
5812-LR	3	501	02852
5812-LR	3 x 3 x 1½	502	02837
5812-LR	3 x 3 x 2	502	02857
5812-LR	4	501	02860
5812-LR	4 x 4 x 2	502	02863
5812-LR	4 x 4 x 3	502	02864
5814	1½	444-X	02997
5814	2	444-X	02998
5814	3	444-X	02999
5814	4	444-X	03000
5816	1½	105-X	03001
5816	2	105-X	03002
5816	3	105-X	03003
5816	4	105-X	03004
5816	6	—	03005
5817	1¼	—	—
5817	1½	116	02977
5817	2	116	02978
5817	3	116	02979
5817	4	116	02980
5817	6	—	—
5817-P	1½	131	02411
5817-P	2	131	02412
5817-P	3	131	02413
5817-P	4	131	02414
5818	1¼	—	02937
5818	1½	106	02938
5818	2	106	02939
5818	2½	106	—
5818	3	106	02941
5818	3½	106	02943
5818	4	106	02942
5818	6	106	03146
5826	1½	—	03055
5826	2	—	03056

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
5827	1½	114	02993
5827	2	—	—
5827	3	—	—
5829	3 x 3	—	—
5829	3 x 4	—	—
5829	3 x 6	—	—
5829	3 x 8	—	—
5829	3 x 10	—	—
5829	3 x 12	—	—
5829-2	3 x 3	—	—
5829-2	3 x 4	—	—
5829-2	3 x 6	—	—
5829-2	3 x 8	—	—
5829-2	3 x 10	—	—
5834	1½	611	02838
5834	2	611	02839
5834	2 x 2 x 1½ x 1½	612	02847
5834	3	611	02840
5834	3 x 3 x 1½ x 1½	—	02843
5834	3 x 3 x 2 x 2	612	02844
5834	4	611	02841
5834	4 x 4 x 2 x 2	—	02845
5834	4 x 4 x 3 x 3	612	02846
5834	6 x 6 x 4 x 4	—	03142
5835	1½	428	02812
5835	2	428	02813
5835	2 x 2 x 1½ x 1½	429	02817
5835	3	428	02814
5835	3 x 3 x 1½ x 1½	429	02818
5835	3 x 3 x 2 x 1½	—	02819
5835	3 x 3 x 2 x 2	429	02820
5835	4	428	02815
5835	4 x 4 x 2 x 2	429	02240
5835	4 x 4 x 3 x 3	429	02821
5835-9	3 x 3 x 3 x 3 x 1½	—	—
5835-9	3 x 3 x 3 x 3 x 2	—	02772
5835-9	4 x 4 x 4 x 4 x 2	—	—
5835-9-9	3 x 3 x 3 x 3 x 2 x 2	—	02770
5835-9-9	4 x 4 x 4 x 4 x 2 x 2	—	—
5835-B	2	500	02246
5835-B	2 x 1½ x 1½ x 1½	500	02247
5835-B	2 x 1½ x 2 x 2	500	02248
5835-B	3	500	02249
5835-B	3 x 2 x 3 x 3	500	02250
5836	2 x 2 x 1½ x 1½	—	—
5836	3	—	02854
5836	4	—	02917
5837	1½	327	03045
5837	2	327	03046
5837	2 x 1½ x 1½	327	03049

ABS-DWV Figure Number Comparison

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
5837	3	327	03047
5837	4	—	03048
5848-A	4 x 3	820	02920
5851	4	800	02902
5851	4 x 3	800	02903
5851-2	4 x 3	801	02919
5851-2-A	4	812	02229
5851-2-A	4 x 3	812	02228
5851-3	4 x 3	—	02270
5851-4	4 x 3	—	02260
5851-A	4	811	02226
5851-A	4 x 3	811	02227
5853	3 or 4	—	—
5853-KO	3 or 4	815-KO	—
5853-NS	3 or 4	815	02255
5855	4	—	02253
5855	4 x 3	800-KO	02254
5860	1½	319	02895
5860	2	319	02896
5860	3	319	02897
5860	4	319	02982
5860-2	1½	320	03020
5860-2	2	320	03021
5860-2	3	320	03022
5860-2	4	—	03023
5861	3 x 3 x 1½	—	03028
5861	3 x 3 x 2	—	03027
5861-LH	3 x 3 x 1½	303	03041
5861-LH	3 x 3 x 2	303	03042
5861-LH	4 x 4 x 2	—	03043
5861-2-LH	3 x 3 x 2	—	—
5870	3 x 3 x 3 x 2 x 2	—	02811
5871	3 x 3 x 2 x 2	—	02780
5871	3 x 3 x 3 x 1½	—	02781
5871	3 x 3 x 3 x 2	416	02782
5871	4 x 4 x 4 x 2	—	02784
5872	3 x 3 x 2 x 2	—	—
5872	3 x 3 x 3 x 1½	—	02795
5872	3 x 3 x 3 x 2	417	02796
5872	4 x 4 x 4 x 2	—	02797
5878	1½	—	03471
5878	2	—	03472
5879	1½	700	03466
5879	2	700	03467
5879	3	700	03468
5879	4	700	03469
5881	1½	—	—
5884	1½	707-X	02223
5884	2	707-X	02224
5885	1½	706-X	02214

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
5885	2	706-X	02222
5885	3	706-X	02230
5885	4	706-X	02231
5891	1½ x 3 x 6	720-X	03100
5892	1¼	—	—
5892	1½	—	—
5892	1½ x 1¼	—	—
5892-B	1½	—	—
5892-C	1½	—	—
5892-C	1½ x 1¼	—	—
5893	1½ or 1½ x 1¼	711-P	02220
5895	1¼	—	02212
5895	1½	708-P	02215
5895	2	708-P	02216
5895-3	1½	—	—

PVC-DWV Figure Number Comparison

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
4800	2	122	05944
4800	3	122	—
4800	4	122	05946
4800-SD	3 x 4	117	05962
4801	1 1/4	100	05932
4801	1 1/2	100	05933
4801	1 1/2 x 1 1/4	—	—
4801	2	100	05934
4801	2 x 1 1/2	102	05948
4801	3	100	05935
4801	3 x 1 1/2	102	05949
4801	3 x 2	102	05950
4801	4	100	05936
4801	4 x 2	102	05951
4801	4 x 3	102	05952
4801	6	100	06143
4801	8	100	06145
4801	10	100	—
4801	12	100	—
4801-2-7	1 1/4	—	—
4801-2-7	1 1/2	103-P	—
4801-2-7	1 1/2 x 1 1/4	103-P	—
4801-2-7	2	103-P	—
4801-2-7C	1 1/2	103-X	—
4801-2-7C	1 1/2 x 1 1/4	103-X	—
4801-2-F	1 1/2 x 1 1/4	107	05904
4801-2-F	2 x 1 1/2	107	05906
4801-2-F	3 x 1 1/2	107	05907
4801-2-F	3 x 2	107	05908
4801-2-F	4 x 2	107	05910
4801-2-F	4 x 3	107	05909
4801-2-F	6 x 3	—	—
4801-2-F	6 x 4	107	06144
4801-2-F	8 x 4	—	—
4801-2-F	8 x 6	107	06149
4801-7	1 1/4	—	06380
4801-7	1 1/2	104-P	06383
4801-7	1 1/2 x 1 1/4	104-P	06384
4801-7	2	—	06382
4801-7B	1 1/2 x 1 1/4	—	06394
4801-7C	1 1/2	104-X	06376
4801-7C	1 1/2 x 1 1/4	104-X	06394
4801-RP	1 1/2	130	05965
4801-RP	2	130	05966
4801-RP	3	130	05967
4801-RP	4	130	05968
4801-RP	6	130	—
4803	1 1/4	101	05868
4803	1 1/2	101	05866
4803	2	101	05867

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
4803	3	101	05869
4803	4	101	06396
4803	6	101	06147
4803-2	1 1/4	—	05918
4803-2	1 1/2	105	05922
4803-2	2	105	05923
4803-2	3	105	05924
4803-2	4	105	05925
4803-2	6	105	06148
4803-2-F	1 1/2 x 1 1/4	—	—
4803-2-F	2 x 1 1/2	108	05913
4803-2-F	3 x 1 1/2	—	—
4803-2-F	3 x 2	—	—
4803-2-F	4 x 3	—	—
4804	1 1/4	109	05931
4804	1 1/2	109	05927
4804	1 1/2 x 1 1/4	109	05926
4804	2	109	05928
4804	3	109	05929
4804	4	109	05930
4804-2	1 1/4	—	06010
4804-2	1 1/2	—	06386
4804-2	1 1/2 x 1 1/4	103	06387
4804-2	2	—	06385
4804-2	3	—	06366
4804-2	4	—	—
4805	1 1/2 x 2	123-R	—
4805	2	123	05957
4805	2 x 3	—	06398
4805	3	123	05958
4805	3 x 4	123-R	05960
4805	4	123	05959
4805-N	1 1/2 x 2	119	—
4805-N	2	119	05954
4805-N	3	119	05955
4805-N	3 x 4	119	05953
4805-N	4	119	05956
4806	1 1/4	321	05884
4806	1 1/2	321	05885
4806	2	321	05886
4806	3	321	05887
4806	4	321	05888
4806	6	321	06132
4806	8	321	06134
4806	8 x 4	—	—
4806	8 x 6	—	—
4806	10	—	—
4806	12	—	—
4806-2	1 1/4	323	06016
4806-2	1 1/2	323	05890

PVC-DWV Figure Number Comparison

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
4806-2	2	323	05891
4806-2	3	323	05892
4806-2	4	323	05893
4806-2	6	323	06133
4806-2	8	323	06136
4806-2	8 x 4	—	—
4806-2	8 x 6	—	—
4807	1 1/4	300	05875
4807	1 1/2	300	05876
4807	2	300	05877
4807	3	300	05878
4807	4	300	05879
4807	6	300	06130
4807	8	300	06131
4807-2	1 1/4	302	05894
4807-2	1 1/2	302	05880
4807-2	2	302	05881
4807-2	3	302	05882
4807-2	4	302	05883
4807-2	6	302	05889
4807-2-CL	4 x 3	330	06107
4807-2-CL	4 x 3 w/Cap	330-X	06108
4807-2-LT	1 1/2	309	06060
4807-2-LT	2	309	06061
4807-2-LT	3	309	06063
4807-2-LT	4	309	06064
4807-2-V	1 1/2	333	06088
4807-2-V	2	333	06089
4807-2-V	3	333	06090
4807-3	3	—	—
4807-9	3 x 3 x 1 1/2	300-S	06069
4807-9	3 x 3 x 2	300-S	06070
4807-CL	4 x 3	329	06093
4807-LT	1 1/2	304	05871
4807-LT	2	304	05872
4807-LT	3	304	05873
4807-LT	4	304	05874
4807-V	1 1/2	331	06084
4807-V	2	331	06085
4807-V	3	331	06086
4807-V	4	—	—
4807-V	10	—	—
4807-V	12	—	—
4808	1 1/2	324	05899
4808	2	324	05900
4808	3	324	05901
4808	4	324	05983
4808	6	324	05988
4808-2	1 1/2	326	05984
4808-2	2	326	05985

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
4808-2	3	326	05986
4808-2	4	326	05987
4810	1 1/4	600	05816
4810	1 1/2	600	05822
4810	2	600	05823
4810	2 x 1 1/2 x 1 1/2	601	05831
4810	2 x 2 x 1 1/2	601	05826
4810	3	600	05824
4810	3 x 3 x 1 1/2	601	05827
4810	3 x 3 x 2	601	05828
4810	4	600	05825
4810	4 x 4 x 1 1/2	601	05833
4810	4 x 4 x 2	601	05829
4810	4 x 4 x 3	601	05830
4810	6	600	06135
4810	6 x 6 x 3	601	06138
4810	6 x 6 x 4	601	06137
4810	8	600	06139
4810	8 x 8 x 4	—	—
4810	8 x 8 x 6	601	05834
4810-2	2	602	06368
4810-2	3	602	06369
4810-2	3 x 3 x 1 1/2	603	06372
4810-2	3 x 3 x 2	603	06373
4810-2	4	602	06370
4810-2	4 x 4 x 2	603	06374
4810-2	4 x 4 x 3	603	06375
4811	1 1/4	400	—
4811	1 1/2	400	05752
4811	2	400	05753
4811	2 x 1 1/2 x 1 1/2	401	05761
4811	2 x 1 1/2 x 2	401	05760
4811	2 x 2 x 1 1/2	401	05758
4811	3	400	05754
4811	3 x 3 x 1 1/2	401	05764
4811	3 x 3 x 2	401	05763
4811	4	400	05755
4811	4 x 4 x 1 1/2	401	05767
4811	4 x 4 x 2	401	05765
4811	4 x 4 x 3	401	05766
4811	6	400	05756
4811	6 x 6 x 4	401	05768
4811	8	400	05775
4811-14-V	1 1/2	445	06413
4811-14-V	2	445	06414
4811-14-V	3	445	06415
4811-14-V	4	445	06416
4811-2	1 1/2	403	06112
4811-2	2	403	06113
4811-2	2 x 1 1/2 x 1 1/2	—	06115

PVC-DWV Figure Number Comparison

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
4811-2	2 x 1 1/2 x 2	—	06116
4811-2	2 x 2 x 1 1/2	404	06117
4811-2	3	403	06114
4811-2	3 x 3 x 1 1/2	404	06118
4811-2	3 x 3 x 2	404	06119
4811-2	4	403	06120
4811-2	4 x 4 x 2	404	06121
4811-C	3	448	05237
4811-C	4	448	05238
4811-V	1 1/2	441	06403
4811-V	2	441	06404
4811-V	3	441	06405
4811-V	4	441	06406
4811-V	10	—	—
4811-V	12	—	—
4812-LR	1 1/2	501	05853
4812-LR	2	501	05858
4812-LR	2 x 1 1/2 x 1 1/2	502	05835
4812-LR	2 x 2 x 1 1/2	502	05865
4812-LR	3	501	05852
4812-LR	3 x 3 x 1 1/2	502	05837
4812-LR	3 x 3 x 2	502	05857
4812-LR	4	501	05860
4812-LR	4 x 4 x 2	502	05863
4812-LR	4 x 4 x 3	502	05864
4814	1 1/2	444-X	05997
4814	2	444-X	05998
4814	3	444-X	05999
4814	4	444-X	06000
4816	1 1/2	105-X	06001
4816	2	105-X	06002
4816	3	105-X	06003
4816	4	105-X	06004
4816	6	105-X	06005
4817	1 1/2	116	05977
4817	2	116	05978
4817	3	116	05979
4817	4	116	05980
4817	6	116	06057
4817	8	—	06058
4818	1 1/4	—	05937
4818	1 1/2	106	05938
4818	2	106	05939
4818	3	106	05941
4818	4	106	05942
4818	6	106	06146
4834	1 1/2	611	05838
4834	2	611	05839
4834	2 x 2 x 1 1/2 x 1 1/2	612	05847
4834	3	611	05840

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
4834	3 x 3 x 1 1/2 x 1 1/2	612	05843
4834	3 x 3 x 2 x 2	612	05844
4834	4	611	05841
4834	4 x 4 x 2 x 2	612	05845
4834	4 x 4 x 3 x 3	612	05846
4834	6	611	05842
4834	6 x 6 x 4 x 4	—	06142
4835	1 1/2	428	05812
4835	2	428	05813
4835	2 x 2 x 1 1/2 x 1 1/2	429	05817
4835	3	428	05814
4835	3 x 3 x 1 1/2 x 1 1/2	429	05818
4835	3 x 3 x 2 x 1 1/2	—	—
4835	3 x 3 x 2 x 2	429	05820
4835	4	428	05815
4835	4 x 4 x 2 x 2	429	05240
4835	4 x 4 x 3 x 3	429	05821
4835-9	3 x 3 x 3 x 3 x 1 1/2	—	—
4835-9	3 x 3 x 3 x 3 x 2	438	05772
4835-9	4 x 4 x 4 x 4 x 2	438	—
4835-9-9	3 x 3 x 3 x 3 x 2 x 2	439	05770
4835-9-9	4 x 4 x 4 x 4 x 2 x 2	—	—
4835-B	2	500	05246
4835-B	2 x 1 1/2 x 1 1/2 x 1 1/2	500	05247
4835-B	2 x 1 1/2 x 2 x 2	—	—
4835-B	3	500	05249
4835-B	3 x 2 x 3 x 3	—	05250
4836	2	—	—
4836	2 x 2 x 1 1/2 x 1 1/2	507	—
4836	3	507	06032
4836	3 x 3 x 2 x 2	—	—
4836	4	507	06033
4836	4 x 4 x 2 x 2	—	—
4836	4 x 4 x 3 x 3	—	—
4837	1 1/2	327	06045
4837	2	327	06046
4837	2 x 1 1/2 x 1 1/2	327	06049
4837	3	327	06047
4837	4	—	06048
4848-A	4 x 3	820	05920
4851	4	800	05902
4851	4 x 3	800	05903
4851-2	4 x 3	801	05919
4851-2-A	4	812	05229
4851-2-A	4 x 3	812	05228
4851-3	4 x 3	—	—
4851-4	4 x 3	—	—
4851-A	4	811	05226
4851-A	4 x 3	811	05227
4853	3 or 4	815	05255

PVC-DWV Figure Number Comparison

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
4853-KO	3 or 4	815-KO	05257
4853-NS	3 or 4	—	—
4855	4	800-KO	05253
4855	4 x 3	800-KO	05254
4860	1½	319	05895
4860	2	319	05896
4860	3	319	05897
4860	4	319	05982
4860-2	1½	320	06020
4860-2	2	320	06021
4860-2	3	320	06022
4860-2	4	320	06023
4861	3 x 3 x 1½	—	06028
4861	3 x 3 x 2	—	06027
4861-LH	3 x 3 x 1½	303	06041
4861-LH	3 x 3 x 2	303	06042
4861-LH	4 x 4 x 2	303	06043
4861-2-LH	3 x 3 x 2	—	—
4870	3 x 3 x 3 x 1½ x 1½	—	05810
4870	3 x 3 x 3 x 2 x 2	418	05811
4870	4 x 4 x 4 x 2 x 2	418	05808
4871	3 x 3 x 2 x 2	—	—
4871	3 x 3 x 3 x 1½	416	05781
4871	3 x 3 x 3 x 2	416	05782
4871	4 x 4 x 4 x 2	416	05784
4872	3 x 3 x 2 x 2	—	—
4872	3 x 3 x 3 x 1½	417	05795
4872	3 x 3 x 3 x 2	417	05796
4872	4 x 4 x 4 x 2	417	05797
4878	1½	—	06471
4878	2	—	06472
4879	1½	700	06466
4879	2	700	06467
4879	3	700	06468
4879	4	700	06469
4881	1½	—	06471
4884	1½	707-X	05223
4884	2	707-X	05224
4885	1½	706-X	05214
4885	2	706-X	05222
4885	3	706-X	05230
4885	4	706-X	05231
4885-WB	2	—	—
4891	1½ x 3 x 6	720-X	06100
4892	1¼	—	—
4892	1½	—	—
4892	1½ x 1¼	—	—
4892-C	1½	711-X	—
4892-C	1½ x 1¼	—	—

NIBCO FIG. NO.	SIZE	CHARLOTTE FIG. NO.	MUELLER FIG. NO.
4892-C	1½	711-X	—
4892-C	1½ x 1¼	—	—
4893	1½ or 1½ x 1¼	711-P	05220
4895	1¼	708-P	05921
4895	1½	708-P	05215
4895	2	708-P	05216
4895-3	1½	—	—

NIBCO Limited Warranty

*Applicable to NIBCO INC. Plumbing Plastic
Fittings and Valves*

NIBCO INC. warrants each NIBCO plumbing plastic fitting (including plumbing valves) to be free from defects in materials and workmanship under normal use and service for a period of five (5) years from the date of purchase.

In the event any defect occurs which the owner believes is covered by this Warranty, the owner should immediately contact NIBCO INC., Technical Services, either in writing or by telephone call, (888) 446-4226 or (574) 523-3480. The owner will be instructed to return said fitting or valve, at the owner's expense, to NIBCO INC. or an authorized NIBCO INC. representative for inspection. In the event said inspection discloses to NIBCO INC.'s satisfaction that said fitting or valve is defective, a replacement shall be mailed free of charge to the owner, and NIBCO INC. shall further pay the installing contractor the sum of ten (\$10.00) dollars to apply on the cost of installation of said replacement fitting or valve.

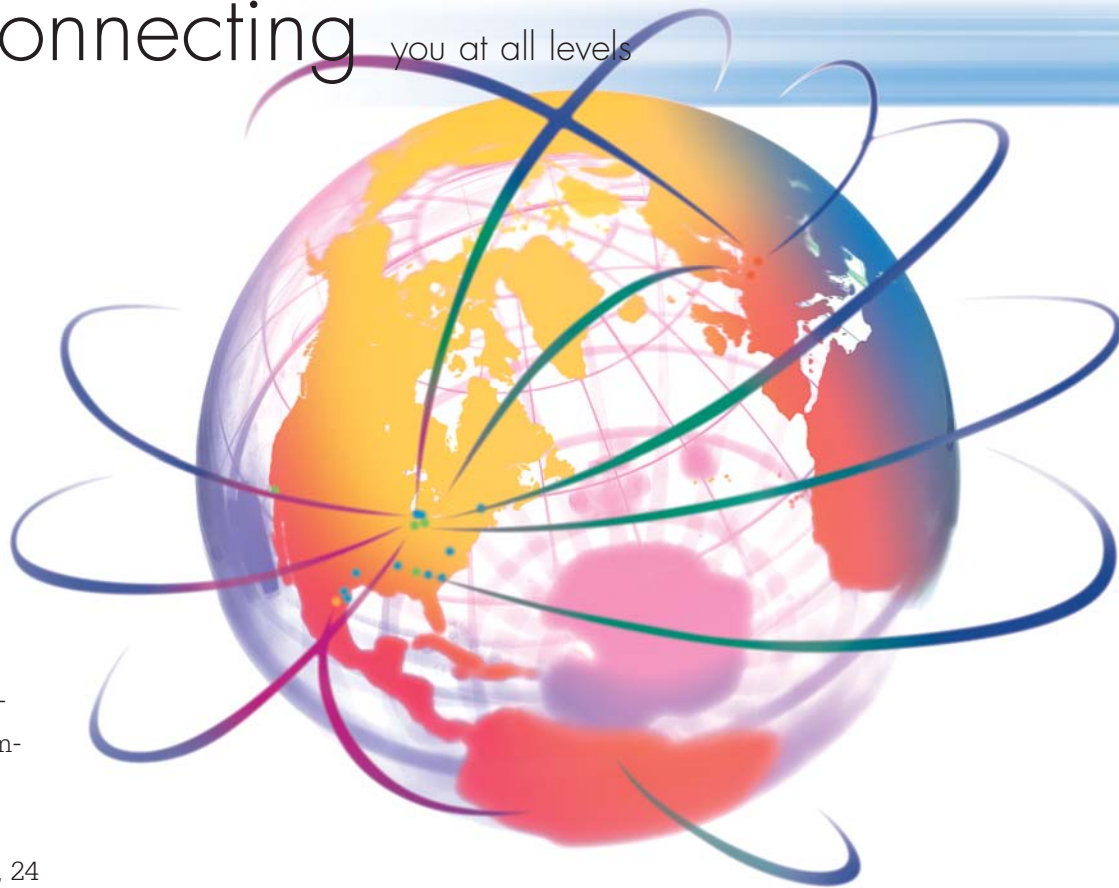
TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY SPECIFICALLY EXCLUDES INCIDENTAL AND CONSEQUENTIAL DAMAGES OF EVERY TYPE AND DESCRIPTION RESULTING FROM ANY CLAIMED DEFECT IN MATERIAL OR WORKMANSHIP, INCLUDING BUT NOT LIMITED TO, PERSONAL INJURIES AND PROPERTY DAMAGES. Some states do not allow the exclusion or limitations of incidental or consequential damages, so these limitations may not apply to you. **TO THE EXTENT PERMITTED BY LAW, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION.**

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Notes

Notes

globally connecting you at all levels



It's a new age of business, and a new way at NIBCO. From Elkhart, Indiana to Lodz, Poland, and points beyond, our company has integrated manufacturing, distribution, and networked communications to provide a seamless source of information and service, 24 hours a day, 7 days a week. But this integration hasn't happened overnight. It's been part of a long-term strategic process that has pushed us to reconsider every aspect of our business. The result? We're a vertically integrated manufacturer with the products and systems in place to deliver low cost and high quality. NIBCO's products are manufactured under a Quality Management System conforming to the current revision of ISO-9001 International Standards. We know the flow control industry is only going to get more demanding, and we are more than ready. We will continue to lead. That's what NIBCO is all about.



NIBCO® DURA-PEX® Piping Systems • NIBCO® Press System®

FITTINGS



Wrot and cast copper pressure and drainage fittings • Cast copper alloy flanges
• Wrot and cast press fittings • ABS and PVC DWV fittings • Schedule 40 PVC pressure fittings • CPVC CTS fittings • CPVC CTS-to-metal transition fittings • Schedule 80 PVC and CPVC systems • CPVC metric piping systems • CPVC BlazeMaster® fire protection fittings

BlazeMaster® is a registered trademark of The Lubrizol Corporation.

VALVES & ACTUATION

Pressure-rated bronze, iron and alloy-iron gate, globe and check valves • Pressure-rated bronze ball valves • Boiler specialty valves • Commercial and industrial butterfly valves • Circuit balancing valves • Carbon and stainless steel ball valves • ANSI flanged steel ball valves • Pneumatic and electric actuators and controls • Grooved ball and butterfly valves • High performance butterfly valves • UL/FM fire protection valves • MSS specification valves • Bronze specialty valves • Low pressure gate, globe, check and ball valves • Frostproof sillcocks • Quarter-turn supply stops • Quarter-turn low pressure valves • PVC ball valves • CPVC CTS ball valves • Just Right® recirculating valves



CHEMTROL®



Thermoplastic pipe, valves and fittings in PVC, Corzan® CPVC, polypropylene and PVDF KYNAR® • Pneumatic and electric actuation systems

Corzan® is a registered trademark of The Lubrizol Corporation. • KYNAR® is a registered trademark of Arkema Inc.

TOLCO®

Pipe attachments • Structural attachments • Pipe rollers • Threaded products and accessories • Seismic components • Standard and specialty supports • Markets served include commercial, industrial & fire protection



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