



LabWaste®

CPVC Corrosive Waste
Drainage Systems

TECHNICAL INFORMATION & INSTALLATION GUIDE

DECEMBER 25, 2022

SUPERSEDES ALL PREVIOUS EDITIONS

Manufactured to ASTM F 2618
NSF® cw Certified For Corrosive Waste



Assessed to ISO 9001: 2015
Certificate number 293



Visit our website
www.spearsmfg.com



LW-4-1222



TABLE OF CONTENTS

LabWaste® Overview.....	2	Limestone Chips.....	10
Applicable Conformance Standards & Certifications.....	3	Limestone Chip Usage.....	10
Flammability & Surface Burning Characteristics.....	3	General Maintenance Guidelines.....	10
LabWaste® Custom System Accessories..	4	System Pressure Testing.....	11
LabWaste® Technical Information.....	5	Supplemental Equipment Not Specified in this Manual.....	11
Typical Physical Properties of LabWaste® CPVC Material.....	5	System Integrity.....	11
Pipe & Fittings.....	6	Sample Engineering Specification.....	11
Expansion & Contraction.....	6	Neutralization Tanks.....	12
Joining Methods.....	7	Product Dimensions.....	14
Recommended Set & Cure Times.....	7	Chemical Resistance Information.....	51
Avg. Number of Joints per Quart.....	7	Chemical Resistance Table.....	52
Threading Joints.....	8	Product Limited Lifetime Warranty.....	55
Transition Couplings to other Systems.....	8		
Support Spacing.....	9		
Underground Installation.....	9		
Neutralization Tanks.....	10		
Tank Sizing Table.....	10		



Contact Spears® for any Information not found.



Proven Solvent Cement Joining Eliminates Troublesome Fusion Equipment, Mechanical Joints & Elastomer Problems

NSF® Certified for Corrosive Waste Use & Listed to ASTM F 2618 Specification for CPVC Pipe & Fittings for Chemical Waste Drainage Systems & CSA B181.2-2018 PVC & CPVC Drain, Waste, and Vent Pipe and Pipe Fittings • Listed by ICC-ES PMG 1018 for Compliance with the International Plumbing Code & Uniform Plumbing Code • Listed by ICC-ES PMG 1278 for Compliance with ASTM E84 25/50 Requirements of the International Mechanical Code & Uniform Mechanical Code



- Complete System of Pipe, Fittings & Adapters
- Meets 25/50 Flame & Smoke Requirement for use in Return Air Plenums
- Non-Pressure Drainage Service to 220° F
- All CPVC Construction in a Full Assortment of Standard DWV Patterns
- Accessories including Drains, Neutralization Tanks, and Dilution Traps
- Specially Formulated One-Step Solvent Cement Provides Chemical Resistance Equal to System Pipe & Fittings - Now in Special Yellow Color

Chemical & Corrosion Resistant CPVC

One of the key advantages of Spears® LabWaste® CPVC System is its excellent resistance to a broad range of corrosive environments. CPVC is inert to most mineral acids, bases, salts and aliphatic hydrocarbons, and compares favorably to other plastics in these chemical environments.

General Chemical Resistance Overview:

Weak Acids	Excellent	Salts	Excellent
Strong Acids	Excellent	Aliphatic Solutions	Good
Weak Bases	Excellent	Halogens	Good-Fair
Strong Bases	Excellent	Strong Oxidants	Good-Fair

The LabWaste® CPVC System has been developed for use in Academic, Research, and Institutional Laboratory chemical waste drainage applications. These plumbing systems are characterized by the routine disposal of a wide variety of hot and cold chemical wastes in accordance with prudent laboratory practices for drainage disposal.

Manufactured to ASTM F 2618 in Full Line of Drainage Pattern Fitting Configurations

Spears® broad line of LabWaste® CPVC pipe & fittings are manufactured to ASTM F 2618 Specifications for CPVC Pipe & Fittings for Chemical Waste Drainage Systems and produced in ASTM D 3311 drainage patterns or to manufacturer's specifications. Standard configurations are available in nominal sizes of 1-1/2" through 24" with many specialty fittings and accessories, like dilution traps, (water dilution being critical in the prevention of exothermic chemical interactions within all plumbing systems).

Made in the U.S.A.

NSF® Certified For Corrosive Waste

Spears® LabWaste® Corrosive Water Drainage System of pipe, fittings, and cement is certified for use in corrosive waste systems by NSF International to ASTM F 2618, CSA B181.2-2018 and ICC-ES Listed to PMG-1018, CPVC Chemical Waste Systems, for compliance to the International Plumbing Code and the Uniform Plumbing Code (See PMG Listing No. PMG-1018 at www.icc-es-pmg.org).

Cost Saving Solvent Weld Joining Eliminates the need for Electro-Fusion Joints and for Mechanical Joint Connections in Concealed Spaces

A proven joining method reliably used for over 50 years, Solvent Cement Welding requires no special tools, no costly fusion, easy installation, repairs or alterations. Most importantly, solvent cement joints end problems typical of polypropylene system installation, such as mechanical connector pullout, maintaining mechanically sealed joints, leaks from fusion wire corrosion, and cumbersome fusion joining methods. Saves time, saves cost, saves worry!

A Flame & Smoke Rated Piping System

Spears® LabWaste® system components have tested dry Listed by ICC-ES PMG 1278 for Compliance with ASTM E84/UL723 Tests for Surface Burning Characteristics having a flame spread of <25 and a smoke developed index of < 50 meeting the requirements of the International Mechanical Code and Uniform Mechanical Code for use in return air plenums (See PMG Listing No. PMG-1278 at www.icc-es-pmg.org). LabWaste® is additionally Listed by Underwriters Laboratories of Canada (ULC®) under CAN/ULC S102.2 for Surface Burning Characteristics of less than 25/50.



Applicable Conformance Standards & Certifications

Spears® LabWaste® CPVC Corrosive Waste Drainage System is a complete system of pipe, fittings and solvent cement independently (3rd party) tested, evaluated and certified by the following laboratories and agencies. Each of these approvals is routinely monitored through an ongoing program of periodic inspection and testing by the certifying agency.

- **ASTM F 2618** - Certified for corrosive waste and use by NSF International (NSF® cw) in accordance with ASTM F 2618, *Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems*.
- **Uniform Plumbing Code** - Certified for use in accordance with the Uniform Plumbing Code (UPC®) by NSF International as specified in IAPMO IGC 210, *Interim Guide Criteria for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Limited Chemical Waste Drainage System*. (NSF® U.P.Code).
- **International Plumbing Code** - Spears® LabWaste® CPVC system has been approved for use in accordance with the International Plumbing Code (IPC®) by the International Codes Council Evaluation Services (ICC-ES) in accordance with ICC-ES PMG Listing PMG-1018 for Spears® LabWaste® CPVC Corrosive Waste Drainage System (See ICC-ES PMG Listing PMG-1018 at www.icc-es-pmg.org).
- **Uniform Mechanical Code** - Listed by the International Codes Council Evaluation Services (ICC-ES PMG) in accordance with ASTM E84 and UL® 723 for compliance with requirements of the Uniform Mechanical Code® (UMC) for use in return air plenums by having a Flame Spread/ Smoke Development of less than 25/50, respectively, under listing number PMG-1278. (See PMG Listing No. PMG-1278 at www.icc-es-pmg.org).
- **International Mechanical Code** - Listed by the International Codes Council Evaluation Services (ICC-ES PMG) in accordance with ASTM E84 and UL® 723 for compliance with requirements of the International Mechanical Code® (IMC) for use in return air plenums by having a Flame Spread/ Smoke Development of less than 25/50, respectively, under listing number PMG-1278. (See PMG Listing No. PMG-1278 at www.icc-es-pmg.org).
- **Canadian Surface Burning Characteristics** - by Underwriters Laboratory of Canada (ULC®) for evaluation of Flame Spread and Smoke Density in accordance with CAN/ULC S102.2 for finished product having a Flame Spread/ Smoke Development of less than 25/50, respectively.
- **Canadian Standards Association** - Certified for corrosive waste and use by NSF International (NSF®-cw) in accordance with CSA B181.2-2018 - PVC & CPVC Drain, Waste, and Vent Pipe and Pipe Fittings and ASTM F 2618, Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems.
- **UL 2818 Performance Certification** - Certified by Underwriters Laboratories (UL®) for conformance to UL 2818 Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings. This GREENGUARD GOLD Certification provides eligibility for LEED® credits when installing LabWaste® in a green building projects.

Flammability & Surface Burning Characteristics

Flammability	UL94	UL94: <i>Tests for Flammability of Plastic Materials</i>
Material Rating	V-0	
Flame & Smoke Rating	CAN/ULC S102.2 Listed ¹ UL 723/ASTM E 84 Tested ²	
Flame Spread:	<25	CAN/ULC S102.2: <i>Surface Burning Characteristics</i> UL723/ASTM E 84: <i>Surface Burning Characteristics</i> (NFPA 255, ANSI/UL 723 and UBC 8-1)
Smoke Developed:	<50	

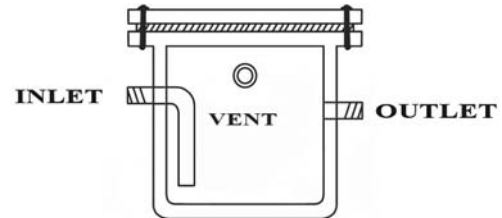
Notes:
 1 - ULC® listing based on test of finished product, pipe and fittings solvent cement welded as assemblies.
 2 - UL 723/ASTM E 84 test by Southwest Research Institutes™ (SwRI™) Department of Fire Technology under project No. 1.10083.01.269d, September 20, 2004, test of empty (dry) CPVC pipe with dry fit end caps and material in the ceiling position.

Spears® LabWaste® Custom System Accessories

Acid Neutralization/Dilution Tanks for Use With LabWaste® CPVC Systems

Neutralization or dilution tanks are required by codes for the purpose of neutralizing corrosive wastes. Corrosive liquids, spent acids or other harmful chemicals that destroy or injure a drain, sewer, soil or waste pipe, or create noxious or toxic fumes or interfere with sewage treatment processes are prohibited from being discharged into the plumbing system without being neutralized or treated. Spears® offers a standard selection of HDPE tanks in 5 gallon to 3000 gallon capacities and CPVC tanks in 5 gallon to 55 gallon capacities to meet these needs. Tanks can also be produced in virtually any custom size, shape, or connection configuration. Contact Spears® Technical Services with desired specifications for custom quotation. See Spears® SPS-1, **LabWaste®** Neutralization Tanks & Accessories for additional information on the following features and options.

- CPVC Tanks 5-gallon to 55-gallon
- HDPE Tanks 5-gallon to 3000-gallon
- Optional Vented Tanks
- Socket (CPVC), Thread or Flanged Connection
- Inspection & Manhole Port Options
- Pedestrian or Vehicular Traffic Cover Options
- Tank Extension Options
- Limestone Chip Neutralization Medium



LabWaste® Floor Drains & Cleanouts

Spears® LabWaste® CPVC Floor Drains are available for connection to 1-1/2" through 4" drainage pipe. Standard drains have adjustable 5" round CPVC grates and can be ordered with optional CPVC 1/8" perforated sediment strainer to trap debris. CPVC drains also available with adjustable round Stainless Steel grates in 5", 6", 7" or 8" diameters. Standard CPVC Floor Cleanouts have 5" round, adjustable Stainless Steel access covers. All Floor Drains and Floor Cleanouts are available with optional membrane plate for clamping housing to waterproof membranes when used in floor installations.





LabWaste® Technical
LabWaste® Technical Information

Typical Physical Properties of Spears® LabWaste® CPVC Material

Property	Test Method	Typical Value
Mechanical Properties @ 73°F		
Specific Gravity		1.49
Tensile Strength, psi	ASTM D 792	9000
Tensile Modulus, psi	ASTM D 638	420,000
Flexural Strength	ASTM D 638	12,000
Izod Impact (notched @73°F)	ASTM D 790	
Fittings	ASTM D 256	3.0
Pipe		5.5
Thermal Properties		
Heat Deflection Temperature 264 psi	ASTM D 648	
Fitting		214°F
Pipe		230°F
Thermal Conductivity, BTU/hr/sq ft/°F/in	ASTM C 177	.95
Coefficient of Linear Expansion, in/in/°F	ASTM D 696	3.2 x 10 ⁻⁵
Flammability		
Limiting Oxygen Index	ASTM D 2863	60
UL 94 Rating		
	UL 94	V-0, 5VB
Flame & Smoke Rating¹		
Flame Spread	CAN/ULC S 102.2	<25
Smoke Developed	UL 723/ASTM E 84	<50
Solvent Cement		
	ASTM F 2618/ASTM F 493	Heavy Body; Mustard Yellow Color

Typical Physical Properties data is based on information from material suppliers. It is provided as a guideline for service and is not to be considered a warranty of performance.

¹- Based on test of physical product, including solvent cement welded pipe and fittings assemblies, as opposed to test of material only.

Fire Resistance

Material used in Spears® LabWaste® CPVC systems has a UL 94 flammability rating of V-0, 5VB. Pipe and fittings have been listed and rated based on *finished product* tests, as opposed to a material test only, for surface burning characteristics of flame spread and smoke density developed by Underwriters Laboratories of Canada under standard test method CAN/ULC S102.2. Additional test of LabWaste® pipe with dry fit caps was conducted by Southwest Research Institute™ (SwRI™) Department of Fire Technology under UL 723/ASTM E 84 (modified to test finished product). Pipe and fitting components ratings are below the 25 maximum flame spread and 50 maximum smoke density developed typically required for exposed air plenum installation. Check local codes for acceptability. Use of approved plenum wrap or transition connectors to other material may be used if required.



Pipe & Fittings

Spears® **LabWaste®** CPVC pipe and fittings are produced to the dimensional and performance requirements of ASTM F 2618, **Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems**. **LabWaste®** CPVC fitting configurations are produced to applicable DWV patterns of ASTM D 3311, **Standard Specification for Drain, Waste, and Vent (DWV) Plastic Fittings Patterns**, plus various specialty patterns and manufactured specified configurations not included in D 3311. All drainage fittings with 90° angles (sanitary tees, elbows, etc.) have socket pitch to maintain approximately 1/4" per foot drainage. **LabWaste®** CPVC pipe is produced to dimensions specified in ASTM F 2618 with sizes greater than 12" produced to Schedule 40 dimensions of ASTM F 441, **Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedule 40 and 80**.

Schedule 40 CPVC Pipe Dimensions (inch)

Pipe Diameter	1-1/2	2	3	4	6	8	10	12	14	16	18	20	24
Avg. O.D.	1.900	2.375	3.500	4.500	6.625	8.625	10.750	12.750	14.000	16.000	18.000	20.000	24.000
Avg. I.D.	1.592	2.049	3.042	3.998	6.031	7.943	9.976	11.889	13.073	14.940	16.809	18.743	22.544
Min. Wall	.145	.154	.216	.237	.280	.322	.365	.406	.437	.500	.562	.593	.687

Expansion & Contraction

Spears® **LabWaste®** CPVC products, like all piping materials, expand and contract with changes in temperature. If the coefficient of linear expansion is 3.2×10^{-5} in./in. °F, a 25°F change in temperature will cause an expansion of 1 inch for a 100-foot straight length. For most operating and installation conditions, expansion and contraction can be accommodated at changes of direction, or simple expansion loops can be used. For underground installations, snaking the pipe in the trench can be used where necessary to accommodate expansion and contraction.

Thermal expansion change in length is calculated from Length of Run in feet, expected Change in Temperature and given Coefficient of Linear Thermal Expansion of 3.2×10^{-5} in./in. °F for CPVC:

$$\Delta L = 12eL (\Delta T)$$

Where:

$$e = 3.2 \times 10^{-5} \text{ in./in. } ^\circ\text{F}$$

L = Length of Run in feet

ΔT = Temperature Change in °F

Example:

How much will a 50 ft. run Spears® **LabWaste®** pipe expand if the expected ambient temperature will range from 45°F to 85°F?

$$\Delta L = 12eL (\Delta T)$$

$$\Delta L = 12 \times .000032 \times 50 \times 40$$

$$\Delta L = .768 \text{ inches}$$

The following table provides quick reference in identifying expansion length change for different run lengths of pipe at various anticipated temperature changes.

Thermal Expansion Table

Length of Run (L) in feet	Length Change in Inches (ΔL) for Specified Change in Temperature (ΔT)								
	20°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F
10	.08	.12	.15	.19	.23	.27	.31	.35	.38
20	.15	.23	.31	.38	.46	.54	.61	.69	.77
40	.31	.46	.61	.77	.92	1.08	1.23	1.38	1.54
50	.38	.58	.77	.96	1.15	1.34	1.54	1.73	1.92
70	.54	.81	1.08	1.34	1.61	1.88	2.15	2.42	2.69
90	.69	1.04	1.38	1.73	2.07	2.42	2.76	3.11	3.46
120	.92	1.38	1.84	2.30	2.76	3.23	3.69	4.15	4.61



Joining Methods

Spears® LabWaste® CPVC pipe and fittings are easily joined using Spears® LW-5 One-Step Solvent Cement that has been specially formulated for corrosive/acid waste applications and manufactured in accordance with ASTM F 493, **Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings**, as specified in ASTM F 2618. When cured, this cement provides a fused joint that maintains the same physical and chemical resistance properties as the CPVC components in the system. Spears® LW-5 is a "one-step" cement and does not require the use of primer. Spears® LabWaste® CPVC systems may be additionally joined using threaded (NPT) or flanged connections where removal or connection to supplementary equipment is required. Special transition couplings are available for joining to Polypropylene, PVDF, glass or Duriron systems.

Solvent Cement Joints - Store below 90°F (33°C). Stir and use as is. If jelled, replace. Use within 2 years of date stamped on can. This cement is designed for use without a Primer. Check local code requirements before using Spears® LW - 5 cement.

1. Cut pipe square, deburr and chamfer (bevel 10° to 15°). Clean and dry joining surfaces.
2. Check dry fit. For interference fit, pipe should push 1/3 - 2/3 way into fitting snugly.
3. Use a suitable applicator at least 1/2 size of pipe diameter; for larger sizes use brush or roller.
4. Apply a full even layer of cement on the pipe equal to the socket depth. Coat the fitting socket with a medium layer. Avoid excess and puddling. If necessary, apply a second full layer on pipe.
5. Assemble while cement is wet. If not wet, recoat all parts before assembly. Assure pipe bottoms into fitting socket using a 1/8 to 1/4 turns twist. To avoid push out and allow for initial set, hold for about 30 seconds. Wipe off excess. Handle newly assembled joints carefully.

An Initial Set time is recommended to provide good handling strength after which the joint will handle normal stresses of installation. Cure Time is the recommended waiting period prior to placing the joint into service and before any pressure testing of the system. Set and cure times are relative to temperature at time of installation. Best results are obtained at temperatures between 40° and 110°F. Due to the many field variables, these should be used as a general guide only.

Recommended Set & Cure Times

Temperature	Initial Set	Cure
60°F - 100°F	30 min.	1 hr.
40°F - 60°F	1 hr.	2 hrs.
0°F	2 hrs.	4 hrs.

In moist or humid conditions (relative humidity above 60%) allow 50% more cure time.

Average Number of Joints per Quart of LW-5 One-step Cement

Pipe Diameter	1-1/2	2	3	4	6	8	10	12	14	16
No. of Joints	90	60	40	30	10	5	2-3	1-2	3/4	1/2-3/4

Estimate based on laboratory tests. Due to many field variables, these figures should be used as a general guide only.



Threaded Joints - Spears® Manufacturing Company highly recommends the use of Spears® **BLUE 75™** thread sealant, which has been tested for compatibility with Spears® products. Please follow the sealant Manufacturer's Application/Installation instructions. Choice of another appropriate thread sealant is at the discretion of the installer.

WARNING: Some pipe joint compounds or pastes may contain substances that could cause stress cracks in CPVC. For transitions to metal threaded systems, all cutting oils must be removed and the metal pipe thoroughly flushed and degreased prior to assembly with CPVC systems.

1. Apply joint sealant to the male pipe threads **ONLY**.
2. Thread joint hand tight for initial assembly.
3. Using commercial strap wrenches tighten 1 to 2 turns beyond hand tight; avoid overtightening. **DO NOT** use conventional pipe wrenches that can damage plastic fittings.

If a tape sealant is used:

1. Use PTFE tape no less than 3.5 mil thick.
2. Initial wrap must fully cover the thread end.
3. Wrap clockwise with standard pipe threads.
4. Use only 2-3 wraps of tape.



DO NOT use combination of paste and tape sealants.

Flanged Connections - Solvent cement flange hub to pipe according to preceding instructions. Use full faced, 1/8" thick gaskets of a material suitable for the intended application having a Shore "A" durometer of approximately 70. Use of well lubricated bolts and flat washers is required. Bolts must be tightened in a 180° opposing pattern to the recommended torque values.

Flange Size (in.)	Bolt Torque (ft.-lb.)	Torque Sequence
1-1/2	12	
2-4	25	
6-8	40	
10	64	
12	95	
14-16	110	

LabWaste® Transitions To Other Systems - Spears® **LabWaste®** Corrosive Waste Drainage System provides a complete line of transition fittings for use with other corrosive waste piping materials for system additions and retrofits.

P099 Transition Coupling: Hub x Compression. Allows connection of **LabWaste®** to Polypropylene or PVDF pipe and solvent cement socket connection to CPVC system. A safety groove must be cut into the Polypropylene or PVDF pipe to resist pull out. A groove cutting tool is available from Spears®

P093 Elastomer Transitions Coupling For Glass: IPS Clamp Joint x Glass Clamp Joint. Allows mechanical connection of **LabWaste®** CPVC pipe to plain end Kimax® glass pipe. Consists of high performance fluoroelastomer (FKM) sleeve, an outer stainless steel shear ring and two AISI 301 stainless steel clamping bands.

P098 Glass Transition Coupling: Spigot x Bead Clamp. Allows mechanical connection of **LabWaste®** to beaded-end glass drainage pipe. Coupling consists of a CPVC beaded-end matching glass pipe bead and CPVC pipe diameter spigot end for solvent cement connection. This requires a glass system's mechanical connector, available from Schott Scientific Glass, part# 6650-XXXX Bead-to-Bead end.

P094 Elastomer Transitions Coupling For Duriron®: IPS Clamp Joint x Duriron® Clamp Joint. Allows mechanical connection of **LabWaste®** CPVC pipe to plain end Duriron® pipe. Consists of high performance fluoroelastomer (FKM) sleeve, an outer stainless steel shear ring and two AISI 301 stainless steel clamping bands.

P095 Duriron® Mechanical Transition Fitting: Mechanical Joint x CPVC Pipe Size. Allows mechanical connection of **LabWaste®** to Duriron® (siliconized iron) pipe. Fitting consists of Duriron® pipe diameter spigot (male pipe end) and CPVC pipe diameter spigot end for solvent cement connection. Requires use of Duriron® Mechanical Joint Coupling that consists of an inner sleeve of PTFE surrounded by an outer sleeve of Neoprene rubber held in place by a stainless steel coupling. Duriron® Mechanical Joint Coupling available through Flowserve.

P097 Duriron® Caulk Transition Coupling: Spigot x Caulk Joint. Allows caulk-joint connection of **LabWaste®** pipe to Duriron® borosilicate systems. Coupling consists of Duriron® pipe diameter male end for mating to Duriron® belled pipe end and CPVC pipe diameter spigot end for solvent cement connection. This requires use of special chemical acid-resistant oakum packing available from Flowserve (Red Stripe Sealite A312 Rope) and plastic lead/caulk purchased from others. **DO NOT** use hot lead or oiled Oakum for this type of caulk-joint.



P096 Grooved Coupling Adapter: Groove x Socket. Allows connection of the **LabWaste®** to grooved metal piping systems. Requires use of a Metal Grooved Coupling with gasket. A flexible style grooved coupling must be used for plastic only. **Do not use rigid style couplings.** Use either Victaulic Flexible Grooved Couplings Part # 75 & 77 or Gruvlok Flexible Grooved Couplings Part # 7001 & 7000.

Please contact Spears® for special construction of any system transition connection needs not specified.

Support Spacing

Spears® **LabWaste®** CPVC systems should be properly supported to avoid stress caused by sagging and system component loads. Support should be given to concentrated system loads, such as flanges and where changes in direction occur. Such support should be made as close to fittings as possible, yet allow for movement due to expansion and contraction.

Conventional pipe hangers and brackets can be used. However, hangers must **NOT** be used to pull the piping system into position or overtightened to either restrict necessary movement or cut into pipe. Hangers should be smooth, free of burrs and provide as much load-bearing surface as possible.

Systems should be supported in accordance with applicable plumbing codes. Check local codes for additional requirements. The following chart shows recommended horizontal support spacing for un-insulated continuous spans with no concentrated loads. This information is provided as a general guideline. Local codes, engineering specifications, and system installation conditions may require significant variations.

Recommended Hanger Spacing (feet)

Pipe Diameter	1-1/2	2	3	4	6	8	10	12	14	16
Hanger Spacing	6	6	7	7-1/2	8	9	10	10-1/2	11	12

Underground Installation

Spears® **LabWaste®** CPVC systems may be installed underground in a smooth, uniform trench bottom that supports the pipe over its entire length, free of rocks and debris. Subsoil should be stable to provide physical protection for the pipe and fittings. Where large boulders are not removed, trench should be padded with sand or fine-grained soil. Trench should be wide enough to provide room for joining pipe in the trench and to allow snaking from side-to-side to provide slack for future expansion-contraction. Install a larger size pipe as a sleeve where piping must pass through masonry walls. Use only solvent cement connection in underground piping. System should be tested in accordance with local plumbing codes prior to backfilling. Pipe should be surrounded with an initial backfill material having a particle size of 1/2" or less, free of sharp rock or debris and uniformly compacted in layers. Refer to ASTM D 2321, ***Underground Installation of Thermoplastic Pipe for Sewer and Other Gravity-Flow Applications***, for additional information on underground installations.

Acid Neutralization/Dilution Tanks for Use With LabWaste® CPVC Systems

Neutralization or dilution tanks are required by codes for the purpose of neutralizing corrosive wastes. Corrosive liquids, spent acids or other harmful chemicals that destroy or injure a drain, sewer, soil or waste pipe, or create noxious or toxic fumes or interfere with sewage treatment processes are prohibited from discharge into the plumbing system without being neutralized or treated. A variety of system designs and treatment methods can be used for neutralization and dilution. For proper performance, Spears® recommends use of professional assistance in analysis of the application, neutralization system design, equipment selection, and specific maintenance requirements.

Spears® offers a standard selection of HDPE in 5 gallon to 3000 gallon capacities and CPVC tanks in 5 gallon to 55 gallon capacities with a variety of connection and vent options, plus convenient 1-gallon Dilution Tank designed for under-sink installation. Tanks can also be custom produced in virtually any size, shape, or connection configuration, including custom double-containment tanks. Contact Spears® Technical Services with desired specifications for custom quotation. See SPS-1 Catalog - **LabWaste® CPVC Waste Drainage Systems**, for additional information, selection detail and available options such as venting, tank extensions, manhole ports, pedestrian and traffic covers.

Installation Considerations - Except for under-sink installations, tank should be located on the lowest floor or basement room. It is recommended that the tank be in a concrete vault on a smooth flat surface. Where necessary, tanks may be installed on sturdy sheeting or directly into the ground. In all cases, the surface must be capable of uniformly supporting the tank weight, including effluent and neutralization medium.

Neutralization tanks and tank extensions are not warranted for direct burial applications. Tanks must be properly placed and secured with no applied stresses, within a dry concrete vault. However, if direct burial is used without warranty, custom centerlines must be furnished from top of cover down to fitting centerline instead of specified tank bottom to fittings centerline since tank heights can vary. The top of the tank must remain accessible for servicing and clean out either directly or by manhole cover. Tanks may be installed under foot or light vehicle traffic with use of appropriate covers and support. Tanks themselves are not to be used to support traffic loading.

Avoid strain when installing the pipe to tank fitting connections. Tanks must **NOT** be supported by the inlet, outlet, or vent piping.

The following recommendation from the American Society of Plumbing Engineers (ASPE) may be used as a guideline for sizing tanks according to the number of lab sinks.



Neutralization Tank Sizing Table

Number of Lab Sinks	Tank Size	
	Gallons	Liters
2	5	18.9
4	15	56.8
8	30	113.6
16	55	208.2
22	75	283.9
27	90	340.7
30	108	408.8
40	150	567.8
50	175	662.4

Number of Lab Sinks	Tank Size	
	Gallons	Liters
60	200	757
75	275	1040.9
110	360	1362.6
150	500	1898.5
175	550	2081.8
200	650	2460.3
300	1200	4542
500	2000	7570
600	3000	11355

Limestone Chips for Acid Neutralization Tanks - Most state and local codes require the addition of a neutralization medium in acid waste tanks with the addition of water for dilution prior to discharge into a sanitary sewer system. Limestone must be 1" to 3" in diameter with a calcium carbonate content of at least 90%. Spears® offers high grade Limestone Chips having a calcium carbonate content of approximately 95%. The use of Limestone Chips is generally one of the best and least expensive means of acid neutralization, but may be used in conjunction with more sophisticated chemical treatments if necessary.

How Much Limestone to Use - The following is a guideline for pounds of Limestone Chips to use for one (1) tank filling (charge). It is recommended that sufficient quantity be ordered for more than one filling.

Tank Size Gallons	Approx. Pounds
5	50
15	100
30	200
55	500
100	1,000
150	1,750
175	1,900
200	2,500
275	3,200

Tank Size Gallons	Approx. Pounds
300	3,200
350	4,000
500	5,000
550	7,500
650	9,000
1200	11,000
2000	16,000
3000	25,000

General Tank Maintenance Guidelines - Tanks should be inspected routinely for accumulation of precipitated sludge and debris that must be cleaned out (usually scooped out) and for periodic addition of limestone and water if necessary. While once every one to three months may be sufficient, professional assistance should be sought to establish a proper schedule based on actual use. **Note:** Tank must be filled with water prior to carefully adding Limestone Chips to charge the system. Request instruction sheet.



System Pressure Testing

Spears® **LabWaste®** CPVC systems should be tested with water as follows, or according to local plumbing codes. Test only after sufficient joint cure (see "Recommended Set & Cure Time"). The system may be tested in its entirety or isolated at each floor or in sections for testing.

Close all openings tight except the highest opening and fill the system to the point of overflow. Fill the system slowly, being sure to allow all air to escape. A pressure test of ten (10) foot (3048 mm) head of water should be conducted for entire system or section tested. Allow the system/section under test to set 15 minutes before inspection for leaks.

Drain each section after inspection. Any leaking solvent cement joints should be cut from the system, replaced and retested after proper joint cure. Check any leaking mechanical joints for proper installation, applicable tightening, and presence of any debris in the joint. Reassemble and retest.

Supplemental Equipment Not Specified in this Manual

A variety of supplemental equipment including pump stations, laboratory workstations, and fume hoods are built to customer specifications. Standard Laboratory fixtures, floor drains, wall drains and traps plus manual or actuated valves are also available. Spears® can custom fabricate virtually any **LabWaste®** system component. Contact Spears® for additional needs or a custom quotation.

System Integrity

Spears® **LabWaste®** products have been developed and designed to be used as a total system consisting of pipe, fittings, accessories, solvent cement and thread sealant. All-Spears® **LabWaste®** components should be used in order to ensure a sound piping system. Substitution of other products for Spears® **LabWaste®** pipe, fittings, or solvent cement may be detrimental to system integrity and is not recommended. The Spears® Limited Lifetime Warranty (located on the back cover of this manual) does not cover problems occurring within the piping system as the direct result of non-use of Spears® **LabWaste®** system products.

Sample Engineering Specification

Special drainage systems for corrosive chemical or acid waste shall be manufactured from CPVC Type IV, minimum ASTM Cell Classification 23447. System pipe and fittings shall be certified by NSF International to the requirements of ASTM F 2618, The Standard Specification for Chlorinated Polyvinyl Chloride (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems, to the requirements of CSA B181.2 (cNSF-us-cw) for use in Canada and to the requirements of the Uniform Plumbing Code as applicable (NSF-U.P. Code) for use in corrosive waste drainage systems. **LabWaste®** pipe and fittings tested dry shall be listed by ICC-ES PMG to ASTM E84/UL723 having a flame spread of less than 25 and smoke developed index of less than 50. (See PMG Listing No. PMG-1278 at www.icc-es-pmg.org). **LabWaste®** pipe and fittings tested dry shall be listed by Underwriters Laboratories of Canada to CAN/ULC S102.2 having a flame spread of less than 25 and smoke developed index of less than 50 as designated on the pipe marking or fitting package labeling. **LabWaste®** pipe and fittings shall be approved and listed by ICC-ES PMG approved for use in accordance with the Uniform Plumbing Code (UPC) by the International Codes Council Evaluation Services (ICC-ES), in accordance with PMG Listing Criteria for Chlorinated Poly Vinyl Chloride (CPVC) System of Pipe Fittings and Solvent Cement Used in Chemical Waste Systems, LC1007 (See PMG Listing No. PMG-1018 at www.icc-es-pmg.org). All pipe markings shall be accompanied by a yellow stripe for identification as CPVC chemical waste drainage system. All **LabWaste®** pipe shall be certified by Underwriters Laboratories (UL) to UL 2818 GREENGUARD GOLD for low chemical emissions. All fittings shall be CPVC drainage patterns meeting the applicable requirements of ASTM D 3311 or the manufacturers specifications. Joining method for pipe and fittings shall be solvent cement welding. Solvent cement shall be a "one-step" primerless type CPVC cement specially formulated for resistance to corrosive chemicals and manufactured in accordance with ASTM F 2618 and F 493. Mechanical connections for special equipment connection or transition to other system materials shall be as specified by the CPVC system manufacturer. All pipe, fittings, and cement shall be supplied together as a complete system with a Lifetime Warranty, as Spears® **LabWaste®** CPVC Corrosive Waste Drainage Systems manufactured by Spears® Manufacturing Company.

LabWaste® Technical
Neutralization Tanks



Standard HDPE Round Neutralization/Dilution Tanks
Construction: HDPE - High Density Polyethylene

Tank Capacity US Gallons	Approx. Useable Capacity, US Gallons		Inside Dimension Dia x Ht. (in.)	Wall Thickness (in.)	Approx. Weight (lbs.)	Standard Inlet & Outlet Connection Size (in.)	Standard Fitting Connection	LabWaste® Transition Connection Fitting	Optional Vent Connection Size (in.)	Approx. Centerline Height (in.)		
	Without Limestone	With Limestone								Inlet	Outlet	Vent
5	3	1	11 x 14	3/16	10	1-1/2 or 2	Mipt	P101	1-1/2 or 2	11	8	12
15	7	2	18 x 15	3/16	20	1-1/2 or 2	Mipt	P101	1-1/2 or 2	11	8	12
30	19	6	18 x 29	3/16	35	3	Mipt	P101	2 or 3	23	19	25
55	35	12	22 x 36	3/16	50	4	Mipt	P101	3 or 4	27	23	31
100	77	26	28 x 42	1/4	85	4	Mipt	P101	3 or 4	35	31	37
150	105	35	31 x 48	1/4	100	4	Mipt	P101	3 or 4	38	34	42
175	135	45	30 x 60	1/4	125	4	Mipt	P101	3 or 4	51	47	54
200	137	46	36 x 48	1/4	125	4 or 6	Mipt/Flange	P101/854	4 or 6	38	34	42
275	186	62	42 x 48	1/4	160	4 or 6	Mipt/Flange	P101/854	4 or 6	38	34	42
300	230	76	36 x 74	5/16	175	4 or 6	Mipt/Flange	P101/854	4 or 6	61	56	65
350	243	81	48 x 48	5/16	200	4 or 6	Mipt/Flange	P101/854	4 or 6	38	34	42
500	395	132	52 x 60	3/8	225	4 or 6	Mipt/Flange	P101/854	4 or 6	51	47	54
550	447	149	48 x 72	3/8	275	4 or 6	Mipt/Flange	P101/854	4 or 6	64	60	67
650	548	183	48 x 84	3/8	375	4 or 6	Mipt/Flange	P101/854	4 or 6	75	71	76
1200	1052	351	69 x 84	3/8	600	4 or 6	Mipt/Flange	P101/854	4 or 6	74	68	76
2000 ¹	1559	521	84 x 84	1/2	850	4 or 6	Mipt/Flange	P101/854	4 or 6	74	68	76
3000 ¹	2203	735	95 x 97	1/2	1350	4 or 6	Mipt/Flange	P101/854	4 or 6	87	83	91

Standard CPVC Round Neutralization/Dilution Tanks
Construction: Chlorinated Polyvinyl Chloride (CPVC)

Tank Capacity US Gallons	Approx. Useable Capacity, US Gallons		Inside Dimension Dia. x Ht. (in.)	Wall Thickness (in.)	Approx. Weight (lbs.)	Standard ² Inlet & Outlet Connection Size (in.)	Standard Fitting Connection	LabWaste® Transition Connection Fitting ³	Optional ⁴ Vent Connection Size (in.)	Approx. Centerline Height (in.) ⁵		
	Without Limestone	With Limestone								Inlet	Outlet	Vent
5	5	3	12-3/8 x 15-1/2	3/16	20	1-1/2 or 2	Socket	Direct	1-1/2 or 2	11	8	12
15	15	7	17-11/16 x 17-1/4	3/16	35	1-1/2 or 2	Socket	Direct	1-1/2 or 2	11	8	12
30	30	18	17-5/8 x 33	3/16	54	3	Socket	Direct	2 or 3	23	18	25
55	55	35	23-1/2 x 38-1/2	1/4	70	4	Socket	Direct	3 or 4	27	23	31

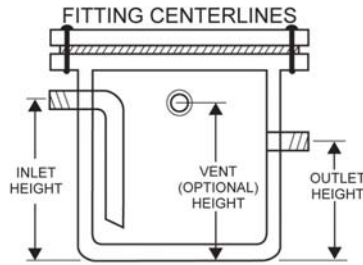
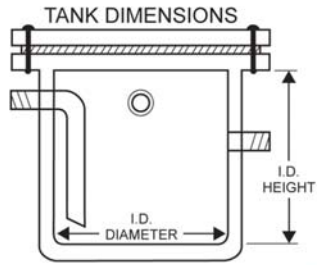
Important Notes

1. Larger HDPE tanks may include exterior steel banding or fiberglass reinforcement for additional strength. Special ordered optional inspection manhole ports are recommended for larger tanks (includes cover with neoprene gasket, stainless steel nuts, bolts, and washers).
2. All tanks can be special ordered with Mipt, Flanged (CL150), and Fipt connections or varying combinations other than standard connections specified. Inlets or vents may also be custom ordered for installation in covers instead of tank sides.
3. For transitions from Mipt HDPE tank connections to LabWaste® piping, use part numbers P101-xxxC, Female Adapter. CPVC tank sockets can be cemented directly to LabWaste® piping. For transitions from ALL flanged connections to LabWaste® piping, use part numbers 854-xxxC, Flange (xxx = size code).
4. Venting is required by codes but may be accomplished either at the tank or in-line.
5. Neutralization tanks and tank extensions are not warranted for direct burial applications. Tanks must be properly placed and secured with no applied stresses, within a dry concrete vault with use of a protective traffic cover as deemed appropriate. However, if direct burial is used without warranty, custom centerlines must be furnished from top of cover down to fitting centerline instead of specified tank bottom to fitting centerline since tank heights can vary.

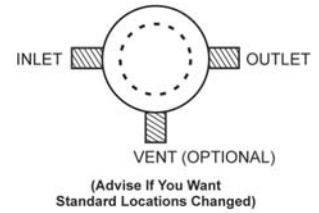


LabWaste® Technical Neutralization Tanks

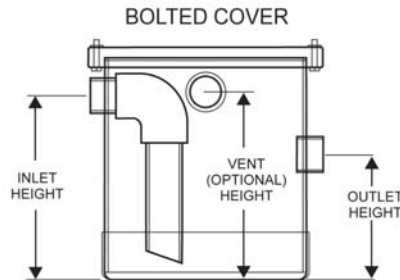
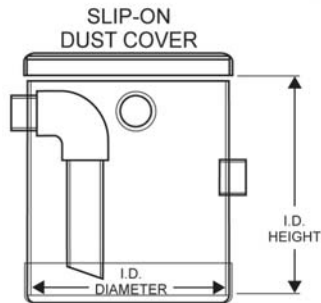
HDPE Tanks



TOP VIEW STANDARD FITTING LOCATIONS

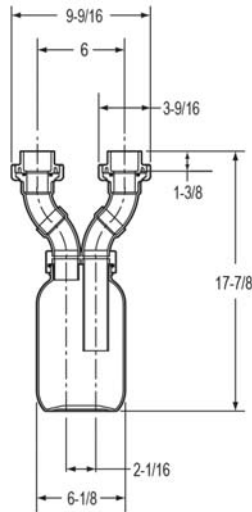


CPVC Tanks

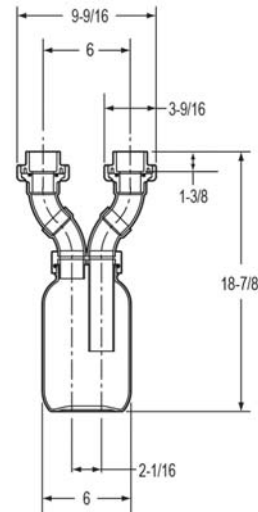


1-Gallon CPVC Dilution Tanks

Provides chemical dilution from water rinse during use. Designed for under-sink installations. CPVC construction with Glass or PP Jar type tank.



Glass

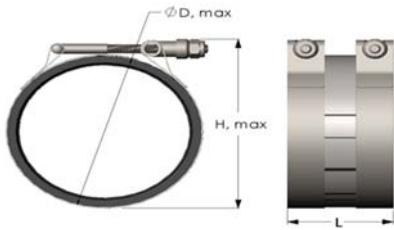


Polypropylene



P091 Elastomer No-Hub Coupling - IPS Pipe/Metric Pipe

IPS Clamp Joint X Metric Clamp Joint
 For connection of IPS pipe systems to Metric pipe systems. Shielded FKM (Fluorocarbon) w/gear clamps.

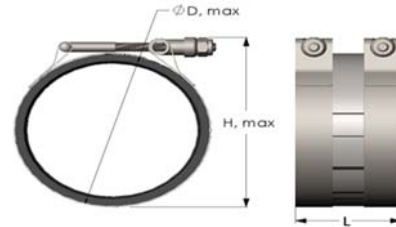


Part Number	Size	D	H	L
P091-015	1-1/2	2-3/8	2-3/4	2-1/8
P091-020	2	2-13/16	3-3/16	2-1/8
P091-02075	2	3-3/8	3-3/4	2-1/8
P091-030	3	3-13/16	4-3/16	2-1/8
P091-040	4	4-13/16	5-1/4	2-1/8
P091-060	6	7	7-7/16	3

Maximum clamp torque value 75 in/lbs.

P093 Elastomer No-Hub Coupling - Glass/IPS Pipe

IPS Clamp Joint x IPS Clamp Joint
 For connection to plain end Glass or any same-size IPS pipe systems. Shielded FKM (Fluorocarbon) w/gear clamps.

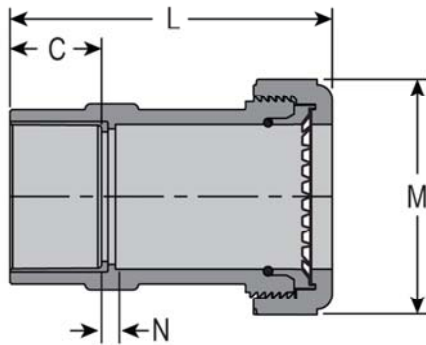


Part Number	Size	D	H	L
P093-015	1-1/2	2-1/4	2-5/8	2-1/8
P093-020	2	2-13/16	3-3/16	2-1/8
P093-030	3	3-13/16	4-3/16	2-1/8
P093-040	4	4-13/16	5-1/4	2-1/8
P093-060	6	7	7-7/16	3
P093-080	8	9-1/16	9-1/2	3-13/16

Maximum clamp torque value 75 in/lbs.

P092 GripLoc™ Transition Coupling

H x GripLoc™ Compression
 WARNING: DO NOT INSERT FINGERS
 FKM Gasket
 For connection to PP or PVDF systems

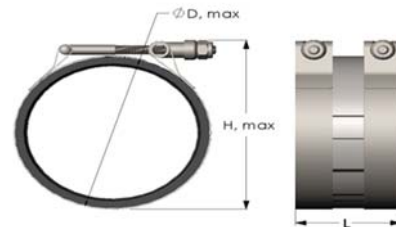


Part Number	Size	C	L	M	N
P092-015C	1-1/2	1-3/8	4-7/8	3-5/16	7/32
P092-020C	2	1-1/2	5-5/16	3-15/16	1/4

For connection to PP, PVDF or other IPS systems

P094 Elastomer No-Hub Coupling- Duriron

IPS Clamp Joint x Duriron Clamp Joint
 For connection to Duriron plain end pipe.
 Shielded FKM (Fluorocarbon) w/gear clamps.



Part Number	Size	D	H	L
P094-015	1-1/2	2-3/8	2-3/4	2-1/8
P094-020	2	2-13/16	3-3/16	2-1/8
P094-030	3	3-15/16	4-3/8	2-1/8
P094-040	4	4-15/16	5-3/8	2-1/8

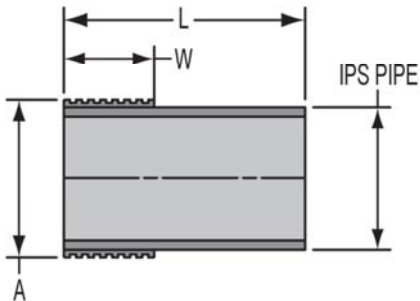
Maximum clamp torque value 75 in/lbs.



LabWaste® Technical
Product Dimensions

P095 Duriron Transition Fitting

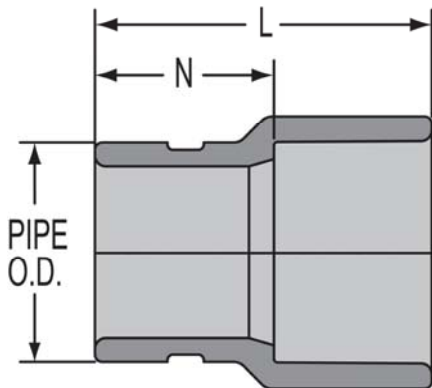
Mechanical Joint x Pipe Size
 For connection to Duriron system. Requires Duriron mechanical joint coupling.



Part Number	Size	A	L	W
P095-015C	1-1/2	2- 3/16	4	1- 3/8
P095-020C	2	2- 5/8	4	1- 1/2
P095-030C	3	3- 3/4	4	1- 7/8
P095-040C	4	4-3/4	4	2- 1/4

P096 Grooved Coupling

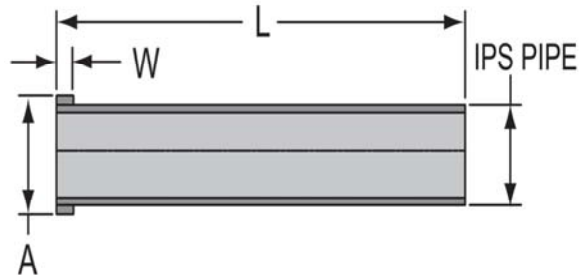
Grv x Soc



Part Number	Size	L	N
P096-015C	1-1/2	2- 5/16	1- 1/2
P096-020C	2	3- 1/16	1- 9/16
P096-030C	3	3- 9/16	1-11/16
P096-040C	4	4- 1/2	2- 1/4
P096-060C	6	5- 3/8	2- 3/8

P097 Duriron Transition Coupling

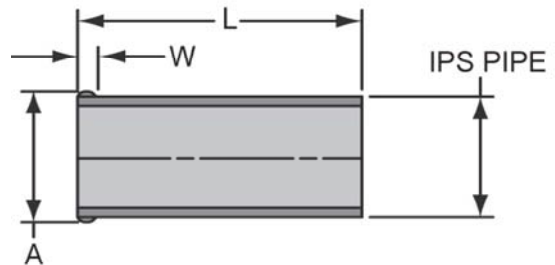
Spig x Caulk Joint
 For connection to Duriron system. Requires packing and plastic lead. Warning: Do not use hot lead or oiled Oakum



Part Number	Size	A	L	W
P097-015C	1-1/2	2- 1/4	12	1/2
P097-020C	2	2- 7/8	12	1/2
P097-030C	3	4- 3/16	12	1/2
P097-040C	4	5- 1/4	12	1/2

P098 Glass Transition Coupling

Spig x Clamp
 For connection to glass system. Requires use of clamp from glass system manufacturer.



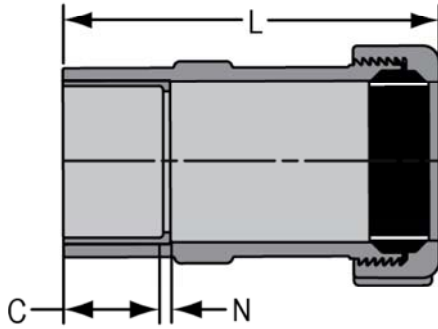
Part Number	Size	A	L	W
P098-015C	1-1/2	2- 1/16	4	1/4
P098-020C	2	2- 9/16	5	1/4
P098-030C	3	3-11/16	6	5/16
P098-040C	4	4-27/32	6	5/16
P098-060C	6	7- 1/8	6	1/2



P099 Transition Coupling

H x Compression

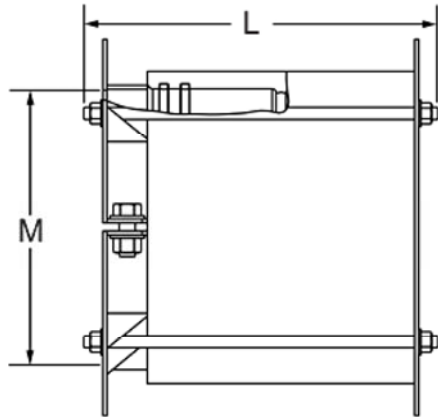
For connection to PP or PVDF systems.
 Requires Safety Retaining Groove Tool.
 Contact Spears®.



Part Number	Size	C	L	N
P099-015C	1-1/2	1- 3/8	5- 1/8	3/32
P099-020C	2	1- 1/2	5- 3/4	1/8
P099-030C	3	1- 7/8	10- 5/16	3/16
P099-040C	4	2- 1/4	11- 5/32	7/32
P099-060C	6	3	13- 3/8	9/32

P099 Transition Coupling - Bolted Style

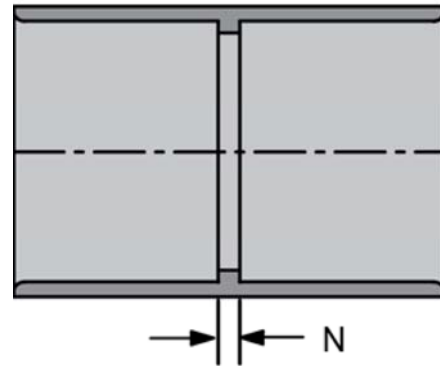
H x Compression



Part Number	Size	L	M
P099-080C	8	11	8-9/16

P100 Coupling

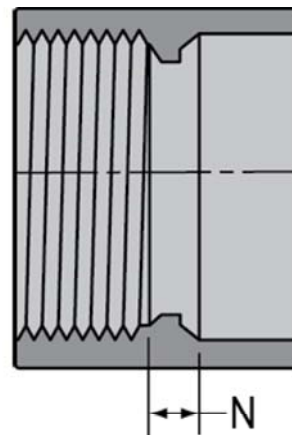
H x H



Part Number	Size	N
P100-015C	1-1/2	1/8
P100-020C	2	1/8
P100-030C	3	1/8
P100-040C	4	1/8
P100-060C	6	1/4
P100-080C	8	1/4
P100-100C	10	3/8
P100-100CF ⁺	10	1-3/4
P100-120C	12	3/8
P100-120CF ⁺	12	2-1/2
P100-140C	14	3/8
P100-140CF ⁺	14	2-1/4
P100-160CF ⁺	16	3-7/8
P100-180CF ⁺	18	3-3/4
P100-200CF ⁺	20	4
P100-240CF ⁺	24	5-1/4

P101 Female Adapter

Fpt x H



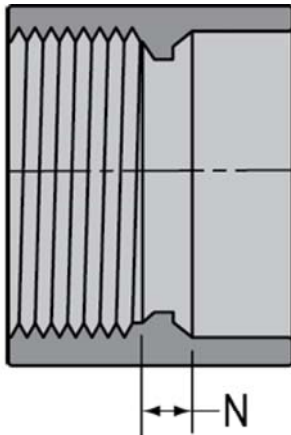
Part Number	Size	N
P101-015C	1-1/2	1/4
P101-020C	2	1/4



P101 Female Adapter

(Continued)

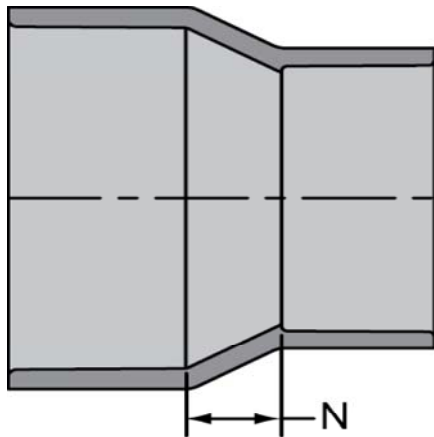
Fpt x H



Part Number	Size	N
P101-030C	3	5/16
P101-040C	4	3/8
P101-060C	6	3/8
P101-080C	8	1/4
P101-100CF ⁺	10	3
P101-120CF ⁺	12	3

P102 Increaser - Reducer

H x H

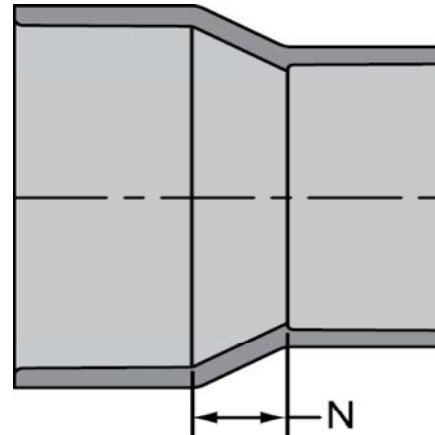


Part Number	Size	N
P102-251C	2X1-1/2	11/16
P102-337C	3X1-1/2	1- 3/32
P102-338C	3X2	15/16
P102-420C	4X2	1- 3/8
P102-422C	4X3	15/16
P102-528CF ⁺	6X2	6-5/16
P102-530C	6X3	2-1/4
P102-532C	6X4	1- 7/16
P102-578CF ⁺	8X2	10-15/16
P102-580CF ⁺	8X3	10-1/2
P102-582CF ⁺	8X4	8
P102-583CF ⁺	8X5	7

P102 Increaser - Reducer

(Continued)

H x H



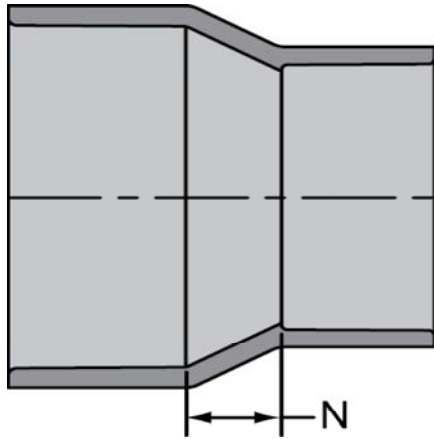
Part Number	Size	N
P102-582C	8X4	2-3/8
P102-585C	8X6	1-3/8
P102-585CF ⁺	8X6	3-1/2
P102-623CF ⁺	10X3	15-9/16
P102-624C	10X4	3- 3/8
P102-624CF ⁺	10X4	13-1/16
P102-626C	10X6	2- 1/4
P102-626CF ⁺	10X6	8-9/16
P102-628C	10X8	1- 5/16
P102-628CF ⁺	10X8	3-3/8
P102-663CF ⁺	12X3	21-3/16
P102-664CF	12X4	8-11/16
P102-666C	12X6	3- 1/4
P102-666CF ⁺	12X6	14-3/16
P102-668C	12X8	2- 5/16
P102-668CF ⁺	12X8	9
P102-670C	12X10	1-1/4
P102-670CF ⁺	12X10	3-1/2
P102-693CF ⁺	14X3	27-1/16
P102-694CF ⁺	14X4	24-9/16
P102-696CF ⁺	14X6	20-1/16
P102-698CF ⁺	14X8	14-7/8
P102-700CF ⁺	14X10	9-3/8
P102-702CF ⁺	14X12	3-1/8
P102-753CF ⁺	16X3	33-11/16
P102-754CF ⁺	16X4	31-3/16
P102-756CF ⁺	16X6	26-11/16
P102-758CF ⁺	16X8	21-1/2
P102-760CF ⁺	16X10	16
P102-762CF ⁺	16X12	9-3/4
P102-764CF ⁺	16X14	3-1/2
P102-784CF ⁺	18X4	39-3/16
P102-786CF ⁺	18X6	34-11/16
P102-788CF ⁺	18X8	29-1/2
P102-790CF ⁺	18X10	24
P102-792CF ⁺	18X12	17-3/4



P102 Increaser - Reducer

(Continued)

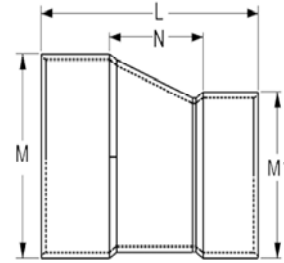
H x H



Part Number	Size	L	M	M1	N
P102-794CF	18X14	27-1/2	19	14-7/8	11-1/2
P102-796CF	18X16	21-5/8	19	17	4-5/8
P102-814CF	20X4	59-7/16	21-1/8	5	47-3/16
P102-816CF	20X6	55-15/16	21-1/8	7-3/16	42-11/16
P102-818CF	20X8	51-3/4	21-1/8	9-1/4	37-1/2
P102-820CF	20X10	47-1/4	21-1/8	11-9/16	32
P102-822CF	20X12	42	21-1/8	13-9/16	25-3/4
P102-824CF	20X14	42	21-1/8	13-9/16	25-3/4
P102-826CF	20X16	30-5/8	21-1/8	17	12-5/8
P102-828CF	20X18	23-1/4	21-1/8	19-1/8	4-1/4
P102-904CF	24X4	71-11/16	25-3/16	5	57-7/16
P102-906CF	24X6	68-3/16	25-3/16	7-3/16	52-15/16
P102-908CF	24X8	64	25-3/16	9-1/4	47-3/4
P102-910CF	24X10	59-1/2	25-3/16	11-1/2	42-1/4
P102-912CF	24X12	54-1/4	25-3/16	13-9/16	36
P102-914CF	24X14	48-3/4	25-3/16	14-7/8	29-3/4
P102-916CF	24X16	42-7/8	25-3/16	17	22-7/8
P102-918CF	24X18	35-1/2	25-3/16	19-1/8	14-1/2
P102-920CF	24X20	28-3/4	25-3/16	21-3/16	28-3/4

Pipe Increaser-Reducer, Eccentric

Hub X Hub



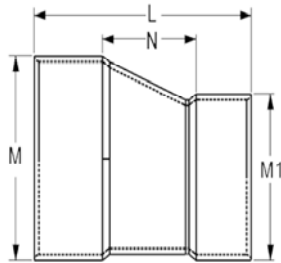
Part Number	Size	L	M	M1	N
P102-420CFE	4X2	12-1/4	4-15/16	2-7/8	8-1/2
P102-422CFE	4X3	8-5/8	4-15/16	3-15/16	4-1/8
P102-528CFE	6X2	19-5/8	7-1/8	2-7/8	14-7/8
P102-530CFE	6X3	16	7-1/8	3-15/16	10-1/2
P102-532CFE	6X4	10-13/16	7-1/8	5	5-5/16
P102-578CFE	8X2	28-5/8	9-3/16	2-7/8	22-7/8
P102-580CFE	8X3	25	9-3/16	3-15/16	18-1/2
P102-582CFE	8X4	19-13/16	9-3/16	5	13-5/16
P102-585CFE	8X6	14-3/8	9-3/16	7-3/16	6-7/8
P102-623CFE	10X3	34-7/8	11-3/8	3-15/16	27-3/8
P102-624CFE	10X4	29-11/16	11-3/8	5	22-3/16
P102-626CFE	10X6	24-1/4	11-3/8	7-3/16	15-3/4
P102-628CFE	10X8	16-11/16	11-3/8	9-1/4	7-3/16
P102-663CFE	12X3	44-7/8	13-1/2	3-15/16	36-3/8
P102-664CFE	12X4	39-11/16	13-1/2	5	31-3/16
P102-666CFE	12X6	34-1/4	13-1/2	7-3/16	24-3/4
P102-668CFE	12X8	26-11/16	13-1/2	9-1/4	16-3/16
P102-670CFE	12X10	18-3/8	13-1/2	11-1/2	6-7/8
P102-702CFE	14X12	17-5/8	14-13/16	13-9/16	4-3/8
P102-762CFE	16X12	28-1/2	16-7/8	13-9/16	14-1/4
P102-764CFE	16X14	21-3/4	16-7/8	14-7/8	6-3/4
P102-792CFE	18X12	40-7/8	19	13-9/16	25-5/8
P102-794CFE	18X14	34-1/8	19	14-7/8	18-1/8
P102-796CFE	18X16	25	19	17	8
P102-814CFE	20X4	82-5/8	21-1/8	5	70-3/8
P102-816CFE	20X6	77-3/16	21-1/8	7-3/16	63-15/16
P102-818CFE	20X8	69-5/8	21-1/8	9-1/4	55-3/8
P102-820CFE	20X10	61-5/16	21-1/8	11-1/2	46-1/16
P102-822CFE	20X12	52-5/8	21-1/8	13-9/16	36-3/8
P102-824CFE	20X14	45-7/8	21-1/8	14-7/8	28-7/8
P102-826CFE	20X16	36-3/4	21-1/8	17	18-3/4
P102-828CFE	20X18	26	21-1/8	19-1/8	7
P102-904CFE	24X4	100-3/8	25-3/16	5	86-1/8
P102-906CFE	24X6	94-15/16	25-3/16	7-3/16	79-11/16
P102-908CFE	24X8	87-3/8	25-3/16	9-1/4	71-1/8
P102-910CFE	24X10	79-1/16	25-3/16	11-1/2	61-13/16
P102-912CFE	24X12	70-3/8	25-3/16	13-9/16	52-1/8



Pipe Increaser-Reducer, Eccentric

(Continued)

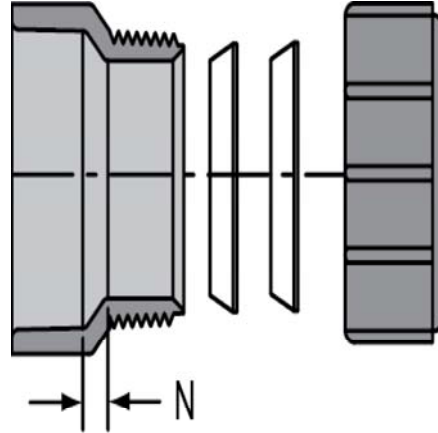
Hub X Hub



Part Number	Size	L	M	M1	N
P102-914CFE ⁺	24X14	63-5/8	25-3/16	14-7/8	37-7/8
P102-916CFE ⁺	24X16	54-1/2	25-3/16	17	34-1/2
P102-918CFE ⁺	24X18	43-3/4	25-3/16	19-1/8	22-3/4
P102-920CFE ⁺	24X20	34-1/4	25-3/16	21-3/16	12-1/4

P104R Trap Adapter - Female

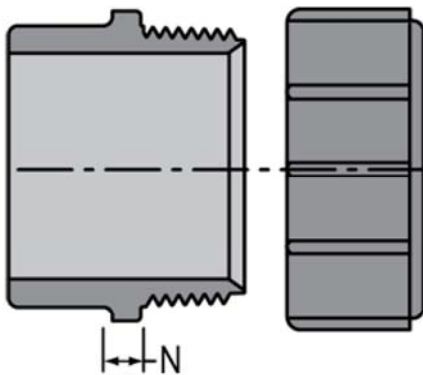
w/1-1/2 Plastic Nut & Washer and 1-1/2x1-1/4 Washer
 H x Slip w/Plastic Nut



Part Number	Size	N
P104R-015C	1-1/2	3/16

P103P Trap Adapter - Male

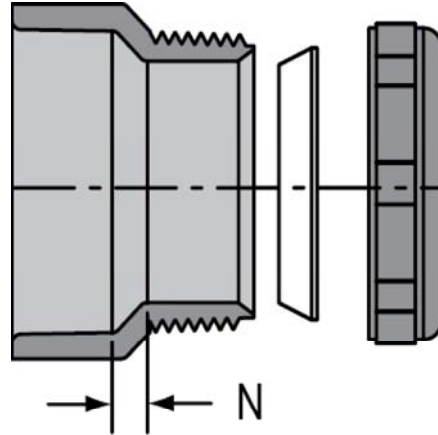
Spig x Slip with Plastic Nut



Part Number	Size	N
P103P-015C	1-1/2	3/16
P103P-020C	2	3/16

P104X Trap Adapter - Female

H x Slip w/Chrome Nut & Washer

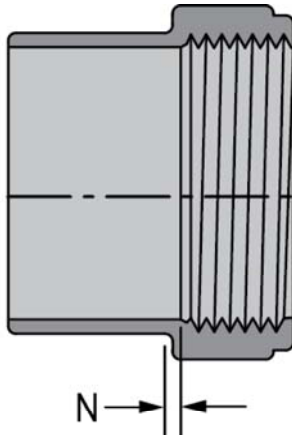


Part Number	Size	N
P104X-015C	1-1/2	3/16



P105 Cleanout Adapter

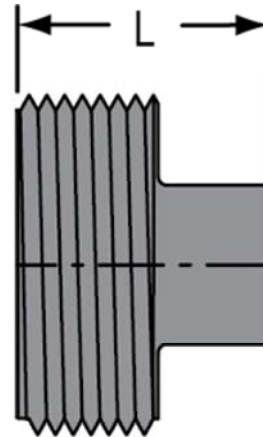
Spig x Fpt



Part Number	Size	N
P105-015C	1-1/2	5/32
P105-020C	2	1/4
P105-030C	3	1/4
P105-040C	4	1/4
P105-060C	6	3/8
P105-080C	8	3/8

P106 Square Head Cleanout Plug

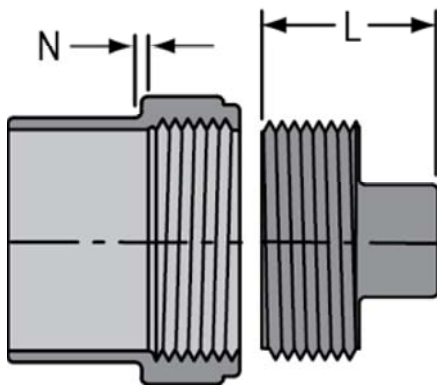
Mpt



Part Number	Size	L
P106-015C	1-1/2	1- 3/8
P106-020C	2	1- 3/8
P106-030C	3	1-3/4
P106-040C	4	1- 7/8
P106-060C	6	1-15/16
P106-080C	8	2- 1/16

P105X Cleanout Adapter with Square Head Plug

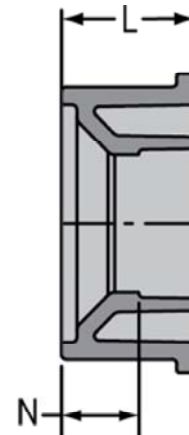
Spig



Part Number	Size	L	N
P105X-015C	1-1/2	1- 3/8	5/32
P105X-020C	2	1-3/8	5/32
P105X-030C	3	1-3/4	1/4
P105X-040C	4	1- 7/8	1/4
P105X-060C	6	1-15/16	3/8
P105X-080C	8	2-1/16	5/16
P105X-100CF ¹	10	1	0
P105X-120CF ¹	12	1	0
P105X-140CF ¹	14	1	0
P105X-160CF ¹	16	1	0

P107 Flush Bushing

Spig x H



Part Number	Size	L	N
P107-251C	2X1-1/2	1- 1/16	1/4
P107-337C	3X1-1/2	1- 3/4	1
P107-338C	3X2	1-3/4	1
P107-420C	4X2	2	1- 1/8
P107-422C	4X3	2	1/2
P107-530C ¹	6X3	3-3/4	2- 1/4
P107-532C	6X4	3- 7/16	1-3/4
P107-582C	8X4	4- 9/16	2-13/16
P107-585C	8X6	4-9/16	1- 9/16
P107-623C ¹	10X3	6-3/16	4-5/8
P107-624C ¹	10X4	6	4-1/4

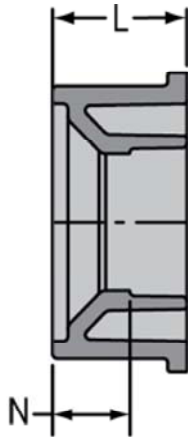


LabWaste® Technical
Product Dimensions

P107 Flush Bushing

(Continued)

Spig x H

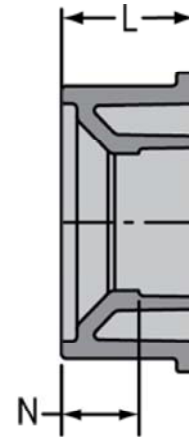


Part Number	Size	L	N
P107-626C	10X6	5- 11/32	2- 5/16
P107-626CF ⁺	10X6	5-13/16	4-1/16
P107-628C	10X8	5-1/4	1-5/16
P107-628CF ⁺	10X8	5-1/4	1-1/4
P107-663CF ⁺	12X3	7-3/16	5-11/16
P107-664C ¹	12X4	6-15/16	5-5/32
P107-666C ¹	12X6	6-7/8	3- 7/8
P107-668C	12X8	6-5/16	2-5/16
P107-670C	12X10	6-5/16	1-5/16
P107-670CF ⁺	12X10	6	1
P107-693CF ⁺	14X3	8-1/8	6-5/8
P107-694CF ⁺	14X4	7-7/8	6-1/8
P107-698CF ⁺	14X8	7-5/16	3-1/4
P107-696CF ⁺	14X6	7-15/16	5
P107-700CF ⁺	14X10	7-5/16	2-1/4
P107-702CF ⁺	14X12	7	1
P107-753CF ⁺	16X3	9-3/16	7-11/16
P107-754CF ⁺	16X4	8-15/16	7-1/8
P107-756CF ⁺	16X6	8-15/16	6
P107-758CF ⁺	16X8	8-5/16	4-5/16
P107-760CF ⁺	16X10	8-5/16	3-5/16
P107-762CF ⁺	16X12	8	1-7/16
P107-764CF ⁺	16X14	8	1
P107-784CF ⁺	18X4	9-15/16	8-1/8
P107-786CF ⁺	18X6	9-15/16	7
P107-788CF ⁺	18X8	9-5/16	5-5/16
P107-790CF ⁺	18X10	9-5/16	4-5/16
P107-792CF ⁺	18X12	9	3
P107-794CF ⁺	18X14	9	1-7/8
P107-796CF ⁺	18X16	9	1
P107-814CF ⁺	20X4	10-15/16	9-1/8
P107-816CF ⁺	20X6	10-15/16	8
P107-818CF ⁺	20X8	10-5/16	6-5/16
P107-820CF ⁺	20X10	10-5/16	5-5/16

P107 Flush Bushing

(Continued)

Spig x H

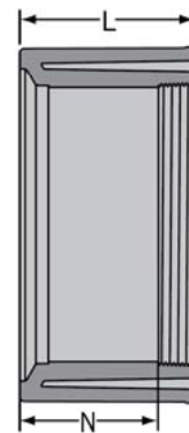


Part Number	Size	L	N
P107-822CF ⁺	20X12	10	4
P107-824CF ⁺	20X14	10	3
P107-826CF ⁺	20X16	10	2
P107-828CF ⁺	20X18	10	1
P107-904CF ⁺	24X4	12-15/16	11-1/8
P107-906CF ⁺	24X6	12-15/16	10
P107-908CF ⁺	24X8	12-5/16	8-5/16
P107-910CF ⁺	24X10	12-5/16	7-5/16
P107-912CF ⁺	24X12	12	6
P107-914CF ⁺	24X14	12	5
P107-916CF ⁺	24X16	12	4
P107-918CF ⁺	24X18	12	3
P107-920CF ⁺	24X20	12	2

¹ Outlet-sized with Bushing

**P108 Flush Bushing
 (Cleanout Adapter)**

Spig x FPT

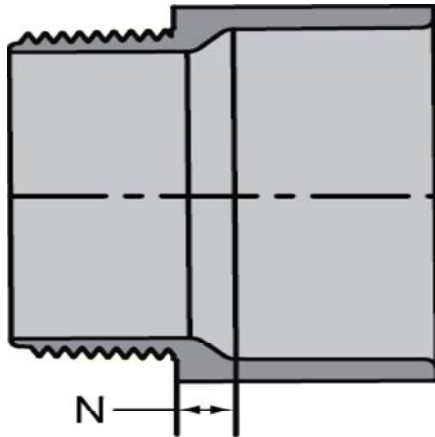


Part Number	Size	L	N
P108-212C	1-1/2X1-1/4	7/8	3/16



P109 Male Adapter

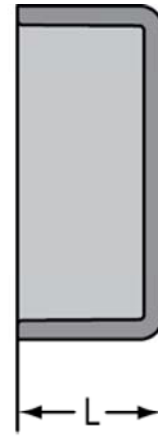
Mpt x H



Part Number	Size	N
P109-015C	1-1/2	3/16
P109-020C	2	3/16
P109-030C	3	3/8
P109-040C	4	3/8
P109-060C	6	3/8

P116 Cap

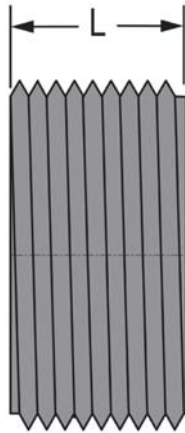
Socket



Part Number	Size	L
P116-015C	1-1/2	15/16
P116-020C	2	1
P116-030C	3	1- 3/4
P116-040C	4	2
P116-060C	6	3- 9/32
P116-080C	8	6-3/4
P116-100CF ⁺	10	3-3/4
P116-120CF ⁺	12	4-1/8
P116-140CF ⁺	14	5-3/4
P116-160CF ⁺	16	5-1/4
P116-180CF ⁺	18	5-7/8
P116-200CF ⁺	20	6-3/8
P116-240CF ⁺	24	7

P110 Counter Sunk Cleanout Plug

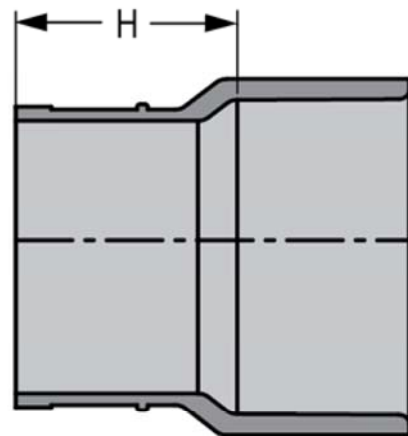
Mpt



Part Number	Size	L
P110-015C	1-1/2	5/8
P110-020C	2	5/8
P110-030C	3	3/4
P110-040C	4	7/8
P110-060C	6	31/32

P119 No-Hub Adapter

S x H



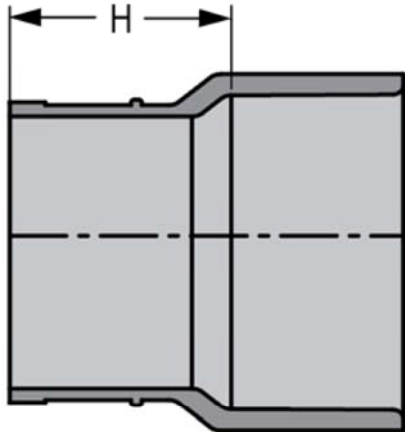
Part Number	Size	H
P119-015C	1-1/2	1- 5/8
P119-020C	2	1- 5/8
P119-030C	3	1-3/4
P119-040C	4	1- 7/8
P119-060C	6	2-9/16



P119 No-Hub Adapter

(Continued)

S x H



Part Number	Size	H
P119-080CF ⁺	8	4-1/2
P119-100CF ⁺	10	4-3/4
P119-120CF ⁺	12	5-1/8

P130 Repair Coupling

H x H

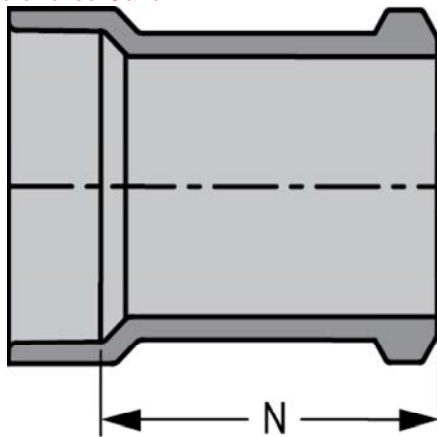


Part Number	Size	L
P130-015C	1-1/2	1-1/2
P130-020C	2	1- 5/8
P130-030C	3	3- 3/16
P130-040C	4	3- 3/4
P130-060C	6	6-3/8
P130-080C	8	8-5/16
P130-100C	10	10-7/16

P123 Hub Adapter

H x S

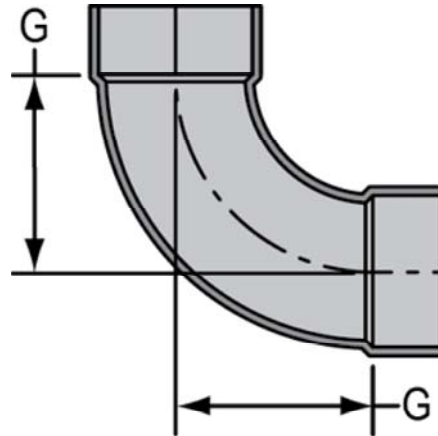
For connection to Cast Iron system. Requires packing and plastic lead. Warning: Do not use hot lead or oiled Oakum



Part Number	Size	N
P123-020C	2	4- 7/8
P123-030C	3	4- 1/8
P123-040C	4	4-11/32
P123-060CF ⁺	6	5-9/16
P123-080CF ⁺	8	6-1/16

P300 1/4 Bend (90° Ell)

H x H



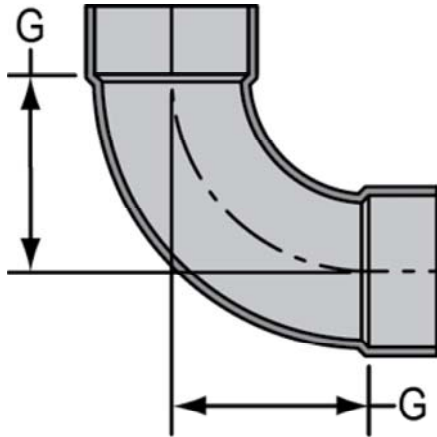
Part Number	Size	G
P300-015C	1-1/2	1-3/4
P300-020C	2	2- 5/16
P300-030C	3	3-1/16
P300-040C	4	3-7/8
P300-060C	6	5
P300-080C	8	6
P300-080CF ⁺	8	9-1/8
P300-100C	10	9-13/16
P300-100CF ⁺	10	11-9/16
P300-120C	12	10- 3/4
P300-120CF ⁺	12	13-5/16



P300 1/4 Bend (90° EII)

(Continued)

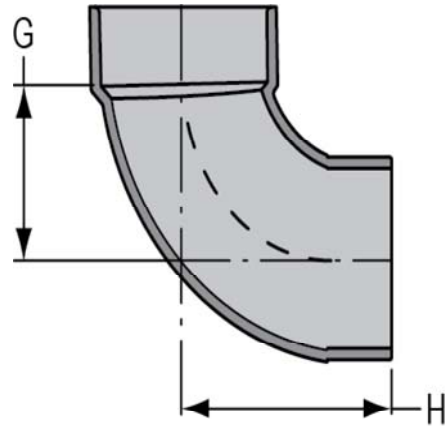
H x H



Part Number	Size	G
P300-140CF ⁺	14	15-5/8
P300-160CF ⁺	16	18-1/16
P300-180CF ⁺	18	20-1/2
P300-200CF ⁺	20	22-7/8
P300-240CF ⁺	24	27-11/16

P302 1/4 Bend, Street (90° Street EII)

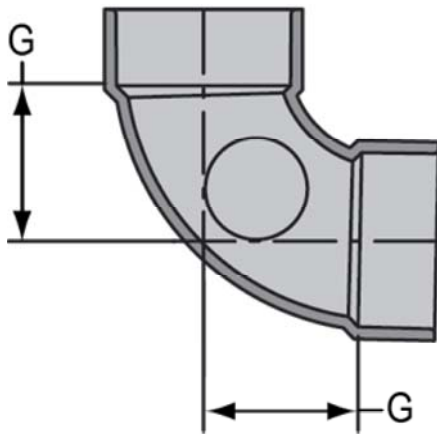
H x Spig



Part Number	Size	G	H
P302-015C	1-1/2	1- 3/4	2-13/32
P302-020C	2	2-5/16	3-1/4
P302-030C	3	3-1/16	4- 9/16
P302-040C	4	3- 7/8	5- 9/16
P302-060C	6	5	8-1/4
P302-080C	8	6	10- 3/8
P302-100C	10	9-13/16	15- 5/16
P302-100CF ⁺	10	11-9/16	20-1/16
P302-120C	12	10-13/16	17- 1/4
P302-120CF ⁺	12	13-5/16	23-5/16
P302-140CF ⁺	14	15-5/8	27-1/8
P302-160CF ⁺	16	18-1/16	31-1/16
P302-180CF ⁺	18	20-1/2	35
P302-200CF ⁺	20	22-7/8	38-7/8
P302-240CF ⁺	24	27-1/16	46-11/16

P300S 1/4 Bend w/Side Inlet (90° EII)

All Hub

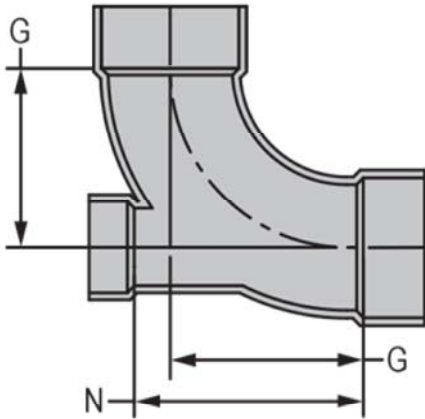


Part Number	Size	G
P300S-338C	3X3X2	3- 1/16



**P303 1/4 Bend w/Low Heel
 Inlet**

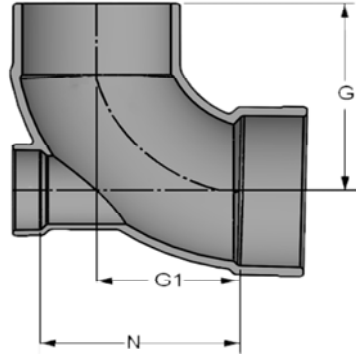
H x H x H



Part Number	Size	G	N
P303-338C	3X3X2	3- 1/16	4- 7/16
P303-420C	4X4X2	3-7/8	5-1/4

**P306 1/4 Bend w/Low Heel
 Inlet**

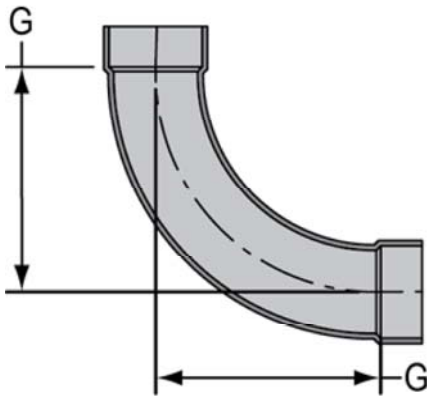
S x H x H



Part Number	Size	G	G1	N
P306-420C	4X4X2	5- 5/8	3- 7/8	5-7/16

**P304 1/4 Bend, Long Sweep
 (90° LS EII)**

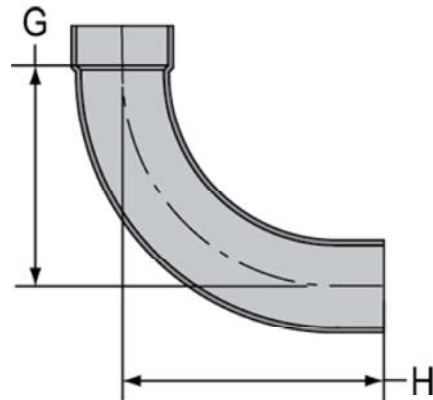
H x H



Part Number	Size	G
P304-015C	1-1/2	2- 3/4
P304-020C	2	3-1/4
P304-030C	3	4-1/16
P304-040C	4	4- 15/16
P304-060C	6	9

**P309 1/4 Bend Long Sweep,
 Street
 (90° LS Street EII)**

H x Spig

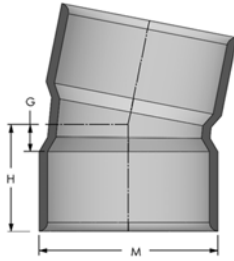


Part Number	Size	G	H
P309-015C	1-1/2	2- 3/4	3-5/16
P309-020C	2	3- 1/4	4
P309-030C	3	4-1/16	5-9/16
P309-040C	4	4-15/16	6-1/2
P309-060C	6	9	11-3/4



P314 1/32 Bend (11-1/4° Ell)

Hub x Hub

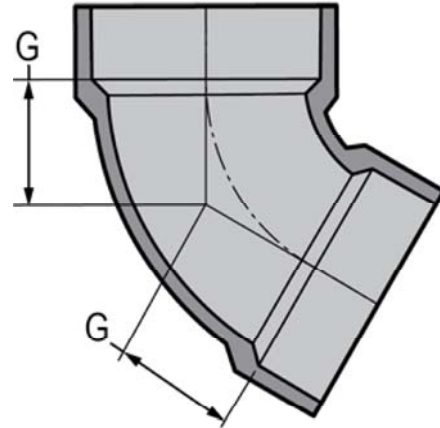


Part Number	Size	G	H	M
P314-020CF ⁺	2	1/2	2-1/4	2-11/16
P314-030CF ⁺	3	11-1/16	2-15/16	3-15/16
P314-040CF ⁺	4	3/4	3	5
P314-060CF ⁺	6	1	4-1/4	7-3/16
P314-080CF ⁺	8	1-1/16	5-5/16	9-1/4
P314-100CF ⁺	10	1-7/16	6-11/16	11-1/2
P314-120CF ⁺	12	1-9/16	7-13/16	13-9/16
P314-140CF ⁺	14	2	9	14-7/8
P314-160CF ⁺	16	2-3/8	10-3/8	17
P314-180CF ⁺	18	2-11/16	11-11/16	19-1/8
P314-200CF ⁺	20	3-1/16	13-1/16	21-3/16
P314-240CF ⁺	24	3-3/4	15-3/4	25-3/8

P319 1/6 Bend (60° Ell)

(Continued)

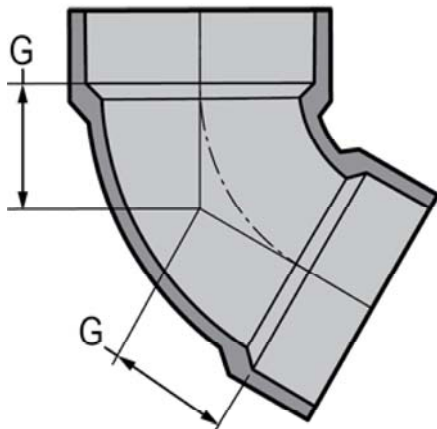
H x H



Part Number	Size	G
P319-160CF ⁺	16	6-5/8
P319-180CF ⁺	18	7-9/16
P319-200CF ⁺	20	16-3/8
P319-240CF ⁺	24	19-13/16

P319 1/6 Bend (60° Ell)

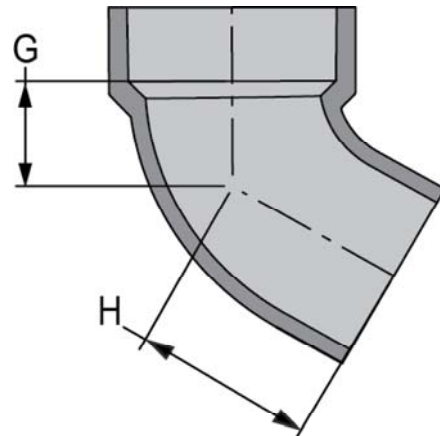
H x H



Part Number	Size	G
P319-015C	1-1/2	1
P319-020C	2	1- 5/16
P319-030C	3	1-11/16
P319-040C	4	2- 1/16
P319-060CF	6	2-13/16
P319-080CF ⁺	8	3-3/8
P319-100CF ⁺	10	4-5/16
P319-120CF	12	4-15/16
P319-140CF ⁺	14	5-3/4

P320 1/6 Bend, Street (60° Street Ell)

H x Spig



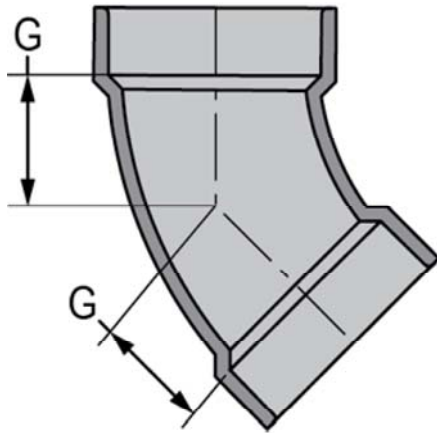
Part Number	Size	G	H
P320-015C	1-1/2	1	1- 3/4
P320-020C	2	1- 5/16	2- 1/8
P320-030C	3	1-11/16	3
P320-040C	4	2- 1/16	3-1/2



LabWaste® Technical
Product Dimensions

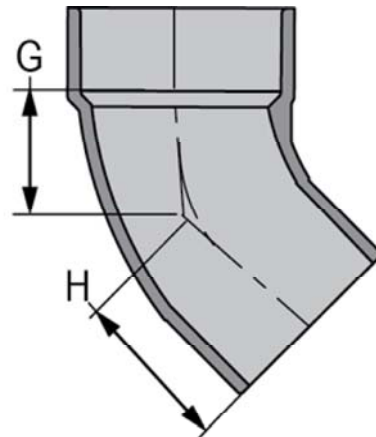
P321 1/8 Bend (45° Ell)

H x H



**P323 1/8 Bend, Street
 (45° Street Ell)**

H x Spig



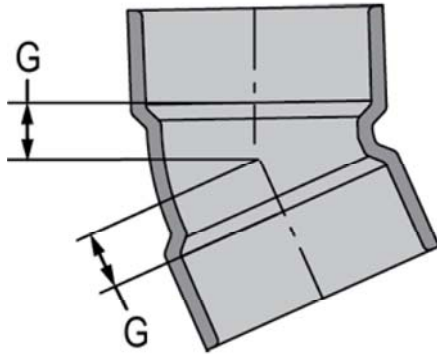
Part Number	Size	G
P321-015C	1-1/2	1- 1/8
P321-020C	2	1-1/2
P321-030C	3	1-3/4
P321-040C	4	2-3/16
P321-060C	6	2
P321-080C	8	2-1/16
P321-080CF ⁺	8	2-5/8
P321-100C	10	2-5/8
P321-100CF ⁺	10	3-5/16
P321-120C	12	3- 1/8
P321-120CF ⁺	12	3-3/4
P321-140CF ⁺	14	4-7/16
P321-160CF ⁺	16	5-1/8
P321-180CF ⁺	18	5-7/8
P321-200CF ⁺	20	6-9/16
P321-240CF ⁺	24	7-15/16

Part Number	Size	G	H
P323-015C	1-1/2	1-1/8	1-3/4
P323-020C	2	1-1/2	2- 3/16
P323-030C	3	1- 3/4	3- 1/4
P323-040C	4	2- 3/16	3-15/16
P323-060C	6	2	5
P323-080C	8	2-1/16	6
P323-100C	10	2-5/8	10-5/8
P323-100CF ⁺	10	3-5/16	11-13/16
P323-120C	12	3-1/8	12-7/8
P323-120CF ⁺	12	3-3/4	13-3/4
P323-140CF ⁺	14	4-7/16	15-15/16
P323-160CF ⁺	16	5-1/8	18-1/8
P323-180CF ⁺	18	5-7/8	20-3/8
P323-200CF ⁺	20	6-9/16	22-9/16
P323-240CF ⁺	24	7-15/16	26-15/16



**P324 1/16 Bend
 (22-1/2° EII)**

H x H

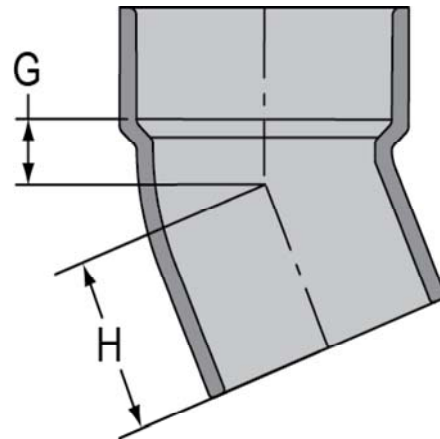


Part Number	Size	G
P324-015C	1-1/2	1/2
P324-020C	2	11/16
P324-030C	3	13/16
P324-040C	4	1
P324-060C	6	1- 1/2
P324-080C	8	1-1/2
P324-100CF ⁺	10	2-1/16
P324-120CF ⁺	12	2-1/4
P324-140CF ⁺	14	2-3/4
P324-160CF ⁺	16	3-1/4
P324-180CF ⁺	18	3-11/16
P324-200CF ⁺	20	4-1/8
P324-240CF ⁺	24	5-1/16

**P326 1/16 Bend, Street
 (22-1/2° Street EII)**

(Continued)

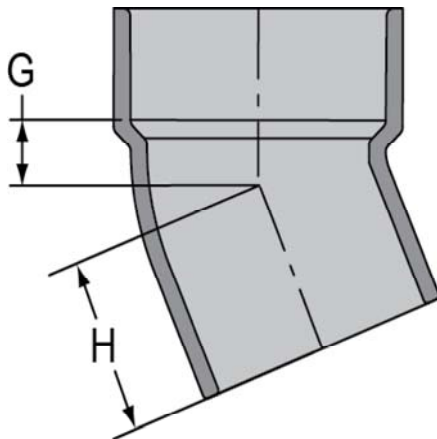
H x Spig



Part Number	Size	G	H
P326-030C	3	13/16	2- 1/4
P326-040C	4	1	2-1/2
P326-060C	6	1- 1/2	4- 1/2
P326-080C	8	1- 1/2	5- 1/2
P326-100CF ⁺	10	2-1/16	10-1/2
P326-120CF ⁺	12	2-1/4	12-1/4
P326-140CF ⁺	14	2-3/4	14-1/4
P326-160CF ⁺	16	3-1/4	16-1/4
P326-180CF ⁺	18	3-11/16	18-3/16
P326-200CF ⁺	20	4-1/8	20-1/8
P326-240CF ⁺	24	5-1/16	24-1/16

**P326 1/16 Bend, Street
 (22-1/2° Street EII)**

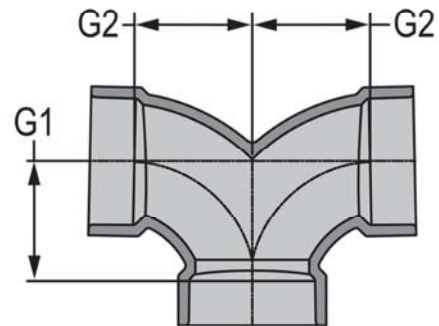
H x Spig



Part Number	Size	G	H
P326-015C	1-1/2	1/2	1- 1/8
P326-020C	2	11/16	1- 3/8

**P327 Double 1/4 Bend
 (3 Way EII)**

All Hub



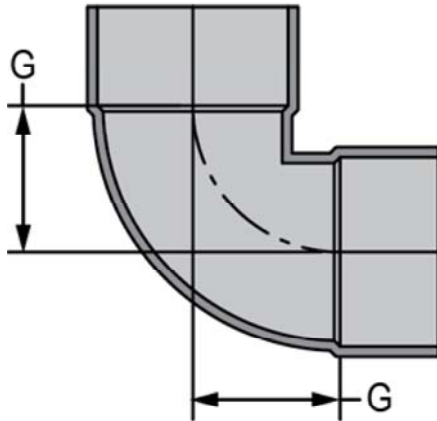
Part Number	Size	G1	G2
P327-015C	1-1/2	1- 3/4	1- 3/4
P327-020C	2	2- 5/16	2- 5/16
P327-030C	3	3- 1/16	3- 1/16
P327-040C	4	3-7/8	3-7/8
P327-241C	2X1-1/2X1-1/2	1- 15/16	2-3/16



LabWaste® Technical
Product Dimensions

P331 Vent Ell

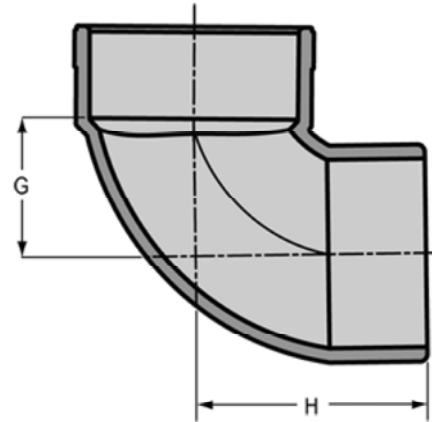
H x H



Part Number	Size	G
P331-015C	1-1/2	1- 3/16
P331-020C	2	1- 1/2
P331-030C	3	1- 7/8
P331-040C	4	2- 1/2
P331-060C	6	3-1/2

P335 Trap Elbow (for use with Traps only)

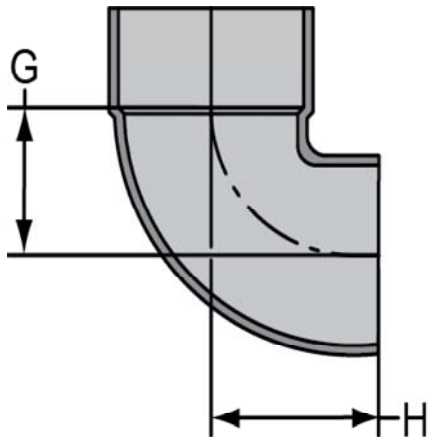
H x S



Part Number	Size	G	H
P335-030C	3	2-1/4	3-7/8
P335-040C	4	2-13/16	4-1/2

P333 Vent Ell, Street

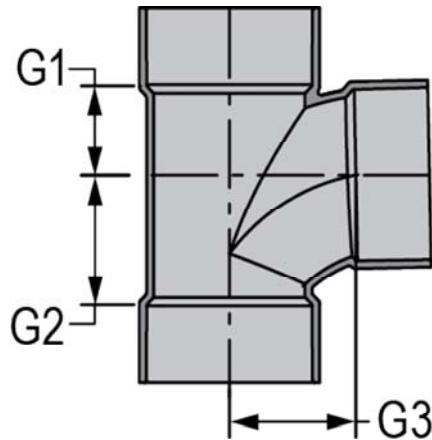
H x Spig



Part Number	Size	G	H
P333-015C	1-1/2	1- 3/16	1-7/8
P333-020C	2	1- 1/2	2- 3/16
P333-030C	3	1- 7/8	3- 5/8
P333-040C	4	2-1/2	4- 7/16

P400 Sanitary Tee

All Hub



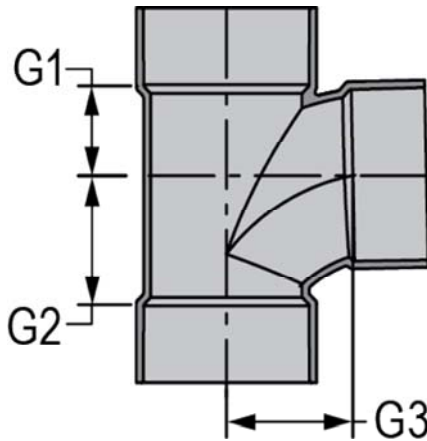
Part Number	Size	G1	G2	G3
P400-015C	1-1/2	1	1- 3/4	1- 3/4
P400-020C	2	1-3/8	2- 5/16	2- 5/16
P400-030C	3	1-13/16	3-1/16	3-1/16
P400-040C	4	2- 1/4	3-7/8	3-7/8
P400-060C	6	3- 1/2	5	5
P400-080C	8	4-1/2	6	6
P400-080CF*	8	4-5/8	15-5/16	15-3/16
P400-120CF*	12	5-5/8	21-3/4	21-13/16
P400-100C	10	5-1/2	10	10
P400-100CF*	10	5-3/16	18-5/8	19-1/8
P400-120C	12	6- 9/16	11	11
P400-140CF*	14	5-5/16	23-1/16	22-3/4
P400-160CF*	16	6-5/8	26-7/8	25-1/2
P400-180CF*	18	7-1/16	29-13/16	28-1/16



P400 Sanitary Tee

(Continued)

All Hub

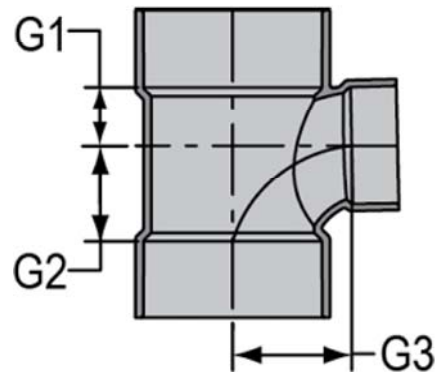


Part Number	Size	G1	G2	G3
P400-200CF	20	7-9/16	34-3/16	32-1/16
P400-240CF	24	7-11/16	38-5/16	37-13/16

P401 Sanitary Tee, Reducing

(Continued)

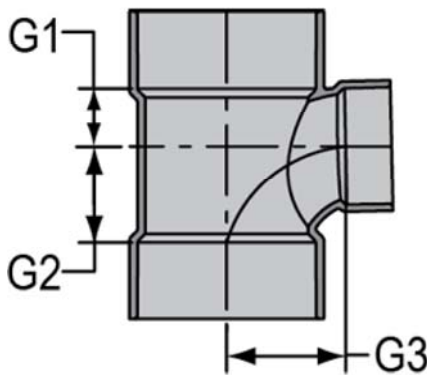
All Hub



Part Number	Size	G1	G2	G3
P401-626CF	10X6	4-15/16	12-13/16	13-7/8
P401-628CF	10X8	5-1/4	15-3/4	16-3/16
P401-661CF	12X2	3-15/16	6-9/16	10-5/16
P401-663CF	12X3	4-1/4	7-3/4	12-5/8
P401-664CF	12X4	4-5/16	9-3/16	13-1/8
P401-666CF	12X6	4-7/8	12-5/8	14-7/8
P401-668CF	12X8	5	15-1/2	17-1/8
P401-670CF	12X10	5-1/16	18-7/16	20-1/16
P401-691CF	14X2	3-11/16	6-5/16	10-15/16
P401-693CF	14X3	4-1/2	8	13-3/16
P401-694CF	14X4	4-9/16	9-7/16	13-11/16
P401-696CF	14X6	4-5/8	12-3/8	15-7/16
P401-698CF	14X8	4-13/16	15-3/16	17-3/4
P401-700CF	14X10	4-7/8	18-1/8	20-11/16
P401-702CF	14X12	6	22	22-3/8
P401-753CF	16X3	5-3/16	8-9/16	14-1/8
P401-754CF	16X4	5-1/8	9-7/8	14-5/8
P401-756CF	16X6	6-1/16	13-11/16	16-3/8
P401-758CF	16X8	5-3/8	15-5/8	18-11/16
P401-760CF	16X10	5-7/16	18-9/16	21-5/8
P401-762CF	16X12	5-9/16	21-7/16	23-5/16
P401-764CF	16X14	5-9/16	23-3/16	23-11/16
P401-784CF	18X4	5-9/16	10-3/16	15-9/16
P401-786CF	18X6	6-1/8	13-5/8	17-5/16
P401-788CF	18X8	6-5/16	16-7/16	19-5/8
P401-790CF	18X10	5-7/8	18-7/8	22-9/16
P401-792CF	18X12	6	21-3/4	24-1/4
P401-794CF	18X14	5-5/8	23-1/8	24-5/8
P401-796CF	18X16	6-13/16	26-15/16	26-7/16
P401-814CF	20X4	6-1/8	10-5/8	16-9/16
P401-816CF	20X6	6-3/16	13-9/16	18-5/16
P401-818CF	20X8	6-5/16	16-7/16	20-9/16
P401-820CF	20X10	5-7/8	18-7/8	23-1/2
P401-822CF	20X12	6-1/2	22-1/4	25-1/4
P401-824CF	20X14	6-3/16	23-9/16	25-9/16

P401 Sanitary Tee, Reducing

All Hub



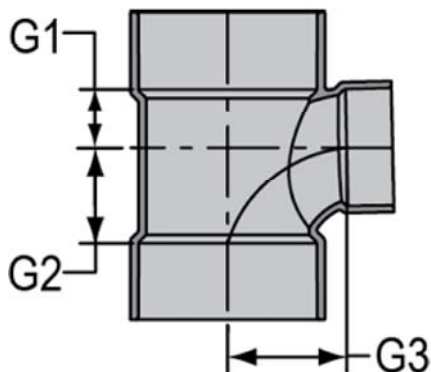
Part Number	Size	G1	G2	G3
P401-241C	2X1-1/2X1-1/2	1- 3/16	1-15/16	2- 3/16
P401-251C	2X2X1-1/2	1-3/16	1-15/16	2-3/16
P401-257C	2X1-1/2X2	1- 3/8	2- 5/16	2- 5/16
P401-337C	3X3X1-1/2	15/16	1- 3/4	2- 9/16
P401-338C	3X3X2	1-3/16	2-1/8	2-7/8
P401-419C	4X1-1/2	1-1/8	2-1/16	3-3/8
P401-420C	4X4X2	1-1/8	2-1/16	3- 5/16
P401-422C	4X4X3	1-3/4	3	3-9/16
P401-530CF	6X3	3-1/4	7	9-11/16
P401-532C	6X4	2-3/16	3-5/8	4-11/16
P401-582C	8X4	4-1/2	6	8- 7/8
P401-578CF	8X2	3-1/2	6-1/4	8-3/8
P401-585CF	8X6	3-7/8	11-3/4	12-7/8
P401-621CF	10X2	3-1/2	6-1/4	9-3/8
P401-623CF	10X3	4-1/16	7-11/16	11-5/8
P401-624CF	10X4	4-5/16	9-5/16	12-1/8



LabWaste® Technical
Product Dimensions

P401 Sanitary Tee, Reducing (Continued)

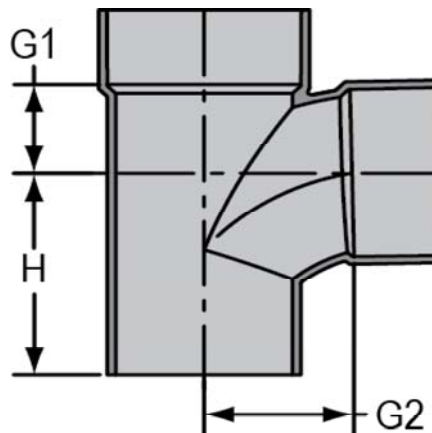
All Hub



Part Number	Size	G1	G2	G3
P401-826CF	20X16	6-3/8	26-3/8	27-3/8
P401-828CF	20X18	6-9/16	29-3/16	29-1/16
P401-904CF	24X4	6-15/16	11-5/16	18-7/16
P401-906CF	24X6	7-1/8	14-3/8	20-3/16
P401-908CF	24X8	7-5/16	17-3/16	22-1/2
P401-910CF	24X10	7	19-3/4	25-7/16
P401-912CF	24X12	7-1/2	23	27-1/8
P401-914CF	24X14	7-3/8	24-5/8	27-1/2
P401-916CF	24X16	8-7/16	28-5/16	29-5/16
P401-918CF	24X18	8-5/8	31-1/8	30-15/16
P401-920CF	24X20	8-1/2	33-3/4	33-15/16

P403 Sanitary Tee, Street (Continued)

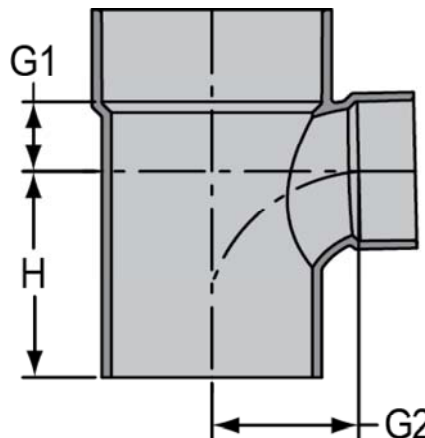
S x H x H



Part Number	Size	G1	G2	H
P403-100C	10	5-5/8	10	14-5/8
P403-120C	12	6-1/2	11	16-1/4

P404 Sanitary Tee, Street, Reducing

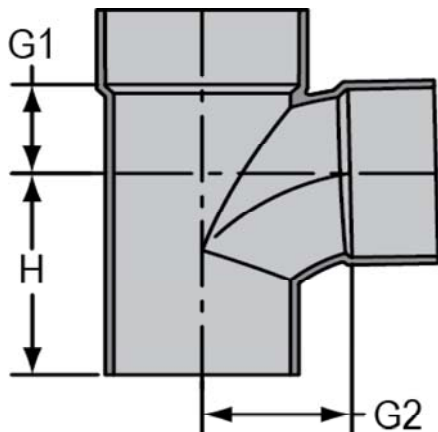
S x H x H



Part Number	Size	G1	G2	H
P404-241C	2X1-1/2X1-1/2	1-3/16	2-3/16	2-11/16
P404-251C	2X1-1/2	1-3/16	2-3/16	2-11/16
P404-337C	3X3X1-1/2	15/16	2-9/16	3-9/32
P404-338C	3X3X2	1-3/16	2-7/8	3-5/8

P403 Sanitary Tee, Street

S x H x H

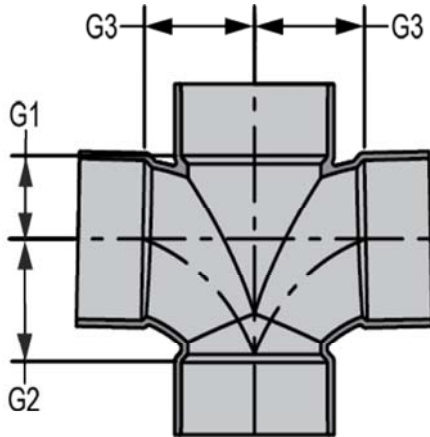


Part Number	Size	G1	G2	H
P403-015C	1-1/2	1	1-3/4	2-7/16
P403-020C	2	1-3/8	2-5/16	3-3/16
P403-030C	3	1-13/16	3-1/16	4-1/2
P403-040C	4	2-1/4	3-7/8	5-5/8
P403-060C	6	3-1/2	5	7-1/2
P403-080C	8	4-1/2	6	9-3/8



P428 Double Sanitary Tee

All Hub

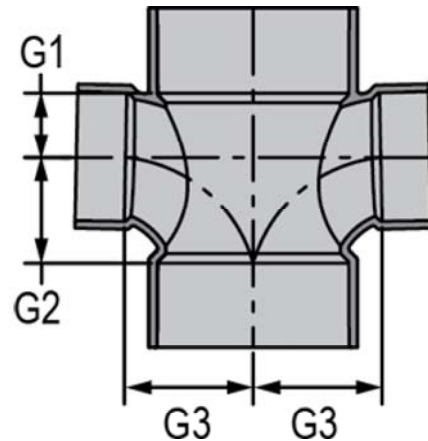


Part Number	Size	G1	G2	G3
P428-015C	1-1/2	1	1-3/4	1-3/4
P428-020C	2	1-3/8	2-5/16	2-5/16
P428-030C	3	1-13/16	3-1/16	3-1/16
P428-040C	4	2-1/4	3-7/8	3-7/8
P428-060CF ⁺	6	4-3/16	12-3/16	11-5/16
P428-080CF ⁺	8	4-5/8	15-5/16	15-3/16
P428-100CF ⁺	10	5-3/16	18-5/8	19-1/8
P428-120CF ⁺	12	5-5/8	21-3/4	21-13/16
P428-140CF ⁺	14	5-5/16	23-1/16	22-3/4
P428-160CF ⁺	16	6-5/8	26-7/8	25-1/2
P428-180CF ⁺	18	7-1/16	29-13/16	28-1/16
P428-200CF ⁺	20	7-9/16	34-3/16	32-1/16
P428-240CF ⁺	24	7-11/16	38-5/16	37-13/16

P429 Double Sanitary Tee, Reducing

(Continued)

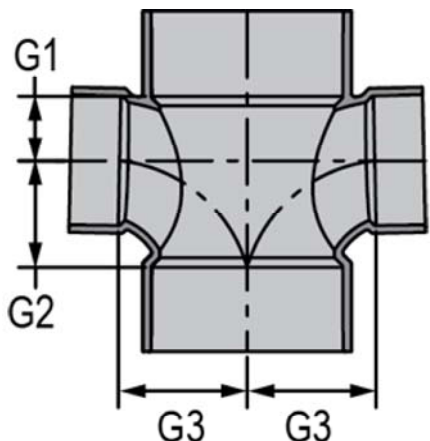
All Hub



Part Number	Size	G1	G2	G3
P429-338C	3X3X2X2	1- 1/8	2- 1/8	2- 7/8
P429-419C	4X4X1-1/2X1-1/2	1- 1/16	2	3-1/4
P429-420C	4X4X2X2	1- 1/8	2- 1/16	3- 5/16
P429-422C	4X4X3X3	1- 3/4	3	3- 9/16
P429-532CF ⁺	6X6X4X4	3-5/16	8-7/16	10-3/16
P429-578CF ⁺	8X8X2X2	3-1/2	6-1/4	8-3/8
P429-580CF ⁺	8X8X3X3	3-3/4	7-1/2	10-5/8
P429-582CF ⁺	8X8X4X4	3-7/8	8-7/8	11-1/8
P429-585CF ⁺	8X8X6X6	3-7/8	11-3/4	12-7/8
P429-621CF ⁺	10X2	3-1/2	6-1/4	9-3/8
P429-623CF ⁺	10X3	4-1/16	7-11/16	11-5/8
P429-624CF ⁺	10X4	4-5/16	9-5/16	12-7/8
P429-626CF ⁺	10X6	4-15/16	12-13/16	13-7/8
P429-628CF ⁺	10X8	5-1/4	15-3/4	16-3/16
P429-661CF ⁺	12X2	3-15/16	6-9/16	10-5/16
P429-663CF ⁺	12X3	4-5/16	9-3/16	13-1/8
P429-664CF ⁺	12X4	4-7/8	12-5/8	14-7/8
P429-666CF ⁺	12X6	4-7/8	12-5/8	14-7/8
P429-668CF ⁺	12X8	5	15-1/2	17-1/8
P429-670CF ⁺	12X10	5-1/16	18-7/16	20-1/16
P429-691CF ⁺	14X2	3-11/16	6-5/16	10-15/16
P429-693CF ⁺	14X3	4-1/2	8	13-3/16
P429-694CF ⁺	14X4	4-9/16	9-7/16	13-11/16
P429-696CF ⁺	14X6	4-5/8	12-3/8	15-7/16
P429-698CF ⁺	14X8	4-13/16	15-3/16	17-3/4
P429-700CF ⁺	14X10	4-7/8	18-1/8	20-1/16
P429-702CF ⁺	14X12	6	22	22-3/8
P429-753CF ⁺	16X3	5-3/16	8-9/16	14-1/8
P429-754CF ⁺	16X4	5-1/8	9-7/8	14-5/8
P429-756CF ⁺	16X6	6-1/16	13-11/16	16-3/8
P429-758CF ⁺	16X8	5-3/8	15-5/8	18-11/16
P429-760CF ⁺	16X10	5-7/16	18-9/16	21-5/8
P429-762CF ⁺	16X12	5-9/16	21-7/16	23-5/16
P429-764CF ⁺	16X14	5-9/16	23-3/16	23-11/16

P429 Double Sanitary Tee, Reducing

All Hub



Part Number	Size	G1	G2	G3
P429-241C	2X1-1/2X1-1/2X1-1/2	1- 3/16	1- 15/16	2- 3/16
P429-251C	2X2X1-1/2X1-1/2	1- 3/16	1- 15/16	2- 3/16
P429-337C	3X3X1-1/2X1-1/2	15/16	1- 3/4	2-9/16

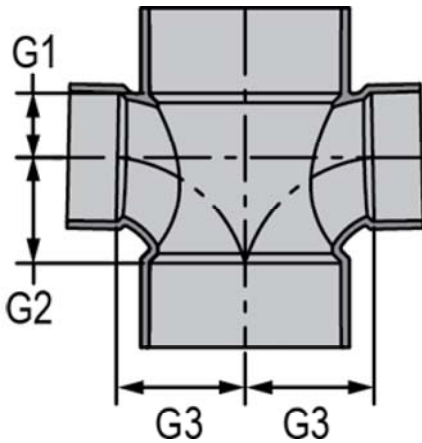


LabWaste® Technical
Product Dimensions

P429 Double Sanitary Tee, Reducing

(Continued)

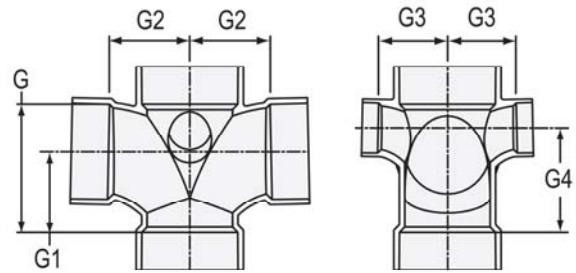
All Hub



Part Number	Size	G1	G2	G3
P429-784CF ⁺	18X4	5-9/16	10-3/16	15-9/16
P429-786CF ⁺	18X6	6-1/8	13-5/8	17-5/16
P429-788CF ⁺	18X8	6-5/16	16-7/16	19-5/8
P429-790CF ⁺	18X10	5-7/8	18-7/8	22-9/16
P429-792CF ⁺	18X12	6	21-3/4	24-1/4
P429-794CF ⁺	18X14	5-5/8	23-1/8	24-5/8
P429-796CF ⁺	18X16	6-13/16	26-15/16	26-7/16
P429-814CF ⁺	20X4	6-1/8	10-5/8	16-9/16
P429-816CF ⁺	20X6	6-3/16	13-9/16	18-5/16
P429-818CF ⁺	20X8	6-5/16	16-7/16	20-9/16
P429-820CF ⁺	20X10	5-7/8	18-7/8	23-1/2
P429-822CF ⁺	20X12	6-1/2	22-1/4	25-1/4
P429-824CF ⁺	20X14	6-3/16	23-9/16	25-9/16
P429-826CF ⁺	20X16	6-3/8	26-3/8	27-3/8
P429-828CF ⁺	20X18	6-9/16	29-3/16	29-1/16
P429-904CF ⁺	24X4	6-15/16	11-5/16	18-7/16
P429-906CF ⁺	24X6	7-1/8	14-3/8	20-3/16
P429-908CF ⁺	24X8	7-5/16	17-3/16	22-1/2
P429-910CF ⁺	24X10	7	19-3/4	25-7/16
P429-912CF ⁺	24X12	7-1/2	23	27-1/8
P429-914CF ⁺	24X14	7-3/8	24-5/8	27-1/2
P429-916CF ⁺	24X16	8-7/16	28-5/16	29-5/16
P429-918CF ⁺	24X18	8-5/8	31-1/8	30-15/16
P429-920CF ⁺	24X20	8-1/2	33-3/4	33-15/16

P439 Double Sanitary Tee with R&L Side Inlets

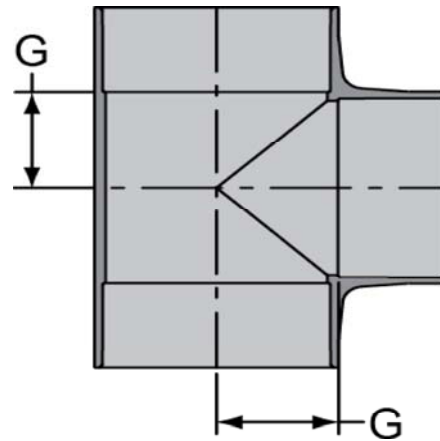
All Hub



Part Number	Size	G	G1	G2	G3	G4
P439-338C	3X3X3X3X2X2	4-7/8	3-1/16	3-1/16	2-7/8	3-11/16
P439-420C	4X4X4X4X2X2	6-1/8	3-7/8	3-7/8	3-3/16	4-15/16

P441 Vent Tee

All Hub

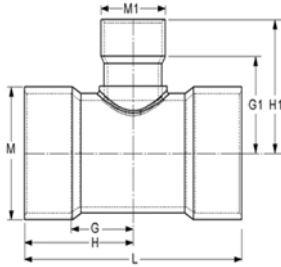


Part Number	Size	G
P441-015C	1-1/2	1-3/16
P441-020C	2	1-1/2
P441-030C	3	1-15/16
P441-040C	4	2-1/2
P441-060C	6	3-5/8
P441-080C	8	4-1/2
P441-080CF ⁺	8	7-5/16
P441-100CF ⁺	10	9
P441-120CF ⁺	12	11-1/4
P441-140CF ⁺	14	11
P441-160CF ⁺	16	12-7/8
P441-180CF ⁺	18	13-3/8
P441-200CF ⁺	20	15-1/2
P441-240CF ⁺	24	17-1/2



P442 Vent Tee, Reducing

All Hub

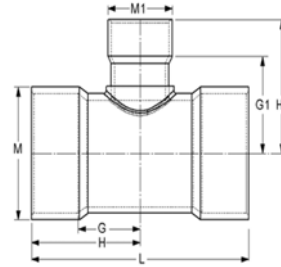


Part Number	Size	G	G1	H	H1	L	M	M1
P442-422CF	4X3	4-13/16	5	7-1/16	7-1/4	14-1/8	5	3-15/16
P442-528CF	6X2	3-3/8	5-5/16	6-5/8	7-1/16	13-1/4	7-3/16	2-11/16
P442-530CF	6X3	4-5/8	6-1/16	7-7/8	8-5/16	15-3/4	7-3/16	3-15/16
P442-578CF	8X2	4-1/16	6-1/4	8-5/16	8	16-5/8	9-1/4	2-11/16
P442-580CF	8X3	4-9/16	7	8-13/16	9-1/4	17-5/8	9-1/4	3-15/16
P442-582CF	8X4	5-1/16	7-5/16	9-5/16	9-9/16	18-5/8	9-1/4	5
P442-623CF	10X3	4-7/8	8	10-1/8	10-1/4	20-1/4	11-1/2	3-15/16
P442-624CF	10X4	5-3/8	8-5/16	10-5/8	10-9/16	21-1/4	11-1/2	5
P442-626CF	10X6	5-7/8	8-3/8	11-1/8	11-5/8	22-1/4	11-1/2	7-3/16
P442-628CF	10X8	6-3/4	8-5/16	12	12-9/16	24	11-1/2	9-1/4
P442-663CF	12X3	5-1/4	9	11-1/2	11-1/4	23	13-9/16	3-15/16
P442-664CF	12X4	5-3/4	9-5/16	12	11-9/16	24	13-9/16	5
P442-666CF	12X6	7	9-3/8	13-1/4	12-5/8	26-1/2	13-9/16	7-3/16
P442-668CF	12X8	8	9-5/16	14-1/4	13-9/16	28-1/2	13-9/16	9-1/4
P442-670CF	12X10	10-1/4	10-3/8	16-1/2	15-5/8	33	13-9/16	11-1/2
P442-693CF	14X3	4-7/8	9-9/16	11-7/8	11-13/16	23-3/4	14-7/8	3-15/16
P442-694CF	14X4	5-3/8	9-7/8	12-3/8	12-1/8	24-3/4	14-7/8	5
P442-698CF	14X8	7-3/8	9-7/8	14-3/8	14-1/8	28-3/4	14-7/8	9-1/4
P442-700CF	14X10	8-1/2	10-15/16	15-1/2	16-3/16	31	14-7/8	11-1/2
P442-702CF	14X12	9-1/2	10-3/4	16-1/2	17	33	14-7/8	13-9/16
P442-753CF	16X3	5-1/8	10-1/2	13-1/8	12-3/4	26-1/4	17	3-15/16
P442-754CF	16X4	5-5/8	10-13/16	13-5/8	13-1/16	27-1/4	17	5
P442-756CF	16X6	6-3/4	10-7/8	14-3/4	14-1/8	29-1/2	17	7-3/16
P442-758CF	16X8	7-3/4	10-13/16	15-3/4	15-1/16	31-1/2	17	9-1/4
P442-760CF	16X10	8-3/4	11-7/8	16-3/4	17-1/8	33-1/2	17	11-1/2
P442-762CF	16X12	9-3/4	11-11/16	17-3/4	17-15/16	35-1/2	17	13-9/16
P442-764CF	16X14	10-3/8	11-15/16	18-3/8	18-15/16	36-3/4	17	14-7/8
P442-784CF	18X4	6-3/8	11-3/4	15-3/8	14	30-3/4	19-1/8	5
P442-786CF	18X6	7-3/8	11-13/16	16-3/8	15-1/16	32-3/4	19-1/8	7-3/16
P442-788CF	18X8	8-3/8	11-3/4	17-3/8	16	34-3/4	19-1/8	9-1/4
P442-790CF	18X10	9-1/2	12-13/16	18-1/2	18-1/16	37	19-1/8	11-1/2
P442-792CF	18X12	10-1/2	12-5/8	19-1/2	18-7/8	39	19-1/8	13-9/16
P442-794CF	18X14	11-1/8	12-7/8	20-1/8	19-7/8	40-1/4	19-1/8	14-7/8
P442-796CF	18X16	12-1/8	13-13/16	21-1/8	21-13/16	42-1/4	19-1/8	17
P442-814CF	20X4	6-1/8	12-3/4	16-1/8	15	32-1/4	21-3/16	5
P442-816CF	20X6	7-1/4	12-13/16	17-1/4	16-1/16	34-1/2	21-3/16	7-3/16
P442-818CF	20X8	5-1/4	12-3/4	18-1/4	17	36-1/2	21-3/16	9-1/4
P442-820CF	20X10	9-1/4	13-13/16	19-1/4	19-1/16	38-1/2	21-3/16	11-1/2

P442 Vent Tee, Reducing

(Continued)

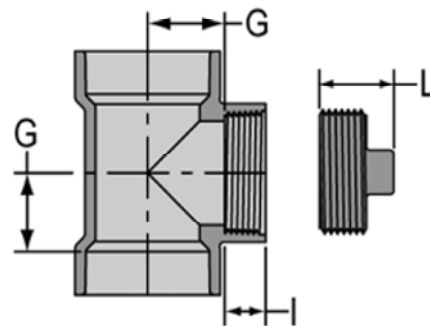
All Hub



Part Number	Size	G	G1	H	H1	L	M	M1
P442-822CF	20X12	10-1/4	13-5/8	20-1/4	19-7/8	40-1/2	21-3/16	13-9/16
P442-824CF	20X14	10-7/8	13-7/8	20-7/8	20-7/8	41-3/4	21-3/16	14-7/8
P442-826CF	20X16	11-7/8	14-13/16	21-7/8	22-13/16	43-3/4	21-3/16	
P442-828CF	20X18	12-7/8	14-3/8	22-7/8	23-3/8	45-3/4	21-3/16	19-1/8
P442-904CF	24X4	7-3/8	14-5/8	19-3/8	16-7/8	38-3/4	25-3/8	
P442-906CF	24X6	8-3/8	14-11/16	20-3/8	17-15/16	40-3/4	25-3/8	7-3/16
P442-908CF	24X8	9-3/8	14-5/8	21-3/8	18-7/8	42-3/4	25-3/8	9-1/4
P442-910CF	24X10	10-1/2	15-11/16	22-1/2	20-15/16	45	25-3/8	11-1/2
P442-912CF	24X12	11-1/2	15-1/2	23-1/2	21-3/4	47	25-3/8	13-9/16
P442-914CF	24X14	12-1/8	15-3/4	24-1/8	22-3/4	48-1/4	25-3/8	14-7/8
P442-916CF	24X16	13-1/8	16-11/16	25-1/8	24-11/16	50-1/4	25-3/8	17
P442-918CF	24X18	14-1/8	16-1/4	26-1/8	25-1/4	52-1/4	25-3/8	19-1/8
P442-920CF	24X20	15-1/8	17-5/16	27-1/8	27-5/16	54-1/4	25-3/8	21-3/16

P444X Cleanout Tee w/Plug

H x H x Fpt

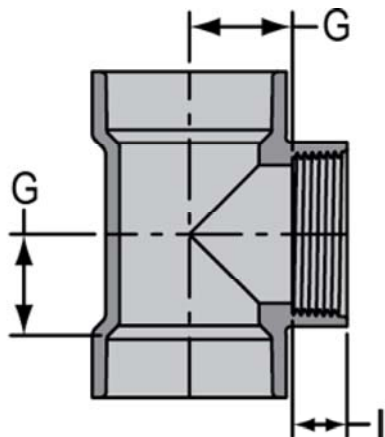


Part Number	Size	G	I	L
P444X-015C	1-1/2	1- 3/16	5/8	1- 3/8
P444X-020C	2	1- 1/2	5/8	1-3/8
P444X-030C	3	1- 7/8	3/4	1-3/4
P444X-040C	4	2- 1/2	7/8	1- 7/8
P444X-060C	6	3-1/2	1	2
P444X-080C	8	4-9/16	1-1/8	2-1/16



P445 Cleanout Tee

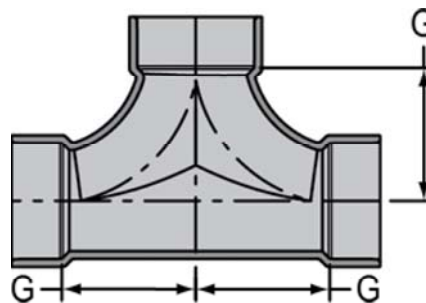
H x H x Fpt



Part Number	Size	G	I
P445-015C	1-1/2	1- 3/16	5/8
P445-020C	2	1-7/16	5/8
P445-030C	3	1- 7/8	3/4
P445-040C	4	2- 1/2	7/8
P445-060C	6	3- 1/2	1

P448 2-WAY Cleanout

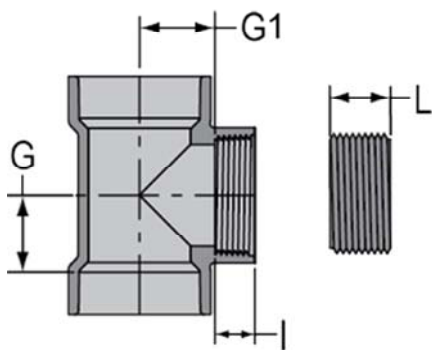
All Hub



Part Number	Size	G
P448-030C	3	4-1/16
P448-040C	4	4-7/8

P445X Cleanout Tee with Counter Sunk Plug

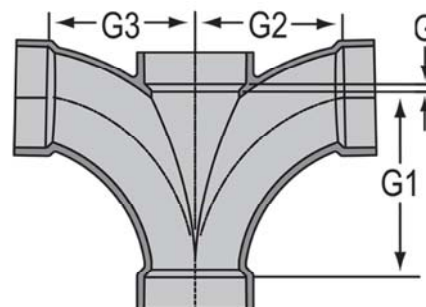
H x H



Part Number	Size	G	G1	I	L
P445X-015C	1-1/2	1-3/16	1-3/16	5/8	5/8
P445X-020C	2	1-1/2	1-1/2	5/8	5/8
P445X-030C	3	1- 7/8	1-7/8	3/4	3/4
P445X-040C	4	2- 1/2	2-1/2	7/8	7/8
P445X-060C	6	3- 1/2	3-1/2	1	1
P445X-080CF	8	7-5/16	4-1/4	1	1-1/2
P445X-100CF	10	9	5-3/4	1	1-1/2
P445X-120CF	12	9-1/4	7-9/16	1	1-1/2

P500 Double Fixture Fitting

All Hub

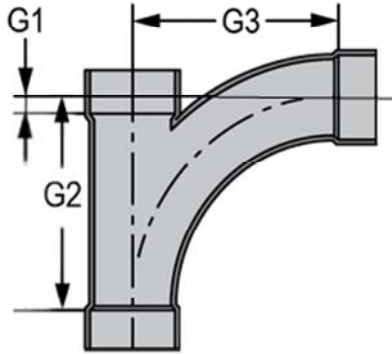


Part Number	Size	G	G1	G2	G3
P500-020C	2X2X2X2	3/8	4-1/4	3- 1/2	3- 1/2
P500-030C	3X3X3X3	1/2	6- 1/4	4-15/16	4-15/16
P500-241C	2X1-1/2X1-1/2X1-1/2	3/8	3- 1/8	2- 7/8	2- 7/8
P500-251C	2X2X1-1/2X1-1/2	3/8	3- 1/4	2-7/8	2-7/8
P500-338C	3X2X3X3	1/2	6- 9/32	4- 7/8	4- 7/8



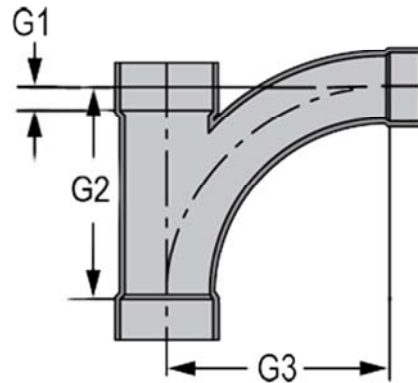
**P501 Combo Wye + 1/8 Bend
(Long Turn Tee Wye)**

All Hub



**P502 Combination Wye
+ 1/8 Bend Reducing
(Long Turn Tee Wye)**

All Hub



Part Number	Size	G1	G2	G3
P501-015C	1-1/2	7/16	3-15/16	3-15/16
P501-020C	2	11/16	5-1/8	5-1/8
P501-030C	3	1-1/8	7-9/16	7-9/16
P501-040C	4	1-1/2	10	10
P501-060CF ⁺	6	13/16	15-9/16	12-11/16
P501-080CF ⁺	8	3/16	19-3/4	16-1/8
P501-100CF ⁺	10	1/16	23-3/4	19-13/16
P501-120CF ⁺	12	1/2	27-7/8	23-5/8
P501-140CF ⁺	14	1-1/4	29-5/8	29-5/16
P501-160CF ⁺	16	7/8	34-3/8	33
P501-180CF ⁺	18	1-3/8	38-1/4	36-9/16
P501-200CF ⁺	20	1-13/16	43-9/16	41-7/16
P501-240CF ⁺	24	4-5/16	50-5/16	50-5/16

Part Number	Size	G1	G2	G3
P502-251C	2X2X1-1/2	7/16	3-15/16	4-3/16
P502-337C	3X3X1-1/2	7/16	3-15/16	4-13/16
P502-338C	3X3X2	11/16	5-1/8	5-11/16
P502-420C	4X4X2	5/8	5-1/8	6-1/8
P502-422C	4X4X3	1-1/16	7-9/16	8-1/16
P502-532CF ⁺	6X4	1/16	11-11/16	11-5/16
P502-578C	8X8X2	7/8	8-7/8	10
P502-578CF ⁺	8X2	1-3/8	8-3/8	9-1/4
P502-580CF ⁺	8X3	15/16	10-5/16	10-1/16
P502-582CF ⁺	8X4	9/16	12-3/16	12-1/4
P502-585CF ⁺	8X6	7/16	15-3/16	13-11/16
P502-621CF ⁺	10X2	1-3/8	8-3/8	10-5/16
P502-623CF ⁺	10X3	1-1/4	10-7/16	11-3/4
P502-624CF ⁺	10X4	1-1/16	12-9/16	13-1/4
P502-626CF ⁺	10X6	1-9/16	16-3/16	14-11/16
P502-628CF ⁺	10X8	3/4	20-1/4	17-1/8
P502-661CF ⁺	12X2	1-13/16	8-11/16	11-1/4
P502-663CF ⁺	12X3	1-3/8	10-5/8	12-11/16
P502-664CF ⁺	12X4	1-1/16	12-7/16	14-1/4
P502-666CF ⁺	12X6	1-1/2	16	15-5/8
P502-668CF ⁺	12X8	9/16	19-15/16	18-1/8
P502-670CF ⁺	12X10	1/16	23-9/16	20-3/4
P502-691CF ⁺	14X2	1-5/8	8-3/8	11-13/16
P502-693CF ⁺	14X3	1-11/16	10-13/16	13-5/16
P502-694CF ⁺	14X4	1-5/16	12-11/16	14-13/16
P502-696CF ⁺	14X6	1-1/4	15-3/4	16-1/4
P502-698CF ⁺	14X8	5/16	19-11/16	18-1/16
P502-700CF ⁺	14X10	1/4	23-1/4	21-3/8
P502-702CF ⁺	14X12	1/8	28-1/8	24-1/4
P502-753CF ⁺	16X3	2-3/8	11-3/8	14-1/4
P502-754CF ⁺	16X4	1-7/8	13-1/8	15-3/4
P502-756CF ⁺	16X6	2-11/16	17-1/16	17-3/16

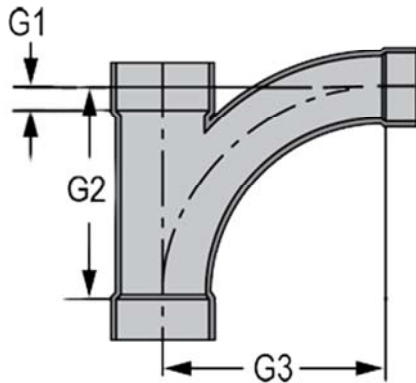


LabWaste® Technical
Product Dimensions

P502 Combination Wye + 1/8 Bend Reducing (Long Turn Tee Wye)

(Continued)

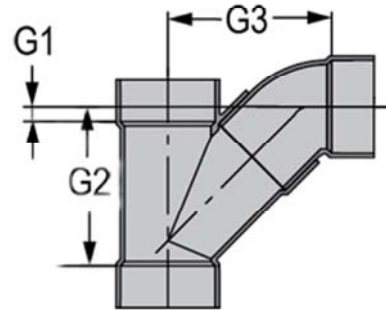
All Hub



Part Number	Size	G1	G2	G3
P502-758CF	16X8	7/8	20-1/8	19-5/8
P502-760CF	16X10	5/16	23-11/16	22-5/16
P502-762CF	16X12	9/16	27-9/16	25-3/16
P502-764CF	16X14	1	29-3/4	30-1/4
P502-784CF	18X4	2-5/16	13-7/16	16-11/16
P502-786CF	18X6	2-3/4	17	18-1/8
P502-788CF	18X8	1-13/16	20-15/16	20-9/16
P502-790CF	18X10	3/4	24	23-1/4
P502-792CF	18X12	1/8	27-7/8	26-1/8
P502-794CF	18X14	15/16	29-11/16	31-3/16
P502-796CF	18X16	11/16	34-7/16	33-15/16
P502-814CF	20X4	2-7/8	13-7/8	17-11/16
P502-816CF	20X6	2-13/16	16-15/16	19-1/16
P502-818CF	20X8	1-7/8	20-7/8	21-9/16
P502-820CF	20X10	3/4	24	24-3/16
P502-822CF	20X12	3/8	28-3/8	27-1/16
P502-824CF	20X14	3/8	30-1/8	32-1/8
P502-826CF	20X16	1-1/8	33-7/8	34-7/8
P502-828CF	20X18	1-7/8	37-5/8	37-1/2
P502-904CF	24X4	3-11/16	14-9/16	19-9/16
P502-906CF	24X6	3-3/4	17-3/4	21
P502-908CF	24X8	2-13/16	21-11/16	23-7/16
P502-910CF	24X10	1-7/8	24-7/8	26-1/8
P502-912CF	24X12	1-3/8	29-1/8	29
P502-914CF	24X14	13/16	31-3/16	34-1/16
P502-916CF	24X16	15/16	35-13/16	36-13/16
P502-918CF	24X18	3/16	39-9/16	39-7/16
P502-920CF	24X20	7/8	43-3/16	43-3/8

P503 Combination Wye and 1/8 Bend (Two Piece)

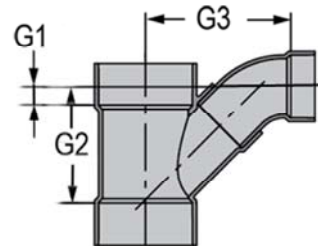
All Hub



Part Number	Size	G1	G2	G3
P503-040C	4	7/8	9-3/16	9-1/2
P503-060C	6	1-1/16	11-3/16	11-1/2
P503-080C	8	1-3/16	14-7/8	14-5/8
P503-100C	10	1-1/4	18-5/16	17-7/8
P503-120C	12	1-11/16	21-9/16	20-15/16

P504 Combination Wye and 1/8 Bend, Reducing (Two Piece)

All Hub



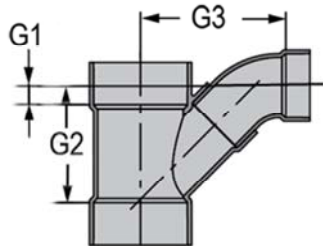
Part Number	Size	G1	G2	G3
P504-241C	2X1-1/2X1-1/2	1/2	4-1/8	4-7/16
P504-422C	4X4X3	1	7-5/8	8-5/16
P504-528C ¹	6X2	5/8	7-13/16	9-3/32
P504-530C	6X3	5/8	7-3/4	9-5/16
P504-532C	6X4	1-3/8	8-1/4	10-1/4
P504-580C	8X3	1-1/8	8-13/16	10-9/16
P504-582C	8X4	1-1/4	9-1/4	11-1/8
P504-585C	8X6	1	10-1/2	12-1/2
P504-623C ¹	10X3	1-1/4	12-1/16	14-3/32



P504 Combination Wye and 1/8 Bend, Reducing (Two Piece)

(Continued)

All Hub

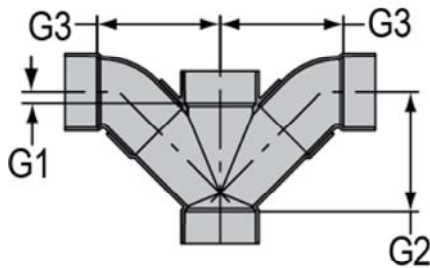


Part Number	Size	G1	G2	G3
P504-624C	10X4	1-7/16	12-1/2	14-11/16
P504-626C	10X6	15/16	11-3/4	14- 1/16
P504-628C	10X8	15/16	14-1/2	15- 1/2
P504-663C ¹	12X3	1-9/32	20-11/16	19-3/16
P504-664C	12X4	1-11/16	21-1/16	20-1/16
P504-666C	12X6	1-9/16	20-15/16	19-3/4
P504-668C ¹	12X8	1-3/16	20-9/16	19-5/16
P504-670C	12X10	5/8	19-11/16	19-1/2

¹ Sized with Bushing

P507 Double Combination Wye and 1/8 Bend

All Hub

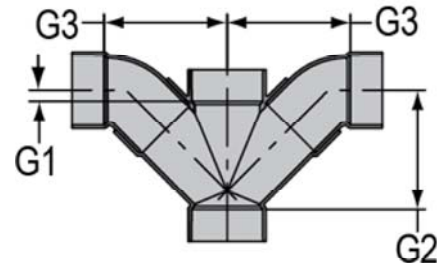


Part Number	Size	G1	G2	G3
P507-020C	2	9/16	5-7/16	5-5/8
P507-030C	3	7/8	7-3/8	7-9/16
P507-040C	4	15/16	9-1/8	9-1/2
P507-060C	6	1-1/16	11-3/16	11-1/2
P507-080CF	8	3/16	19-3/4	16-1/8

P507 Double Combination Wye and 1/8 Bend

(Continued)

All Hub



Part Number	Size	G1	G2	G3
P507-100CF ⁺	10	1-1/6	23-3/4	19-13/16
P507-120CF ⁺	12	1/2	27-7/8	23-5/8
P507-140CF ⁺	14	1-1/4	29-5/8	29-5/16
P507-160CF ⁺	16	7/8	34-3/8	33
P507-180CF ⁺	18	1-3/8	38-1/4	36-9/16
P507-200CF ⁺	20	1-13/16	43-9/16	41-7/16
P507-240CF ⁺	24	4-5/16	50-5/16	50-5/16
P507-251C	2X2X1-1/2X1-1/2	3/8	4-21/32	4-23/32
P507-338C	3X3X2X2	3/4	5-11/16	6-3/8
P507-420C	4X4X2X2	7/8	5-7/8	7-1/32
P507-422C	4X4X3X3	1	7-9/16	8-5/16
P507-530C	6X6X3X3	1- 1/4	8-1/8	9-11/16
P507-532C	6X6X4X4	1-3/8	8-1/4	10-1/4
P507-578CF	8X2	1-3/8	8-3/8	9-1/4
P507-580CF ⁺	8X3	15/16	10-5/16	10-11/16
P507-582CF	8X4	9/16	12-3/16	12-1/4
P507-585CF	8X6	7/16	15-3/16	13-11/16
P507-621CF ⁺	10X2	1-3/8	8-3/8	10-5/16
P507-623CF ⁺	10X3	1-1/4	10-1/2	11-3/4
P507-624CF	10X10X4X4	1-1/16	12-9/16	13-1/4
P507-626CF	10X10X6X6	1-9/16	16-3/16	14-11/16
P507-628CF	10X10X8X8	3/4	20-1/4	17-1/8
P507-661CF ⁺	12X2	1-13/16	8-11/16	11-1/4
P507-663CF ⁺	12X3	1-3/8	10-5/8	12-11/16
P507-664CF ⁺	12X12X4X4	1-1/16	12-7/16	14-1/4
P507-666CF ⁺	12X12X6X6	1-1/2	16	15-5/8
P507-668CF	12X12X8X8	9/16	19-15/16	18-1/8
P507-670CF	12X12X10X10	1/16	23-9/16	20-3/4
P507-691CF ⁺	14X2	1-5/8	8-3/8	11-13/16
P507-693CF ⁺	14X3	1-11/16	10-13/16	13-5/16
P507-694CF ⁺	14X14X4X4	1-5/16	12-11/16	14-13/16
P507-696CF ⁺	14X6	1-1/4	15-3/4	16-1/4
P507-698CF ⁺	14X8	5/16	19-11/16	18-11/16
P507-700CF ⁺	14X14X10X10	1/4	23-1/4	21-3/8
P507-702CF ⁺	14X12	1/8	28-1/8	24-1/4

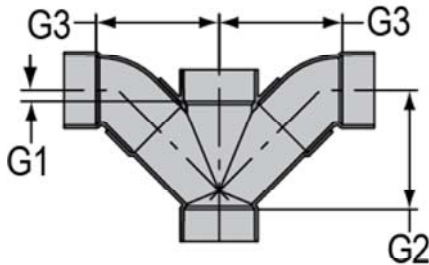


LabWaste® Technical
Product Dimensions

**P507 Double Combination
 Wye and 1/8 Bend**

(Continued)

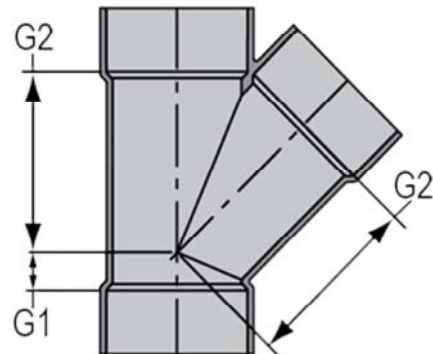
All Hub



Part Number	Size	G1	G2	G3
P507-753CF ⁺	16X3	2-3/8	11-3/8	14-1/4
P507-754CF ⁺	16X4	1-7/8	13-1/8	15-3/4
P507-756CF ⁺	16X6	2-11/16	17-1/16	17-3/16
P507-758CF ⁺	16X8	7/8	20-1/8	19-5/8
P507-760CF ⁺	16X10	5/16	24	22-5/16
P507-762CF ⁺	16X12	9/16	27	25-3/16
P507-764CF ⁺	16X14	1	28-3/4	30-1/4
P507-784CF ⁺	18X4	2-5/16	13-7/16	16-11/16
P507-786CF ⁺	18X6	2-3/4	17	18-1/8
P507-788CF ⁺	18X8	1-13/16	20-15/16	20-9/16
P507-790CF ⁺	18X10	3/4	24	23-1/4
P507-792CF ⁺	18X12	1/8	27-3/4	26-1/8
P507-794CF ⁺	18X14	15/16	29-5/8	31-3/16
P507-796CF ⁺	18X16	11/16	33-7/16	33-15/16
P507-814CF ⁺	20X4	2-7/8	13-7/8	17-1/16
P507-818CF ⁺	20X8	1-7/8	20-7/8	21-9/16
P507-816CF ⁺	20X6	2-13/16	16-15/16	19-1/16
P507-820CF ⁺	20X10	3/4	24	24-3/16
P507-822CF ⁺	20X12	3/8	28-3/8	27-1/16
P507-824CF ⁺	20X14	3/8	29-3/4	32-1/8
P507-826CF ⁺	20X16	1-1/8	32-3/4	34-7/8
P507-828CF ⁺	20X18	1-7/8	35-3/4	37-1/2
P507-904CF ⁺	24X4	3-11/16	14-9/16	19-9/16
P507-906CF ⁺	24X6	3-3/4	17-3/4	21
P507-908CF ⁺	24X8	2-13/16	21-11/16	23-7/16
P507-910CF ⁺	24X10	1-7/8	24-7/8	26-1/8
P507-912CF ⁺	24X12	1-3/8	29-1/8	29
P507-914CF ⁺	24X14	13/16	31-3/16	34-1/16
P507-916CF ⁺	24X16	15/16	35-13/16	36-13/16
P507-918CF ⁺	24X18	3/16	39-9/16	39-7/16
P507-920CF ⁺	24X20	7/8	42-1/4	43-3/8

P600 45° Wye

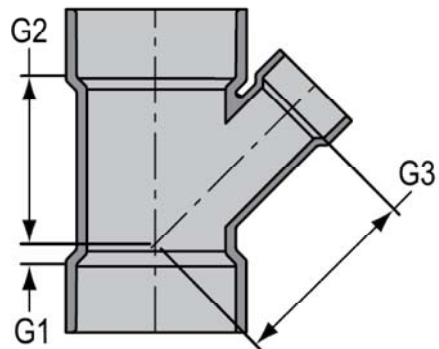
All Hub



Part Number	Size	G1	G2
P600-015C	1-1/2	1-1/8	2-7/8
P600-020C	2	1-3/8	3-5/8
P600-030C	3	1-5/8	5
P600-040C	4	1-7/8	6-3/8
P600-060C	6	1-3/4	8-7/16
P600-080C	8	2-3/8	11-3/4
P600-080CF ⁺	8	5-5/8	14-5/16
P600-100C	10	2-1/2	13-15/16
P600-100CF ⁺	10	6-9/16	17-1/4
P600-120C	12	3-3/32	16-1/4
P600-120CF ⁺	12	7-5/16	20-1/16
P600-140CF ⁺	14	7-3/16	21-3/16
P600-160CF ⁺	16	8-3/4	24-3/4
P600-180CF ⁺	18	9-7/16	27-7/16
P600-200CF ⁺	20	11-7/16	30-5/16
P600-240CF ⁺	24	11	35

P601 45° Wye, Reducing

All Hub



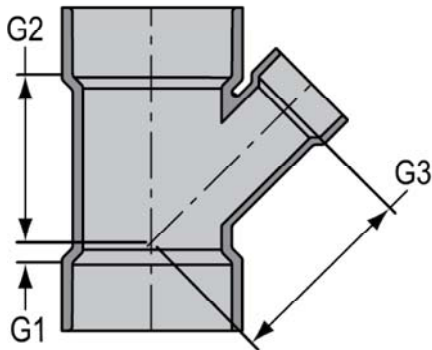
Part Number	Size	G1	G2	G3
P601-241C	2X1-1/2X1-1/2	3/4	2-13/16	2-15/16
P601-251C	2X2X1-1/2	1-1/16	3-5/16	3-17/32



P601 45° Wye, Reducing

(Continued)

All Hub

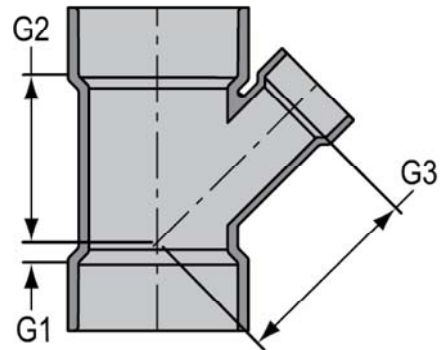


Part Number	Size	G1	G2	G3
P601-257C	2X1-1/2X2	1	3-1/2	3-3/8
P601-337C	3X3X1-1/2	1/2	3-3/4	4- 5/16
P601-338C	3X3X2	7/8	4-1/8	4-5/8
P601-419C	4X4X1-1/2	0	3- 3/4	4-1/2
P601-420C	4X4X2	3/8	4-11/16	5- 9/16
P601-422C	4X4X3	1-1/16	5-9/16	6
P601-528C ¹	6X6X2	3/8	6- 3/4	8- 3/8
P601-530C	6X6X3	1/4	6-15/16	7-3/8
P601-532C	6X6X4	1/4	6- 11/16	7- 7/16
P601-578C ¹	8X8X2	3/8	7-5/8	9-15/16
P601-578CF ⁺	8X8X2	9/16	9-3/16	9-3/4
P601-580C	8X8X3	7/16	9- 1/8	7-5/8
P601-580CF ⁺	8X8X3	1-5/16	9-15/16	10-7/8
P601-582C	8X8X4	3/8	7-5/8	8-5/8
P601-582CF ⁺	8X8X4	2-1/16	10-11/16	11-7/8
P601-585C	8X8X6	1	9- 1/2	9-13/16
P601-585CF ⁺	8X8X6	3-1/2	12-1/8	12-13/16
P601-621C ¹	10X10X2	3/16	11	14-1/8
P601-621CF ⁺	10X10X2	1/2	10-1/4	11-3/16
P601-623C ¹	10X10X3	3/16	10-31/32	14-3/16
P601-623CF ⁺	10X10X3	1/2	11-1/4	12-5/16
P601-624C ¹	10X10X4	3/16	11	13-11/16
P601-624CF ⁺	10X10X4	1-7/16	12-3/16	13-5/16
P601-626C	10X10X6	3/16	11	12
P601-626CF ⁺	10X10X6	3-1/2	14-1/4	14-1/4
P601-628C	10X10X8	1- 7/16	12- 1/2	13
P601-628CF ⁺	10X10X8	5-1/8	15-7/8	15-11/16
P601-661C ¹	12X12X2	3-3/16	16- 3/16	22-1/2
P601-661CF ⁺	12X12X2	1-1/8	11-5/8	12-9/16
P601-663C ¹	12X12X3	3-3/16	16- 3/16	21-13/16
P601-663CF ⁺	12X12X3	3/8	12-3/8	13-11/16
P601-664C ¹	12X12X4	3-3/16	16- 3/16	21-5/16
P601-664CF ⁺	12X12X4	3/8	13-1/8	14-11/16
P601-666C ¹	12X12X6	3-3/16	16- 3/16	20-1/16
P601-666CF ⁺	12X12X6	2-3/8	15-1/8	15-5/8

P601 45° Wye, Reducing

(Continued)

All Hub



Part Number	Size	G1	G2	G3
P601-668C ¹	12X12X8	3-3/16	16-3/16	19
P601-668CF ⁺	12X12X8	3-7/8	16-5/8	17-1/16
P601-670C ¹	12X10	3-3/16	16- 3/16	17-1/2
P601-670CF ⁺	12X12X10	5-3/8	18-1/8	18-1/8
P601-691CF ⁺	14X14X2	2	12	13-7/16
P601-693CF ⁺	14X14X3	3/4	13-1/4	14-9/16
P601-694CF ⁺	14X14X4	0	14	15-9/16
P601-696CF ⁺	14X14X6	1-1/2	15-1/2	16-1/2
P601-698CF ⁺	14X14X8	3	17	7-15/16
P601-700CF ⁺	14X14X10	4-1/2	18-1/2	19
P601-702CF ⁺	14X14X12	7	21	20-15/16
P601-751CF ⁺	16X16X2	2	14	14-3/4
P601-753CF ⁺	16X16X3	1-1/8	14-7/8	15-7/8
P601-754CF ⁺	16X16X4	1/2	15-1/2	16-7/8
P601-756CF ⁺	16X16X6	1-7/8	17-7/8	17-13/16
P601-758CF ⁺	16X16X8	2-1/2	18-1/2	19-1/4
P601-760CF ⁺	16X16X10	4	20	20-5/16
P601-762CF ⁺	16X16X12	5-1/2	21-1/2	22-1/4
P601-764CF ⁺	16X16X14	6-3/8	22-3/8	22-1/2
P601-784CF ⁺	18X18X4	1-1/8	16-7/8	18-3/16
P601-786CF ⁺	18X18X6	7/8	18-7/8	19-1/8
P601-788CF ⁺	18X18X8	2-3/8	20-3/8	20-9/16
P601-790CF ⁺	18X18X10	3-3/8	21-3/8	21-5/8
P601-792CF ⁺	18X18X12	4-7/8	22-7/8	23-9/16
P601-794CF ⁺	18X14	5-3/8	23-3/8	23-13/16
P601-796CF ⁺	18X18X16	7-7/8	25-7/8	26-1/16
P601-814CF ⁺	20X20X4	1-5/8	18-3/8	19-9/16
P601-816CF ⁺	20X20X6	1/8	19-7/8	20-1/2
P601-818CF ⁺	20X20X8	1-3/8	21-3/8	21-15/16
P601-820CF ⁺	20X20X10	2-3/8	22-3/8	23
P601-822CF ⁺	20X20X12	4-3/8	24-3/8	24-15/16
P601-824CF ⁺	20X20X14	4-7/8	24-7/8	25-3/16
P601-826CF ⁺	20X16	6-3/8	26-3/8	27-7/16
P601-828CF ⁺	20X18	7-7/8	27-7/8	26-13/16
P601-904CF ⁺	24X4	2-7/8	21-1/8	22-1/4

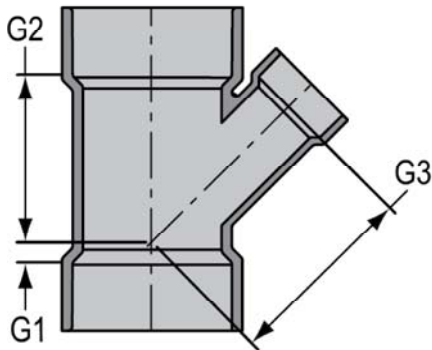


LabWaste® Technical
Product Dimensions

P601 45° Wye, Reducing

(Continued)

All Hub

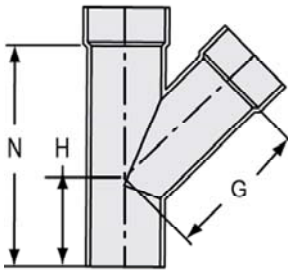


Part Number	Size	G1	G2	G3
P601-906CF ¹	24X24X6	1-1/4	22-3/4	23-3/16
P601-908CF ¹	24X24X8	1/4	24-1/4	24-5/8
P601-910CF ¹	24X24X10	1-3/8	25-3/8	25-11/16
P601-912CF ¹	24X24X12	3-1/4	27-1/4	27-5/8
P601-914CF ¹	24X24X14	4	28	27-7/8
P601-916CF ¹	24X24X16	6-3/8	30-3/8	30-1/8
P601-918CF ¹	24X24X18	7-7/8	31-7/8	31-1/2
P601-920CF ¹	24X24X20	9-1/8	33-1/8	33

¹ Sized with Bushing

P602 45° Wye, Street

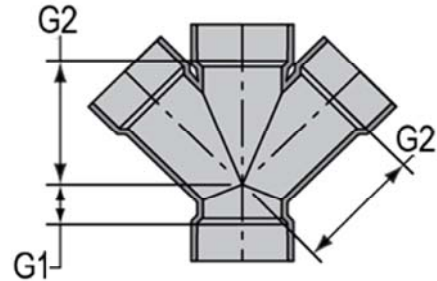
S x H x H



Part Number	Size	G	H	N
P602-030C	3	5	3	8
P602-040C	4	6-7/16	3-1/2	9 15/16

P611 Double Wye

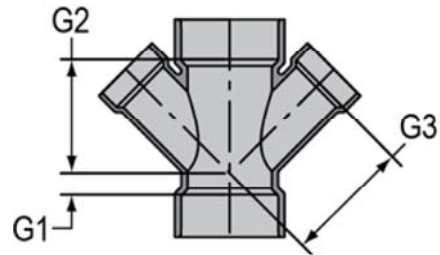
All Hub



Part Number	Size	G1	G2
P611-015C	1-1/2	1- 1/8	2-7/8
P611-020C	2	1- 3/8	3-3/8
P611-030C	3	1- 5/8	5
P611-040C	4	1-7/8	6-3/8
P611-060C	6	1-3/4	8-7/16
P611-080CF	8	5-5/8	14-5/16
P611-100CF	10	6-9/16	17-1/4
P611-120CF	12	7-5/16	20-1/16
P611-140CF	14	7-3/16	21-3/16
P611-160CF	16	8-3/4	24-3/4
P611-180CF	18	9-7/16	27-7/16
P611-200CF	20	11-7/16	30-5/16
P611-240CF	24	11	35

P612 Double Wye, Reducing

All Hub



Part Number	Size	G1	G2	G3
P612-241C	2X1-1/2X1-1/2X1-1/2	1-1/16	3-5/16	3-7/16
P612-251C	2X2X1-1/2X1-1/2	1- 1/16	3- 5/16	3- 7/16
P612-337C	3X3X1-1/2X1-1/2	1/2	3- 3/4	4- 5/16
P612-338C	3X3X2X2	7/8	4- 1/16	4- 5/8
P612-420C	4X4X2X2	3/8	4- 11/16	5-9/16

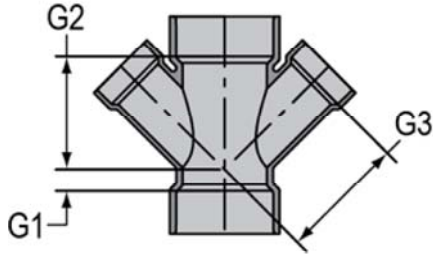
LabWaste® Technical
Product Dimensions



P612 Double Wye, Reducing

(Continued)

All Hub

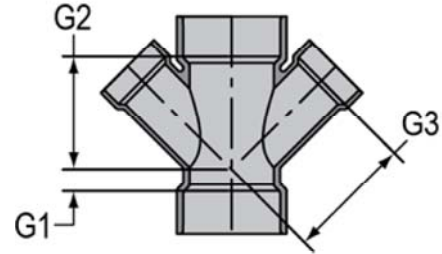


Part Number	Size	G1	G2	G3
P612-422C	4X4X3X3	1- 1/16	5- 9/16	6
P612-530C ¹	6X6X3X3	3/16	6-11/16	7-15/16
P612-532C	6X6X4X4	3/16	6-11/16	7- 7/16
P612-578CF ⁺	8X8X2X2	9/16	9-3/16	9-3/4
P612-580CF	8X8X3X3	1-5/16	9-15/16	10-7/8
P612-582CF	8X8X4X4	2-1/16	10-11/16	11-7/8
P612-585CF	8X8X6X6	3-1/2	12-1/8	12-13/16
P612-621CF ⁺	10X10X2X2	1/2	10-1/4	11-3/16
P612-623CF ⁺	10X10X3X3	1/2	11-1/4	12-5/16
P612-624CF	10X10X4X4	1-7/16	12-3/16	13-5/16
P612-626CF ⁺	10X10X6X6	3-1/2	14-1/4	14-1/4
P612-628CF	10X10X8X8	5-1/8	15-7/8	15-11/16
P612-661CF ⁺	12X12X2X2	1-1/8	11-5/8	12-9/16
P612-663CF ⁺	12X12X3X3	3/8	12-3/8	13-11/16
P612-664CF	12X12X4X4	3/8	13-1/8	14-11/16
P612-666CF ⁺	12X12X6X6	2-3/8	15-1/8	15-5/8
P612-668CF ⁺	12X12X8X8	3-7/8	16-5/8	17-1/16
P612-670CF ⁺	12X12X10X10	5-3/8	18-1/8	18-1/8
P612-691CF ⁺	14X14X2X2	2	12	13-7/16
P612-693CF ⁺	14X14X3X3	3/4	13-1/4	16-13/16
P612-694CF ⁺	14X14X4X4	0	14	15-9/16
P612-698CF ⁺	14X14X8X8	3	17	17-15/16
P612-696CF ⁺	14X14X6X6	1-1/2	15-1/2	16-1/2
P612-700CF ⁺	14X14X10X10	4-1/2	18-1/2	19
P612-702CF ⁺	14X14X12X12	7	21	20-15/16
P612-751CF ⁺	16X16X2X2	2	14	14-3/4
P612-753CF ⁺	16X16X3X3	1-1/8	14-7/8	15-7/8
P612-754CF ⁺	16X16X4X4	1/2	15-1/2	16-7/8
P612-756CF ⁺	16X16X6X6	1-7/8	17-7/8	17-13/16
P612-758CF ⁺	16X16X8X8	2-1/2	18-1/2	19-1/4
P612-760CF ⁺	16X16X10X10	4	20	20-5/16
P612-762CF ⁺	16X16X12X12	5-1/2	21-1/2	22-1/4
P612-764CF ⁺	16X16X14X14	6-3/8	22-3/8	22-1/2
P612-784CF ⁺	18X18X4X4	1-1/8	16-7/8	18-3/16
P612-786CF ⁺	18X18X6X6	7/8	18-7/8	19-1/8

P612 Double Wye, Reducing

(Continued)

All Hub



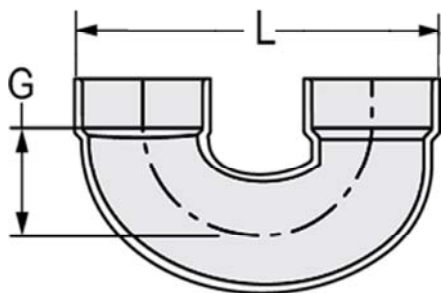
Part Number	Size	G1	G2	G3
P612-788CF ⁺	18X18X8X8	2-3/8	20-3/8	20-9/16
P612-790CF ⁺	18X18X10X10	3-3/8	21-3/8	21-5/8
P612-792CF ⁺	18X18X12X12	4-7/8	22-7/8	23-9/16
P612-794CF ⁺	18X18X14X14	5-3/8	23-3/8	23-13/16
P612-796CF ⁺	18X18X16X16	7-7/8	25-7/8	26-1/16
P612-814CF ⁺	20X20X4X4	1-5/8	18-3/8	19-9/16
P612-816CF ⁺	20X20X6X6	1/8	19-7/8	20-1/2
P612-818CF ⁺	20X20X8X8	1-3/8	21-3/8	21-15/16
P612-820CF ⁺	20X20X10X10	2-3/8	22-3/8	23
P612-822CF ⁺	20X20X12X12	4-3/8	24-3/8	24-15/16
P612-824CF ⁺	20X20X14X14	4-7/8	24-7/8	25-3/16
P612-826CF ⁺	20X20X16X16	6-3/8	26-3/8	27-7/16
P612-828CF ⁺	20X20X18X18	7-7/8	27-7/8	28-13/16
P612-904CF ⁺	24X24X4X4	2-7/8	21-1/8	22-1/4
P612-906CF ⁺	24X24X6X6	1-1/4	22-3/4	23-3/16
P612-908CF ⁺	24X24X8X8	1/4	24-1/4	24-5/8
P612-910CF ⁺	24X24X10X10	1-3/8	25-3/8	25-11/16
P612-912CF ⁺	24X24X12X12	3-1/4	27-1/4	27-5/8
P612-914CF ⁺	24X24X14X14	4	28	27-7/8
P612-916CF ⁺	24X24X16X16	6-3/8	30-3/8	30-1/8
P612-918CF ⁺	24X24X18X18	7-7/8	31-7/8	31-1/2
P612-920CF ⁺	24X24X20X20	9-1/8	33-1/8	33



LabWaste® Technical
Product Dimensions

P700 Return Bend

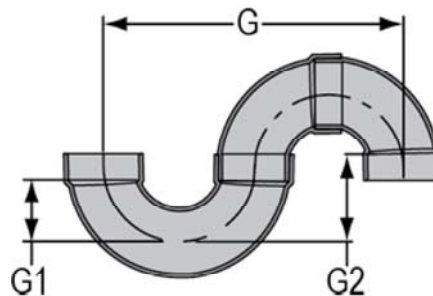
H x H



Part Number	Size	G
P700-015C	1-1/2	1-7/16
P700-020C	2	2- 3/8
P700-030C	3	3
P700-040C	4	3- 3/4
P700-060C	6	5
P700-080C	8	6
P700-100C	10	9-13/16
P700-120C	12	10-3/4

P705 S-Trap

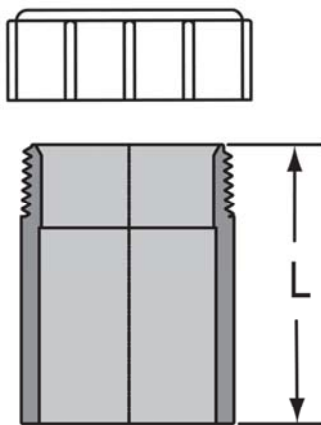
H x H



Part Number	Size	G	G1	G2
P705-015C	1-1/2	7- 1/4	1- 7/16	2- 1/4
P705-020C	2	10- 1/2	2- 3/8	3-1/4
P705-030C	3	14- 3/8	3	4- 1/2
P705-040C	4	17-3/4	3- 3/4	5- 9/16

P704P Tail Piece Adapter

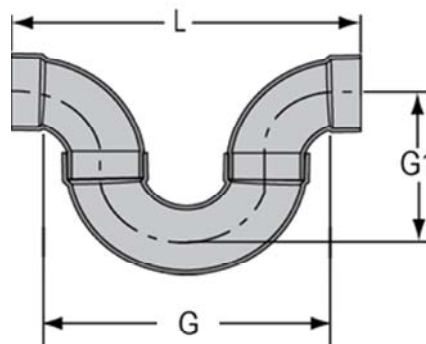
Spig x Slip w/Plastic Nut



Part Number	Size	L
P704P-015C	1-1/2	2- 1/2

P705R Running Trap

H x H

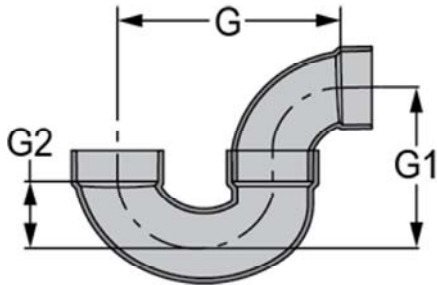


Part Number	Size	G	G1	L
P705R-015C	1-1/2	6-7/16	3- 13/16	7-7/8
P705R-020C	2	9-5/16	5- 9/16	11
P705R-030C	3	12-7/8	7-9/16	15-7/8
P705R-040C	4	16	9- 5/16	19-1/2



P706X P-Trap

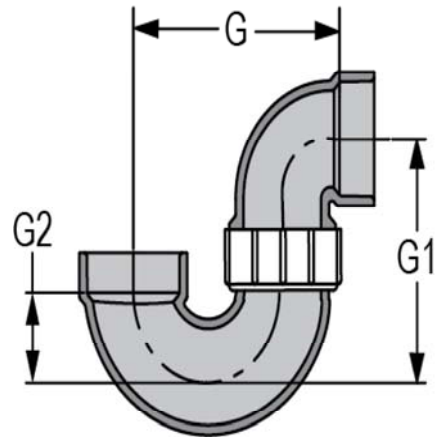
H x H



Part Number	Size	G	G1	G2
P706X-015C	1-1/2	4-3/8	3-5/8	1-7/16
P706X-020C	2	6- 1/2	4-5/8	2-3/8
P706X-030C	3	8-7/8	6-7/8	3
P706X-040C	4	11	8- 3/16	3-3/4
P706X-060C	6	18-3/8	13- 1/4	5
P706X-080C	8	22-9/16	16- 1/2	6
P706X-100C	10	35-5/16	25- 1/4	9-13/16
P706X-120C	12	39-1/4	28- 1/8	10- 7/8

P708P P-Trap w/Plastic Nut (Union Connection)

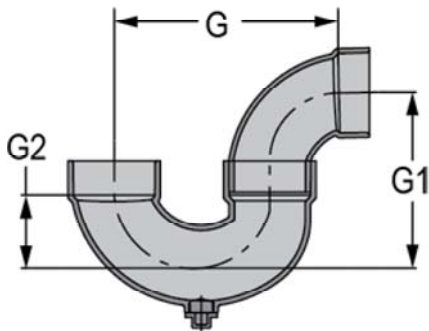
H x H



Part Number	Size	G	G1	G2
P708P-015C	1-1/2	4-1/2	3- 3/4	1-7/16
P708P-020C	2	6- 7/16	4- 3/8	2-5/16

P707X P-Trap w/Cleanout

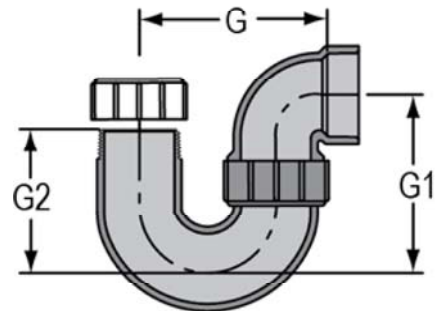
H x H



Part Number	Size	G	G1	G2
P707X-015C	1-1/2	4- 3/16	3-13/16	1- 3/8

P711P L.A Pattern P-Trap w/Plastic Nut

(Union Connection w/Slip Joint) Slip x H w/Plastic Nut



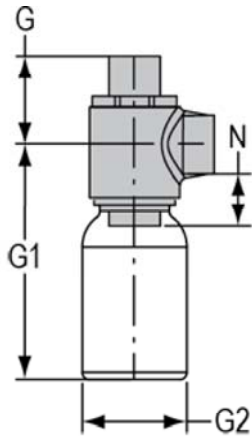
Part Number	Size	G	G1	G2
P711P-015C	1-1/2	4-1/4	3- 7/8	3- 3/4



LabWaste® Technical
Product Dimensions

P712 Jar Trap

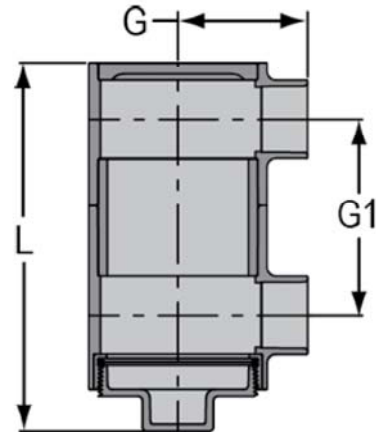
Spig x H
 32 oz. PP Jar



Part Number	Size	G	G1	G2	N
P712-015C	1-1/2	3- 3/16	8- 1/4	3-29/32	1- 7/8

P720 Drum Trap

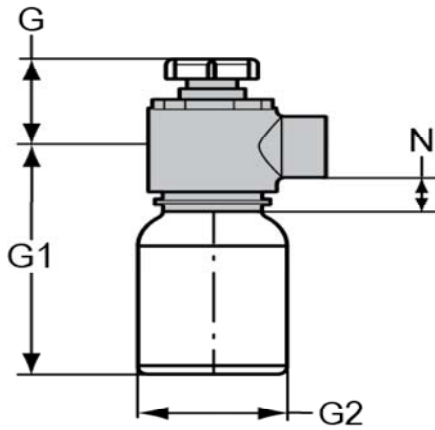
H x H



Part Number	Size	G	G1	L
P720-015C	1-1/2	3- 5/8	5-11/16	10- 5/8
P720-020C	2	3- 7/8	5	10- 3/8
P720-030C	3	4- 1/2	6- 3/4	13- 7/16
P720-040C	4	4- 3/8	8- 1/4	15-11/16

P712P Jar Trap w/Tail Piece Adapter

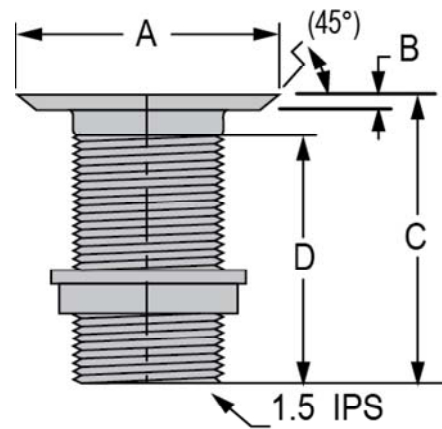
Slip x H
 32 oz. PP Jar



Part Number	Size	G	G1	G2	N
P712P-015C	1-1/2	3- 3/8	8- 1/4	3- 7/8	1- 3/4

Waste Assembly

Sink Outlet

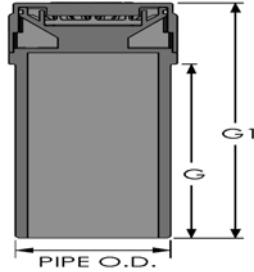


Part Number	Size	A	B	C	D
LWWA-1	1-1/2	2- 7/16	9/32	4- 9/32	3-27/32



LabWaste® Air Admittance Valve With Diaphragm Seal

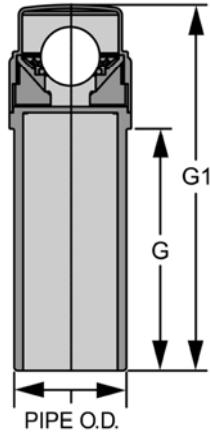
Spigot
 Maximum 6 DFU (Drainage Fixture Units)



Part Number	Size	G	G1
AADV-015C	1-1/2	4-1/8	5-9/16

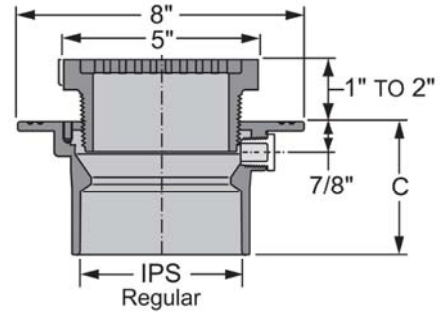
LabWaste® Air Admittance Valve With Ball Seal

Spigot
 Maximum 6 DFU (Drainage Fixture Units)



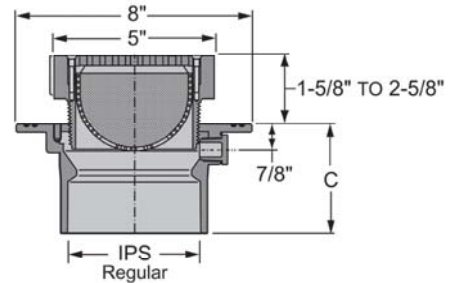
Part Number	Size	G	G1
AAV-015C	1-1/2	4-1/8	6-1/4

LW1500 Floor Drain with CPVC Adjustable Top w/5" Round Grate



Part Number	Size	C	IPS
LW1500-015C	1-1/2X5	4-3/16	1-1/2
LW1500-020C	2X5	4	2
LW1500-030C	3X5	4	3
LW1500-040C	4X5	3-3/4	4

LW1520 Floor Drain with CPVC Adjustable Top w/5" Round Grate & Strainer

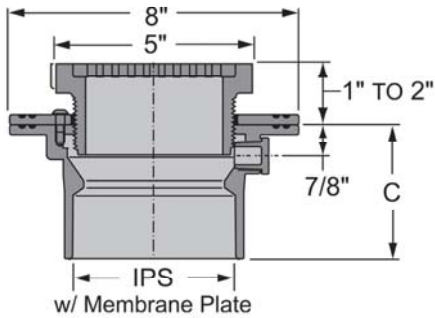


Part Number	Size	C	IPS
LW1520-015C	1-1/2X5	4-3/16	1-1/2
LW1520-020C	2X5	4	2
LW1520-030C	3X5	4	3
LW1520-040C	4X5	3-3/4	4



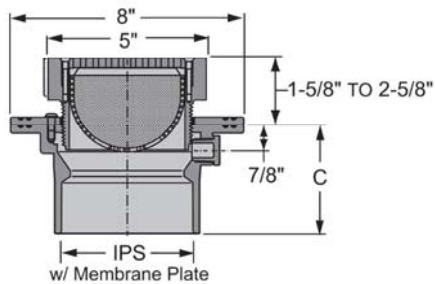
LabWaste® Technical
Product Dimensions

LW150M Floor Drain with CPVC Adjustable Top w/5" Round Grate and Membrane Collar



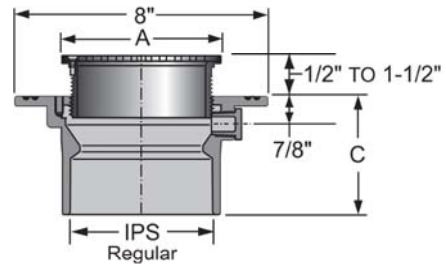
Part Number	Size	C	IPS
LW150M-015C	1-1/2X5	4- 3/16	1- 1/2
LW150M-020C	2X5	4	2
LW150M-030C	3X5	4	3
LW150M-040C	4X5	3- 3/4	4

LW152M Floor Drain with CPVC Adjustable Top w/5" Round Grate, Strainer and Membrane Collar



Part Number	Size	C	IPS
LW152M-015C	1-1/2X5	4- 3/16	1- 1/2
LW152M-020C	2X5	4	2
LW152M-030C	3X5	4	3
LW152M-040C	4X5	3- 3/4	4

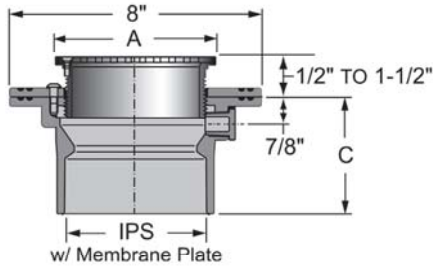
Floor Drain with Stainless Steel Adjustable Top w/Round Grate



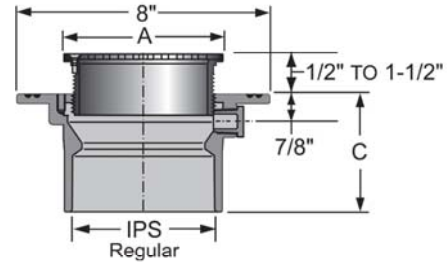
Part Number	Size	A, Nom	C	IPS
LW1500-015S	1-1/2X5	5	4- 3/16	1- 1/2
LW1600-015S	1-1/2X6	6	4- 3/16	1- 1/2
LW1700-015S	1-1/2X7	7	4- 3/16	1- 1/2
LW1800-015S	1-1/2X8	8	4- 3/16	1- 1/2
LW1500-020S	2X5	5	4	2
LW1600-020S	2X6	6	4	2
LW1700-020S	2X7	7	4	2
LW1800-020S	2X8	8	4	2
LW1500-030S	3X5	5	4	3
LW1600-030S	3X6	6	4	3
LW1700-030S	3X7	7	4	3
LW1800-030S	3X8	8	4	3
LW1500-040S	4X5	5	3- 3/4	4
LW1600-040S	4X6	6	3- 3/4	4
LW1700-040S	4X7	7	3- 3/4	4
LW1800-040S	4X8	8	3- 3/4	4



Floor Drain with Stainless Steel Adjustable Top w/Round Grate & Membrane Collar



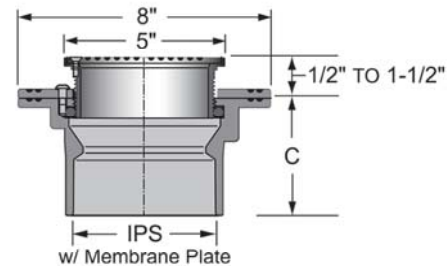
LW1510 Floor Cleanout w/Stainless Steel Adjustable Round Top and Solid Access Cover



Part Number	Size	A, Nom	C	IPS
LW150M-015S	1-1/2X5	5	4- 3/16	1- 1/2
LW160M-015S	1-1/2X6	6	4-3/16	1-1/2
LW170M-015S	1-1/2X7	7	4-3/16	1- 1/2
LW180M-015S	1-1/2X8	8	4-3/16	1- 1/2
LW150M-020S	2X5	5	4	2
LW160M-020S	2X6	6	4	2
LW170M-020S	2X7	7	4	2
LW180M-020S	2X8	8	4	2
LW150M-030S	3X5	5	4	3
LW160M-030S	3X6	6	4	3
LW170M-030S	3X7	7	4	3
LW180M-030S	3X8	8	4	3
LW150M-040S	4X5	5	3- 3/4	4
LW160M-040S	4X6	6	3-3/4	4
LW170M-040S	4X7	7	3-3/4	4
LW180M-040S	4X8	8	3-3/4	4

Part Number	Size	C	IPS
LW1510-015S	1-1/2X5	4- 3/16	1- 1/2
LW1510-020S	2X5	4	2
LW1510-030S	3X5	4	3
LW1510-040S	4X5	3- 3/4	4

LW151M Floor Cleanout w/Stainless Steel Adjustable Round Top, Solid Access Cover and Membrane Collar



Part Number	Size	C	IPS
LW151M-015S	1-1/2X5	4- 3/16	1- 1/2
LW151M-020S	2X5	4	2
LW151M-030S	3X5	4	3
LW151M-040S	4X5	3- 3/4	4



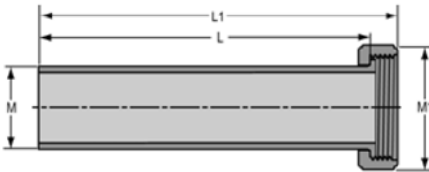
LabWaste® Technical
Product Dimensions

LWTP CPVC Tail Piece



Part Number	Size	L	M	M1
LWTP-015060	1-1/2X6	6	1-1/2	1-3/4
LWTP-015120	1-1/2X12	12	1-1/2	1-3/4
LWTP-015140	1-1/2X14	14	1-1/2	1-3/4

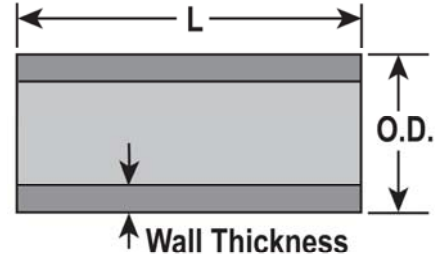
LWTPN CPVC Tail Piece with Nut & Gasket



Part Number	Size	L	L1	M	M1
LWTPN-015060	1-1/2X6	6	6-1/2	1-1/2	2-1/4
LWTPN-015120	1-1/2X12	12	12-1/2	1-1/2	2-1/4
LWTPN-015140	1-1/2X14	14	14-1/2	1-1/2	2-1/4

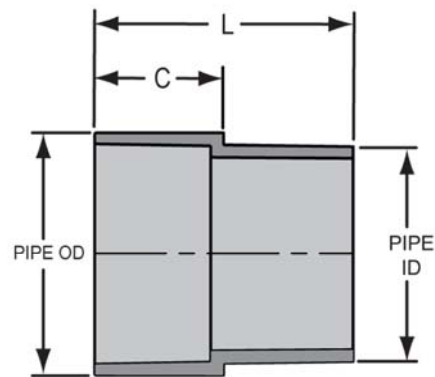
Pipe - LabWaste® CPVC

10' Lengths



Part Number	Size	L	AVG.O.D.	Minimum Wall
LW-015	1-1/2	10	1.900	.145
LW-020	2	10	2.375	.154
LW-030	3	10	3.500	.216
LW-040	4	10	4.500	.237
LW-060	6	10	6.625	.280
LW-080	8	10	8.625	.322
LW-100	10	10	10.750	.365
LW-120	12	10	12.750	.406
LW-140	14	10	14	.437
LW-160	16	10	16	.500
LW-180	18	10	18	.562
LW-200	20	10	20	.593
LW-240	24	10	24	.687

Pipe Extenders, LabWaste®



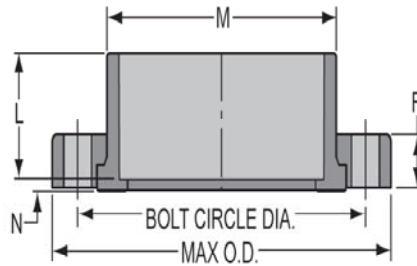
Part Number	Size	C	L
S0301-15C	1-1/2	1-1/4	2-1/2
S0301-20C	2	1-1/4	2-7/8
S0301-30C	3	2	4
S0301-40C	4	2-1/8	4-1/4

LabWaste® Technical
Product Dimensions Flanges



Flange, Van Stone Style CPVC

Socket



Part Number	Size	L	M	N	O.D.	R	Bolt Circle Dia.	Bolt Size	Min. Bolt Length	No of Bolts
854-015C	1-1/2	1-1/2	2-7/16	1/8	5	13/16	3-7/8	1/2	2-1/2	4
854-020C	2	1-21/32	2-31/32	1/8	6	7/8	4-3/4	5/8	3	4
854-030C	3	2-1/8	4-1/4	1/4	7-1/2	1-1/8	6	5/8	3-1/4	4
854-040C	4	2-1/2	5-1/4	9/32	9-3/32	1-3/16	7-1/2	5/8	3-1/2	8
854-060C	6	3-7/16	7-9/16	7/16	11-5/16	1-3/8	9-1/2	3/4	4	8
854-080C	8	4-13/32	9-5/16	5/16	13-9/16	1-1/2	11-3/4	3/4	4-1/2	8
854-100C	10	5-23/32	11-3/4	21/32	16-1/16	1-25/32	14-1/4	7/8	5	12
854-120C	12	6-19/32	13-3/4	5/8	19	1-13/16	17	7/8	5	12
854-140C	14	7-19/32	15-9/16	9/16	21	2-1/16	18-3/4	1	5-1/2	12
854-160C	16	8-5/8	17-13/16	17/32	23-1/2	2-15/32	21-1/4	1	6-1/2	16

**Chemical Resistance Information**

CPVC is inert to most acids, bases, salts, plus a wide variety of organic compounds. Application conditions including chemical concentration and temperature must be taken into consideration. Due to the many variables involved, final suitability often must be based on in-service testing.

The following Chemical Resistance Table recommendations apply only to non-pressure, laboratory drainage applications, which are those characterized as the routine disposal of a wide variety of hot and cold chemicals in relatively small quantities accompanied by water for the purpose of dilution and flushing. For use of **LabWaste®** CPVC products in continuous or dedicated chemical waste drainage systems, chemical resistance data for pressure applications must be followed. Contact Spears® Technical Services for additional information.

In many cases compatibility or solubility data is not available. While specific data may not be available, please note that virtually all aqueous solutions of chemicals used in a laboratory can be safely used with proper dilution and flushing. This includes chemicals that readily disperse in water (such as many fat-soluble vitamins and oils) that can be flushed during disposal.

This information is compiled from commercially available industry sources. It is offered in good faith and believed to be accurate at the time of its preparation, but is offered without any warranty, expressed or implied, by information sources or Spears® Manufacturing Company. These recommendations are guidelines for use and the final decision regarding material suitability must rest with the end-user.

Noted Caution Areas for CPVC

- Disposed chemicals must be properly diluted. Chemicals that individually have no effect may have an effect when used in combination. Due to the wide variety of potential chemical concentrations and combinations, testing under actual service conditions is highly recommended.
- CPVC is not recommended for use with chlorinated solvents. Most solvents are prohibited by law from disposal in drainage systems.
- Chemicals that do not normally effect CPVC may cause cracking when excessive stress is applied. Tests under applied adverse stress conditions indicate that environmental stress cracking may occur when exposed to surfactants, certain oils, or grease. Such stresses include external stresses from expansion/contraction and installation. Special consideration should be taken during design and installation to avoid unusual stresses in the piping system.
- Chemical resistance of plastics tends to decrease with an increase in chemical concentration and/or temperature. As a result, various chemicals may be safely handled in limited concentrations or within certain temperature limits. Most all aqueous solutions of water-soluble chemical not specified in the Chemical Resistance Tables can be used in CPVC drainage systems.
- While **LabWaste®** CPVC products are suitable for many continuous commercial and industrial chemical waste applications, the following Chemical Resistance Tables should **NOT** be used for these applications. Consult chemical resistance data for CPVC pressure piping to determine suitability for continuous chemical waste drainage applications.

WARNING: Hazardous material (including certain solvents and high concentrations of certain acids), are typically not discharged into lab waste piping. Laboratories routinely have specialized collection equipment and contracted disposal services for waste considered "hazardous". Proper laboratory protocols on handling materials identified by OSHA and EPA as "hazardous" must be established and followed. Such requirements typically specify special storage and disposal apart from drainage disposal via dilution or neutralization. Even improper handling and disposal of HAZARDOUS materials by accident are subject to heavy fines by Federal, State and Local Authorities.

LabWaste® Technical
CPVC Drainage System Chemical Resistance



Chemical Resistance Tables

Resistance Rating Codes

- R = Recommended
- C = Use with Caution.
- N = Not Recommended.
- = No data available

IMPORTANT NOTE: Chemical Resistance data is provided for material compatibility information purposes only and in no way addresses the legal discharge of chemicals into any waste system, some of which may be prohibited by law. Nor does the data address the compatibility of chemical mixtures, issues of hazardous decomposition, or other potentially dangerous circumstances that be involved. Data is applicable to laboratory drainage systems only and may not be suitable for continuous service or pressure applications.

CHEMICAL	RATING	CHEMICAL	RATING	CHEMICAL	RATING
A					
Acacia, Gum Arabic	R	Arsenic Acid	R	Carbon Dioxide Wet	R
Acetaldehyde	R	Aryl Sulfonic Acid	R	Carbon Disulfide	C
Acetamide	R	Asorbic Acid	R	Carbon Monoxide	R
Acetic Acid Vapor 25%	R	L-Asparagine	R	Carbon Tetrachloride	N
Acetic Acid 60%	R	Asphalt	N	Carbolic Acid	R
Acetic Acid 85%	R	B			
Acetic Acid Glacial	R	Barium Acetate	R	Castor Oil	C
Acetic Anhydride	R	Barium Carbonate	R	Caustic Potash	R
Acetone	R	Barium Chloride	R	Caustic Soda	R
Acetophenone	C	Barium Hydroxide	R	Cellosolve	C
Acetyl Chloride	R	Barium Nitrate	R	Cellosolve Acetate	R
Acetylene	N	Barium Sulfate	R	Chloral Hydrate	R
Acetylnitrile	R	Barium Sulfide	R	Chloramine	R
Acetylsalicylic acid, aspirin	R	Beer	R	Chloric	R
Acrylic Acid	R	Beer Sugar Liquors	R	Chloric Acid 20%	R
Acrylonitrile	R	Benzaldehyde	R	Chlorine, Aqueous	R
Adenine, 6-aminopurine	R	Benzene	C	Chlorinated Water 10 PPM	R
Adenosine Triphosphate	R	Benzene Sulfonic Acid	R	Chlorinated Water Sat'd	R
Adipic Acid	R	Benzoic Acid	R	Chloroacetic Acid	---
Agarose	R	Benzyl Alcohol	R	Chloroacetyl Chloride	---
Alizarin stain Mordant Red 11	R	Bismuth Carbonate	R	Chlorobenzene	N
Alizarin Red S Mordant Red 3	R	Biuret	R	Chlorobenzyl Chloride	N
Alizarin Yellow R Mordant Orange 1	R	Black Liquor	R	Chloroform	N
Allyl Alcohol	R	Bleach 5%	R	Chlorophenol Red	R
Allyl Chloride	N	Bleach 12%	R	Chloropicrin	---
Aluminum Acetate	R	Blood	R	Chlorosulfonic Acid	R
Aluminum Ammonium	R	Borax	R	Chromic Acid 10%	R
Aluminum Chloride	R	Boric Acid	R	Chromic Acid 30%	R
Aluminum Fluoride	R	Brake Fluid	---	Chromic Acid 40%	R
Aluminum Hydroxide	R	Brine	R	Chromic Acid 50%	C
Aluminum Nitrate	R	Brilliant Blue G-250	R	Chromium	R
Aluminum Oxychloride	R	Brilliant Blue R-250	R	Chromium Tetroxide	R
Aluminum Potassium	R	Brilliant Cresyl Blue	R	Citric Acid	R
Aluminum Potassium Sulfate, Alum	R	Brilliant Green	R	Clayton Yellow	R
Aluminum Sulfate	R	Bromcresal Green	R	Coconut Oil	C
Ammonia Anhydrous	R	Bromcresal purple	R	Coffee	R
Ammonia Gas	R	Bromic Acid	R	Congo Red solution	R
Ammonia Liquid	R	Bromine Liquid	R	Copper Acetate	R
Ammonia Acetate	R	Bromine Vapor	R	Copper Carbonate	R
Ammonium Bicarbonate	R	Bromine Water	R	Copper Chloride	R
Ammonium Bifluoride	R	Bromotoluene	---	Copper Cyanide	R
Ammonium Bisulfide	R	Bromphenol Blue	R	Copper Fluoride	R
Ammonium Bromide	R	Bromthymol Blue	R	Copper Nitrate	R
Ammonium Carbonate	R	Butadiene	R	Copper Sulfate	R
Ammonium Chloride	R	Butane	R	Corn Oil	C
Ammonium Citrate	R	Butyl Acetate	C	Corn Syrup	R
Ammonium Dichromate	R	Butyl Alcohol	C	Cottonseed Oil	C
Ammonium Dihydrogen Phosphate	R	Butyl Cellosolve	R	m-Cresal Purple	R
Ammonium Ferric Sulfate	R	n-Butyl Chloride	---	Cresal Red	R
Ammonium Ferrous Sulfate	R	Butylene (C)	---	Creosote	N
Ammonium Fluoride 10%	R	Butyl Phenol	C	Cresol	N
Ammonium Fluoride 25%	R	Butyl Phthalate	---	Cresylic Acid	R
Ammonium Hydroxide 10% - 28%	R	Butyl Stearate	---	Croton Aldehyde	R
Ammonium Hydroxide 100%	R	Butynediol	---	Crude Oil	R
Ammonium Iodide	R	Butyric Acid	R	Cumene	C
Ammonium Nitrate	R	C			
Ammonium Persulfate	R	Cadmium Cyanide	R	Cupric Chloride	R
Ammonium Phosphate Monbasic/Dibasic	R	Calcium Acetate	R	Cupric Fluoride	R
Ammonium Sulfate	R	Calcium Bisulfide	R	Cupric Nitrate	R
Ammonium Sulfide	R	Calcium Bisulfate	R	Cupric Sulfate	R
Ammonium Sulfite	R	Calcium Carbonate	R	Cuprous Chloride	R
Ammonium Thiocyanate	R	Calcium Chlorate	R	Cyclohexane	R
Amyl Acetate	C	Calcium Chloride	R	Cyclohexanol	R
Amyl Alcohol 1%	R	Calcium Chloride	R	Cyclohexanone	R
Amyl Alcohol > 1%	C	Calcium Fluoride	R	D	
n-Amyl Chloride	C	Calcium Hydroxide	R	Decahydronaphthalene	R
Aniline	C	Calcium Hypochlorite	R	Detergents	R
Aniline Chlorohydrate	C	Calcium Nitrate	R	Dextrin	R
Aniline Hydrochloride	C	Calcium Oxide	R	Dextrose	R
Anthraquinone	R	Calcium Sulfate	R	Diacetone Alcohol	R
Anthraquinone Sulfonic Acid	R	Camphor	---	Diastase of malt	R
Antimony Trichloride	R	Cane Sugar Liquors	R	Dibutoxyethyl Phthalate	N
Aqua Regia	R	Caprylic Acid	---	Dibutyl Ether	R
Argon	---	Carbitol	---	Dibutyl Phthalate	N
		Carbolic Acid	R	Dibutyl Sebacate	N
		Carbon Dioxide Dry	R	Dichlorobenzene	R
				Dichloroethylene	N
				2,6 — Dichloroindophenal	R



LabWaste® Technical CPVC Drainage System Chemical Resistance

CHEMICAL	RATING	CHEMICAL	RATING	CHEMICAL	RATING
Diesel Fuels	R	H		M	
Diethylamine	R	Heptane (Type 1)	R	Magnesium Acetate	R
Diethyl Cellosolve	R	n-Hexane	R	Magnesium Bromide	R
Diethyl Ether	R	Hexamethylenediamine	R	Magnesium Carbonate	R
Diglycolic Acid	R	Hexanofltertiary	R	Magnesium Chloride	R
Dimethylamine	R	Hydraulic Oil	---	Magnesium Citrate	R
Dimethyl Formamide	R	Hydrazine	R	Magnesium Fluoride	---
Dimethylhydrazine	R	Hydrobromic Acid 20%	R	Magnesium Hydroxide	R
Dimethyl Phthalate	N	Hydrobromic Acid 50%	R	Magnesium Nitrate	R
Dimethyl Sulfoxide	R	Hydrochloric Acid 10%	R	Magnesium Oxide	---
Diocetyl Phthalate	N	Hydrochloric Acid 30%	R	Magnesium Sulfate	R
Dodecyl Alcohol	R	Hydrocyanic Acid	R	Malachite Green	R
Dodecyl Sulfate	R	Hydrofluoric Acid Dilute	R	Maleic Acid	R
Dioxane	R	Hydrofluoric Acid 30%	R	Malic Acid	R
Diphenyl Oxide	---	Hydrofluoric Acid 50%	R	Maltose	R
Disodium Phosphate	R	Hydrofluoric Acid 100%	R	Manganese Chloride	R
Drierite	R	Hydrofluosilic Acid 50%	R	Manganese Nitrate	R
E		Hydrogen	R	Manganese Sulfate	R
Eosin Y	R	Hydrogen Cyanide	R	Menthyl	R
Eriochrome Black T	R	Hydrogen Fluoride	C	Mercuric Chloride	R
Ether	R	Hydrogen Peroxide 50%	R	Mercuric Cyanide	R
Ethyl Acetate	R	Hydrogen Peroxide 90%	R	Mercuric Sulfate	R
Ethyl Acetoacetate	R	Hydrogen Phosphide	R	Mercurous Nitrate	R
Ethyl Acrylate	R	Hydrogen Sulfide Dry	R	Mercury	R
Ethyl Alcohol	R	Hydrogen Sulfide Wet	R	Methane	R
Ethyl Benzene	C	Hydrogen Sulfide, aqueous	R	Methanol	R
Ethyl Chloride	N	Hydroquinone, aqueous	R	DL-methionine	R
Ethyl Chloroacetate	N	Hydroxylamine Hydrochloride	R	Methoxyethyl Oleate	---
Ethylene Bromide	N	Hydroxylamine Sulfate	R	Methyl Acetate	R
Ethylene Chloride	N	Hypochlorous Acid	R	Methyl Acetone	R
Ethylene Chlorohydrin	N	I		Methyl Acrylate	---
Ethylenediamine	R	Indigo Carmine	R	Methyl Amine	R
Ethylene Dichloride	N	Inks	R	Methyl Bromide	N
Ethylene Oxide	R	Iodine	R	Methyl Cellosolve	R
Ethyl Ether	R	Iodine solution, Lugol's	R	Methyl Cellulose	R
Ethyl Formate	R	Iron Phosphate	---	Methyl Chloride	N
Ethylene Glycol	C	Isobutane	C	Methyl Chloroform	N
2-Ethylhexanol	R	Isobutyl Alcohol	R	Methyl Ethyl Ketone	R
Ethyl Mercaptan	R	Isooctane	R	Methyl Formate	R
Ethyl Oxalate	R	Isopropyl Acetate	R	Methyl Green	R
F		Isopropyl Alcohol	R	Methyl Isobutyl Carbinol	R
Fast Green FCF	R	Isopropyl Chloride	N	Methyl Isobutyl Ketone	R
Fatty Acids	R	Isopropyl Ether	R	Methyl Isopropyl Ketone	R
Fehlings solution A	R	Isophorone	R	Methyl Methacrylate	R
Fehlings solution B	R	J		Methyl Red	R
Ferric Ammonium Sulfate	R	Janus Green	R	Methyl Sulfate	R
Ferric Chloride	R	JP-3 Fuel	R	Methyl Violet-2B	R
Ferric Hydroxide	R	JP-4 Fuel	R	Methyl Violet-6B	R
Ferric Nitrate	R	JP-5 Fuel	R	Methylene Blue	R
Ferric Sulfate	R	JP-6 Fuel	R	Methylene Bromide	N
Ferrous Chloride	R	K		Methylene Chloride	N
Ferrous Hydroxide	R	Kerosene	R	Methylene Chlorobromide	N
Ferrous Nitrate	R	Ketchup	R	Methylene Iodine	N
Ferrous Sulfate	R	Kraft Liquors	R	Methylsulfuric Acid	R
Fish Oil	R	L		Milk	R
Fluoboric Acid	R	Lactic Acid 25%	R	Mineral Oil	R
Fluorine Gas (Dry)	R	Lactic Acid 80%	R	Molasses	R
Fluorine Gas Wet	R	Lactose	R	Monochloroacetic Acid	R
Fluosilicic Acid 30%	R	Lard Oil	C	Monochlorobenzene	N
Fluosilicic Acid 50%	R	Latex	---	Monoethanolamine	R
Formaldehyde Dilute	R	Lauric Acid	R	Monosodium Glutamate	R
Formaldehyde 35%	R	Lauryl Chloride	R	Motor Oil	R
Formaldehyde 37%	R	Lead Acetate	R	Morpholine	R
Formaldehyde 50%	C	Lead Chloride	R	N	
Formic Acid	R	Lead Nitrate	R	Naphtha	R
Freon	R	Lead Sulfate	R	Naphthalene	C
Freon 12	R	Lemon Oil	R	Natural Gas	R
Freon 21	---	Ligroin	R	Neutral Red	R
Freon 22	R	Limonene	R	Nickel Acetate	R
Freon13	C	Lime Slurry	R	Nickel Ammonium Sulfate ---	---
Freon14	---	Lime Sulfur	R	Nickel Chloride	R
Fructose	R	Linoleic Acid	C	Nickel Nitrate	R
Furfural	R	Linoleic Oil	---	Nickel Sulfate	R
G		Linseed Oil	C	Nicotine	R
Gallic Acid	R	Liqueurs	R	Nicotinic Acid	R
Gasoline	R	Lithium Bromide	R	Nitric Acid 10%	R
Gasohol	R	Lithium Carbonate	R	Nitric Acid 30%	R
Gelatin	R	Lithium Chloride	R	Nitric Acid 40%	R
Glauber's Salt	---	Lithium Hydroxide 50%	R	Nitric Acid 50%	R
Glucose	R	Lithium Nitrate	R	Nitric Acid 70%	R
Glue, PVA	R	Lithium Sulfate	R	Nitric Acid 100%	R
Glutathione	R	Lubricating Oil #1	R	Nitrobenzene	N
Glycerine	R	Lubricating Oil #2	R	Nitroethane	C
Glycine	R	Lubricating Oil #3	R	Nitrogen Gas	---
Glycogen	R	Ludox	---	Nitroglycerine	C
Glycol	C	Luminol 3-amino Phthalhydrazide	R	Nitroglycol	---
Glycol Amine	---	DL-lysine Hydrochloride	R	Nitromethane	C
Glycolic Acid	R	Lysozyme	R	Nitrous Acid	R
Glyoxal	R	O		Nitrous Oxide	R
Grape Sugar	R	n-Octane	C		
Grease	---	Octanol	R		
Green Liquor	R	OleiAcid	R		

LabWaste® Technical
CPVC Drainage System Chemical Resistance



CHEMICAL	RATING	CHEMICAL	RATING	CHEMICAL	RATING
Oleum	R	Potassium Sulfite	R	Strontium Chloride	R
Olive Oil	C	Potassium Thiocyanate	R	Styrene	N
Orange G - acid orange 10	R	Propane	R	Succinic Acid	R
Orange IV - acid orange 5	R	Propargyl Alcohol	R	Sugar	R
Orcinol	R	Propionic Acid	R	Sulfamic Acid	R
Osmium Tetroxide	R	Propyl Acetate	---	Sulfate Liquors	R
Oxalic Acid	R	Propyl Alcohol	R	Sulfite Liquors	R
Oxygen Gas	R	N-Propyl Bromide	---	Sulfur	R
Ozone	R	Propylene Dichloride	N	Sulfur Chloride	R
Ozonized Water	R	Propylene Glycol	C	Sulfur Dioxide Gas Dry	R
	P	Propylene Glycol	R	Sulfur Dioxide Gas Wet	R
Palm Oil	R	Propylene Oxide	R	Sulfur Trioxide Gas Dry	---
Palmitic Acid 10%	R	Pyridine	R	Sulfur Trioxide Gas	N
Palmitic Acid 70%	R	Pyrogallic Acid	R	Sulfuric Acid Up to 30%	R
Pancreatin	R	Pyrolole	R	Sulfuric Acid 50%	R
Papain	R		Q	Sulfuric Acid 60%	R
Paraffin	R	Quinine Sulfate	R	Sulfuric Acid 70%	R
Paraffin	R	Quinine Chloride Dihydrate	R	Sulfuric Acid 80%	R
Peanut Oil	C	Quinone	---	Sulfuric Acid 90%	R
Pectin	R		R	Sulfuric Acid 93%	R
n-Pentane	C	Rayon Coagulating Bath	R	Sulfuric Acid 94%	R
Pepsin	R	Rennin	R	Sulfuric Acid 95%	R
Peracetic Acid	R	Resazurin	R	Sulfuric Acid 96%	R
Perchloric Acid 15%	R	Ringers Solution	R	Sulfuric Acid 98%	R
Perchloric Acid 70%	R	Rose Bengal Acid Red 94	R	Sulfuric Acid 100%	R
Perchloroethylene	C		S	Sulfurous Acid	R
Periodic Acid	R	Safranin O	R		T
Perphosphate	R	Saicylaldehyde	N	Tall Oil	R
Phenol	R	Saicylic Acid	R	Tannic Acid	R
Phenolphthalein	R	Selenic Acid, Aq.	R	Tanning Liquors	R
Phenyl Salicylate	R	Silicic Acid	R	Tar	C
Phenylhydrazine	C	Silicone Oil	R	Tartaric Acid	R
Phosphate Esters	---	Silver Acetate	R	Terpineol	---
Phosphoric Acid 10%	R	Silver Chloride	R	Tetrachloroethane	N
Phosphoric Acid 50%	R	Silver Cyanide	R	Tetrachloroethylene	N
Phosphoric Acid 85%	R	Silver Nitrate	R	Tetracycline hydrochloride	R
Phosphoric Anhydride	R	Silver Sulfate	R	Tetraethyl Lead	R
Phosphorous (Red)	C	Soaps	R	Tetrahydrofuran	R
Phosphorous (Yellow)	C	Sodium Acetate	R	Tetralin	R
Phosphorous Pentoxide	R	Sodium Alum	R	Thiamine Hydrochloride	R
Phosphorous Trichloride	R	Sodium Aluminate	R	Thionin	R
Photographic Solutions	R	Sodium Arsenate	R	Thionyl Chloride	R
Phthalic Acid	R	Sodium Benzoate	R	Thymol	R
Picric Acid	R	Sodium Bicarbonate	R	Titanium Dioxide	R
Pine Oil	C	Sodium Bichromate	R	Titanium Tetrachloride	R
Plating Solutions Brass	R	Sodium Bisulfate	R	Toluene	C
Plating Solutions Cadmium	R	Sodium Bisulfite	R	Tomato Juice	R
Plating Solutions Chrome	R	Sodium Borate	R	Transformer Oil	R
Plating Solutions Copper	R	Sodium Bromide	R	Transformer Oil DTE/30	R
Plating Solutions Gold	R	Sodium Carbonate	R	Tributyl Citrate	---
Plating Solutions Lead	R	Sodium Chlorate	R	Tributyl Phosphate	R
Plating Solutions Nickel	R	Sodium Chloride	R	Trichloroacetic Acid	R
Plating Solutions Rhodium	R	Sodium Chlorite	R	Trichloroethylene	N
Plating Solutions Silver	R	Sodium Chromate	R	Triethanolamine	R
Plating Solutions Tin	R	Sodium Citrate	R	Triethylamine	R
Plating Solutions Zinc	R	Sodium Cyanide	R	Trimethylpropane	R
Polyvinyl Acetate	---	Sodium Dichromate	R	Trisodium Phosphate	R
Polyvinyl Alcohol	R	Sodium Diphenylamine Sulfonate	R	Trypsin	R
Potash	R	Sodium Dithionite	R	Tung Oil	C
Potassium Acetate	R	Sodium Ferricyanide	R	Turpentine	C
Potassium Alum	R	Sodium Ferrocyanide	R		U
Potassium Aluminum	R	Sodium Fluoride	R	Urea	R
Potassium Bicarbonate	R	Sodium Hexametaphosphate	R	Urease	R
Potassium Bichromate	R	Sodium Hydroxide 15%	R	Urine	R
Potassium Bisulfate	R	Sodium Hydroxide 30%	R		V
Potassium Bitartrate	R	Sodium Hydroxide 50%	R	Varnish	---
Potassium Borate	R	Sodium Hydroxide 70%	R	Vaseline	C
Potassium Bromate	R	Sodium Hypochlorite	R	Vegetable Oil	C
Potassium Bromide	R	Sodium Iodate	R	Vinegar	R
Potassium Carbonate	R	Sodium Iodide	R	Vinyl Acetate	R
Potassium Chlorate	R	Sodium Metabisulfite	R		W
Potassium Chloride	R	Sodium Metaphosphate	R	Water, Acid Mine	R
Potassium Chromate	R	Sodium Nitrate	R	Water, Deionized	R
Potassium Citrate	R	Sodium Nitrite	R	Water, Distilled	R
Potassium Cyanide	R	Sodium Palmitrate	R	Water, Potable	R
Potassium Dichromate	R	Sodium Perborate	R	Water, Salt	R
Potassium Ethyl Xanthate	---	Sodium Perchlorate	R	Water, Sea	R
Potassium Ferricyanide	R	Sodium Periodate	R	Water, Soft	R
Potassium Ferrocyanide	R	Sodium Peroxide	R	Water, Waste	R
Potassium Fluoride	R	Sodium Phosphate Acid	R	Whiskey	R
Potassium Hydrogen Phosphate	R	Sodium Phosphate Alkaline	R	White Liquor	R
Potassium Hydrogen Phthalate	R	Sodium Phosphate Neutral	R	Wine	R
Potassium Hydroxide	R	Sodium Propionate	R		X
Potassium Hypochlorite	R	Sodium Silicate	R	Xylene	C
Potassium Iodate	R	Sodium Sulfate	R		Z
Potassium Iodide	R	Sodium Sulfite	R	Zinc Acetate	R
Potassium Nitrate	R	Sodium Sulfite	R	Zinc Carbonate	R
Potassium Nitrite	R	Sodium Thioulsulphate	R	Zinc Chloride	R
Potassium Perborate	R	Sour Crude Oil	R	Zinc Chloride	R
Potassium Perchlorate	R	Soybean Oil	C	Zinc Nitrate	R
Potassium Permanganate 10%	R	Stannic Chloride	R	Zinc Stearate	R
Potassium Permanganate 25%	R	Stannous Chloride	R	Zinc Sulfate	R
Potassium Persulfate	R	Stannous Sulfate	R		
Potassium Phosphate	R	Starch	R		
Potassium Sodium Tartrate	R	Stearic Acid	R		
Potassium Sulfate	R	Streptomycin Sulfate	R		
Potassium Sulfide	R	Strontium Bromide	R		

**Product Limited Lifetime Warranty**

Except as otherwise mandated by law or herein provided, Spears® Manufacturing Company ("Company") warrants Standard Catalog Products ("Products") which have been directly manufactured by them to be free from defects in material and workmanship for as long as the end user of the Products ("End User") retains ownership and possession of the Products in accordance with this Warranty ("Warranty Period"). Products installed with pipe, fittings, valves, solvent cements, thread sealants or other related products, not manufactured by this Company, are subject to review and may be exempt at the sole discretion of the Company. Each other person or entity acquiring or employing the Products, including buyers, contractors and installers ("Buyer") and End Users ("Buyer/End User") agrees that this Warranty shall be effective only during the Warranty Period so long as the Products are used solely for the normal purposes for which they are intended and in conformance with industry established standards, engineering, installation, operating, and maintenance specifications, recommendations and instructions including explicit instructions by the Company; the Products are properly installed, operated and used, and have not been modified; and all the other terms of this Warranty are complied with. Any violation thereof shall void this Warranty and relieve Company from all obligations arising from this Warranty and the Products.

Upon receipt or discovery of any Products that appear questionable or defective each Buyer/End User shall promptly inspect and return any such Product to the Company at 15853 Olden Street, Sylmar, California 91342, accompanied by a letter stating the nature of any problems. If the Products are determined by Company to be defective in materials or workmanship directly provided by Company, Company, at its sole option, may either repair or replace the defective Products, or reimburse applicable Buyer/End User for the cost of such Products. The applicable Buyer/End User shall bear all applicable shipping costs. THIS SHALL BE BUYERS/END USERS' SOLE REMEDY. EACH BUYER/END USER AGREES THAT COMPANY WILL NOT BE RESPONSIBLE FOR ANY OTHER OBLIGATIONS RELATING TO THE PRODUCTS, INCLUDING ANY OTHER MATERIALS OR LABOR COSTS, LOSS OF USE OR ANY OTHER ITEM OR FOR ANY DELAYS IN COMPLYING WITH THIS WARRANTY BEYOND COMPANY'S REASONABLE CONTROL.

COMPANY SHALL NOT BE LIABLE FOR, DOES NOT ASSUME, AND EXPRESSLY DISCLAIMS, ANY LIABILITY, RESPONSIBILITY AND DAMAGES: DUE TO ANY BUYER/END USER'S FAILURE TO COMPLY WITH THIS WARRANTY, INCLUDING IMPROPER INSTALLATION, USE OR OPERATION; USE WITH PRODUCTS FROM OTHER MANUFACTURERS THAT DO NOT MEET ASTM OR OTHER APPLICABLE PRODUCT STANDARDS; IMPROPER CONTROL OF SYSTEM HYDRAULICS, IMPROPER WINTERIZATION PROCEDURES, IMPROPER VOLTAGE SUPPLY, CONTACT WITH INCOMPATIBLE MATERIALS, CHEMICALS OR CABLES, EXCAVATION/DIGGING, EXCESSIVE WEIGHT, AND VANDALISM; DUE TO REASONABLE WEAR AND TEAR AND DUE TO ANY ACTS OF NATURE, INCLUDING LIGHTNING, EARTHQUAKES, GROUND MOVEMENT, FROST HEAVE, OR FLOODS.

COMPANY EXTENDS ONLY THIS WARRANTY AND EXPLICITLY DISCLAIMS ALL OTHER WARRANTIES, WHETHER IMPLIED OR OTHERWISE EXPRESSED, WHETHER ORAL, STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTIES OR AFFIRMATIONS FOR SUITABILITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO AFFIRMATION BY COMPANY OR ANY OF ITS REPRESENTATIVES, BY WORDS, CONDUCT OR OTHERWISE, SHALL CONSTITUTE A WARRANTY. THIS WARRANTY MAY NOT BE TRANSFERRED, EXTENDED, ALTERED OR OTHERWISE MODIFIED IN ANY MANNER, EXCEPT BY WRITTEN AGREEMENT SIGNED BY COMPANY.

BY ITS ACCEPTANCE OF THE PRODUCTS, EACH BUYER/END USER EXPRESSLY WAIVES ALL OTHER LIABILITY OR OBLIGATION OF ANY KIND OR CHARACTER OF COMPANY, INCLUDING LIABILITY PREDICATED UPON CONTRACT, TORT, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE GROUNDS, AND ALL, IF ANY, DAMAGES AND LOSSES AS A RESULT THEREOF, INCLUDING ALL, IF ANY, COMPENSATORY, GENERAL, SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR PUNITIVE DAMAGES. WITH RESPECT TO SUCH WAIVERS, EACH BUYER/END USER EXPLICITLY WAIVES ANY AND ALL PROVISIONS, RIGHTS AND BENEFITS CONFERRED BY ANY LAW OF ANY FEDERAL, STATE OR TERRITORY OF THE UNITED STATES, OR PRINCIPLE OF COMMON LAW, WHICH IS SIMILAR, COMPARABLE OR EQUIVALENT TO CALIFORNIA CIVIL CODE §1542 WHICH STATES "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH DEBTOR OR RELEASED PARTY." AND ALL OTHER SIMILAR STATUTORY, COMMON AND CASE LAW RIGHTS, DEFENSES AND LIMITATIONS.

Having previously independently inspected the Products, or a sample, as fully as desired, or having the opportunity to and having not done so, upon acceptance of delivery of the Products, and except as otherwise herein explicitly provided, each Buyer/End User by acceptance or use of the Products accepts them in their "AS IS" and "WITH ALL FAULTS" condition without any other warranty, expressed, implied or otherwise, and accepts and assumes the entire risk and cost of all servicing, remediation and consequences thereof. This Warranty shall be governed by Nevada law and any unenforceable provisions severed without affecting the remaining provisions. As used herein, "including" includes "without limitation."

The information contained in this publication is based on current information and Product design at the time of publication and is subject to change without notification. Our ongoing commitment to product improvement may result in some variation. No representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or results to be obtained therefrom. For verification of technical data or additional information not contained herein, please contact Spears® Technical Services Department [West Coast: (818) 364-1611 - East Coast: (678) 985-1263].

SPEARS® MANUFACTURING COMPANY PRODUCT LIMITED LIFETIME WARRANTY

LIMITED LIFETIME WARRANTY. Except as otherwise mandated by law or herein provided, Spears® Manufacturing Company ("Company") warrants Standard Catalog Products ("Products") which have been directly manufactured by them to be free from defects in material and workmanship for as long as the end user of the Products ("End User") retains ownership and possession of the Products in accordance with this Warranty ("Warranty Period). Products installed with pipe, fittings, valves, solvent cements, thread sealants or other related products, not manufactured by this Company, are subject to review and may be exempt at the sole discretion of the Company. Each other person or entity acquiring or employing the Products, including buyers, contractors and installers ("Buyer") and End Users ("Buyer/End User") agrees that this Warranty shall be effective only during the Warranty Period so long as the Products are used solely for the normal purposes for which they are intended and in conformance with industry established standards, engineering, installation, operating, and maintenance specifications, recommendations and instructions including explicit instructions by the Company; the Products are properly installed, operated and used, and have not been modified; and all the other terms of this Warranty are complied with. Any violation thereof shall void this Warranty and relieve Company from all obligations arising from this Warranty and the Products.

Upon receipt or discovery of any Products that appear questionable or defective each Buyer/End User shall promptly inspect and return any such Product to the Company at 15853 Olden Street, Sylmar, California 91342, accompanied by a letter stating the nature of any problems. If the Products are determined by Company to be defective in materials or workmanship directly provided by Company, Company, at its sole option, may either repair or replace the defective Products, or reimburse applicable Buyer/End User for the cost of such Products. The applicable Buyer/End User shall bear all applicable shipping costs. THIS SHALL BE BUYERS/END USERS' SOLE REMEDY. EACH BUYER/END USER AGREES THAT COMPANY WILL NOT BE RESPONSIBLE FOR ANY OTHER OBLIGATIONS RELATING TO THE PRODUCTS, INCLUDING ANY OTHER MATERIALS OR LABOR COSTS, LOSS OF USE OR ANY OTHER ITEM OR FOR ANY DELAYS IN COMPLYING WITH THIS WARRANTY BEYOND COMPANY'S REASONABLE CONTROL.

COMPANY SHALL NOT BE LIABLE FOR, DOES NOT ASSUME, AND EXPRESSLY DISCLAIMS, ANY LIABILITY, RESPONSIBILITY AND DAMAGES: DUE TO ANY BUYER/END USER'S FAILURE TO COMPLY WITH THIS WARRANTY, INCLUDING IMPROPER INSTALLATION, USE OR OPERATION; USE WITH PRODUCTS FROM OTHER MANUFACTURERS THAT DO NOT MEET ASTM OR OTHER APPLICABLE PRODUCT STANDARDS; IMPROPER CONTROL OF SYSTEM HYDRAULICS, IMPROPER WINTERIZATION PROCEDURES, IMPROPER VOLTAGE SUPPLY, CONTACT WITH INCOMPATIBLE MATERIALS, CHEMICALS OR CABLES, EXCAVATION/DIGGING, EXCESSIVE WEIGHT, AND VANDALISM; DUE TO REASONABLE WEAR AND TEAR AND DUE TO ANY ACTS OF NATURE, INCLUDING LIGHTNING, EARTHQUAKES, GROUND MOVEMENT, FROST HEAVE, OR FLOODS.

COMPANY EXTENDS ONLY THIS WARRANTY AND EXPLICITLY DISCLAIMS ALL OTHER WARRANTIES, WHETHER IMPLIED OR OTHERWISE EXPRESSED, WHETHER ORAL, STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTIES OR AFFIRMATIONS FOR SUITABILITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO AFFIRMATION BY COMPANY OR ANY OF ITS REPRESENTATIVES, BY WORDS, CONDUCT OR OTHERWISE, SHALL CONSTITUTE A WARRANTY. THIS WARRANTY MAY NOT BE TRANSFERRED, EXTENDED, ALTERED OR OTHERWISE MODIFIED IN ANY MANNER, EXCEPT BY WRITTEN AGREEMENT SIGNED BY COMPANY.

BY ITS ACCEPTANCE OF THE PRODUCTS, EACH BUYER/END USER EXPRESSLY WAIVES ALL OTHER LIABILITY OR OBLIGATION OF ANY KIND OR CHARACTER OF COMPANY, INCLUDING LIABILITY PREDICATED UPON CONTRACT, TORT, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE GROUNDS, AND ALL, IF ANY, DAMAGES AND LOSSES AS A RESULT THEREOF, INCLUDING ALL, IF ANY, COMPENSATORY, GENERAL, SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR PUNITIVE DAMAGES. WITH RESPECT TO SUCH WAIVERS, EACH BUYER/END USER EXPLICITLY WAIVES ANY AND ALL PROVISIONS, RIGHTS AND BENEFITS CONFERRED BY ANY LAW OF ANY FEDERAL, STATE OR TERRITORY OF THE UNITED STATES, OR PRINCIPLE OF COMMON LAW, WHICH IS SIMILAR, COMPARABLE OR EQUIVALENT TO CALIFORNIA CIVIL CODE §1542 WHICH STATES "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH DEBTOR OR RELEASED PARTY." AND ALL OTHER SIMILAR STATUTORY, COMMON AND CASE LAW RIGHTS, DEFENSES AND LIMITATIONS.

Having previously independently inspected the Products, or a sample, as fully as desired, or having the opportunity to and having not done so, upon acceptance of delivery of the Products, and except as otherwise herein explicitly provided, each Buyer/End User by acceptance or use of the Products accepts them in their "AS IS" and "WITH ALL FAULTS" condition without any other warranty, expressed, implied or otherwise, and accepts and assumes the entire risk and cost of all servicing, remediation and consequences thereof. This Warranty shall be governed by Nevada law and any unenforceable provisions severed without affecting the remaining provisions. As used herein, "including" includes "without limitation."

Spears® Quality Policy

It is the policy and objective of Spears® Manufacturing Company to produce a superior quality product suitable for its intended use, with regard to functionality, structural integrity and conformance to established industry standards and practices. It is the commitment of this Company to do so in a manner which provides consistency of product quality, optimum availability, and superior customer service, while maintaining efficiency of operations and profitability necessary to perpetuate product improvement and customer satisfaction. Furthermore, it is recognized that the attainment of these objectives is the responsibility of all Company operations and personnel according to their respective functions.

The information contained in this publication is based on current information on and product design at the time of publication and is subject to change without notification. Our ongoing commitment to product improvement may result in some variations. No representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular application or results to be obtained therefrom. For information not contained herein, please contact Spears® Technical Services Department [West Coast (818) 364-1611 -East Coast: (678) 985-1253]. Reproduction of this publication in whole or in part is prohibited without the authorized consent of Spears® Manufacturing Company, Sylmar, California.

© Copyright 2022 Spears® Manufacturing Company. All Rights Reserved. Printed in the United States of America.



SPEARS® MANUFACTURING COMPANY
15853 Olden Street • Sylmar, CA 91342
PO Box 9203 • Sylmar, CA 91392
(818) 364-1611 • <http://www.spearsmfg.com>

