



SEAL-PLUS™

Restraining Compression System

For PE to PE, PE to Steel and
PE to Copper Connections



**Couplings, Fittings, Valves, Service Connectors,
Tees and Adapters**

SEAL-PLUS™ Restraining Compression System

For P.E. to P.E., P.E. to Steel and P.E. to Copper Connections

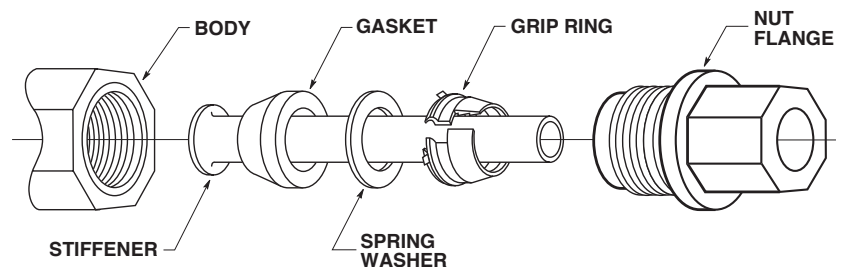
The design of the Dresser® SEAL-PLUS™ restraining end delivers many proven features which contribute to both ease of installation and permanent, leak-free service. There's a proven wedge-shaped gasket, a Dresser benchmark for over 100 years. And a volume compensating spring washer that adjusts and maintains the gasket pressure, even at extremely low temperatures.

Visual verification of proper installation is attained through bottom-out tightening of the nut against the body. A color code on the insert verifies that it is properly sized for the wall thickness of the tubing on which it is being installed.

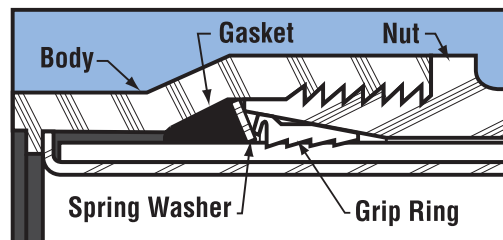
Of course, the SEAL-PLUS™ restraining end meets or exceeds all requirements of the applicable D.O.T. codes for performance and safety.

The SEAL-PLUS™ Compression End Sealing Principle...

The exploded drawing below illustrates the SEAL-PLUS™ restraining end components in a typical Dresser Style 401 Coupling.



At right, the cut-away drawing shows these same components after tightening onto polyethylene pipe.



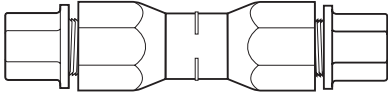
The SEAL-PLUS™ Restraining End Features...

- A proven wedge-shaped gasket...a Dresser benchmark for over 100 years
- Common end assures uniform installation procedure for the entire product line...no need for additional training
- Mechanically loaded gasket pressure for a positive seal
- Volume compensating spring washer adjusts and maintains gasket pressure
- External grip on plastic...meets all D.O.T. code requirements
- Bottom-out tightening provides a visual verification of proper installation
- Simple, quick installation...easy stabbing at low temperatures
- Pressure and temperature ratings equal to the P.E. pipe



The SEAL-PLUS™ restraining end is available in the following product styles

Style 401 Couplings



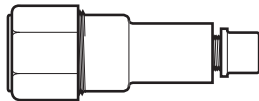
For P.E. to P.E. and P.E. to Copper service connections or repair of P.E. tubing

Dresser **Style 401** couplings and fittings are ideal products for P.E. to P.E. and P.E. to copper connections. Simple and quick to install with ordinary pipe wrenches, they provide a totally dependable **seal and restraint** on both the P.E. and copper pipe ends.

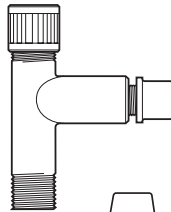
Style 401 couplings and fittings are designed for installation without disassembly. If an unsatisfactory joint is made, however, the fitting can be disassembled, the tubing recut, and the joint re-made. An added feature of the "401" coupling is its adaptability to use for "sleeving-in." By removing the break-away pipe stops, the coupling can be slid back over one pipe end to facilitate installation of a cut-in section.

Style 501 Couplings & Fittings

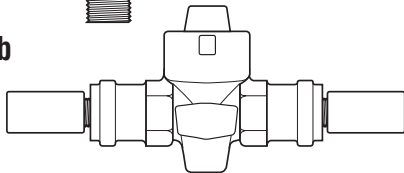
Reducing Couplings



Service Tees



Meter/Curb Valves



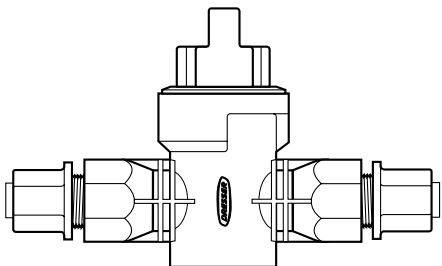
For joining P.E. service tubing to metallic pipe, fittings or valves

Dresser **Style 501** products provide the ideal connection for those many transition points from metal pipe or piping components to P.E. service tubing. The Dresser family of Style 501 products includes steel x P.E. **reducing couplings, male adapters, ells, service tees and valves.**

Whether on new services from metallic mains or renewal services, whether making a connection at the main or service riser, or installing a valve, nearly all the necessary transitions can be made using the same compression end and following the same installation procedures. Like the "401" coupling, the "501" can be disassembled, re-assembled, and the joint re-made, if necessary.

The **Style 175** Meter/Curb valve provides gas-tight, maintenance-free service. There are over 7,000,000 Dresser Style 175 valves currently in service. For P.E. to P.E. and P.E. to steel connections, the "175" may be furnished with one or both ends supplied with the Dresser SEAL-PLUS™ restraining end design.

Style 475 Plastic Curb Valves



The **Style 475** all-plastic gas curb valve offers the unique combination of the SEAL-PLUS restraining compression ends described on the first page of this brochure and the time-proven port sealing characteristics of the Dresser "275" meter valve.

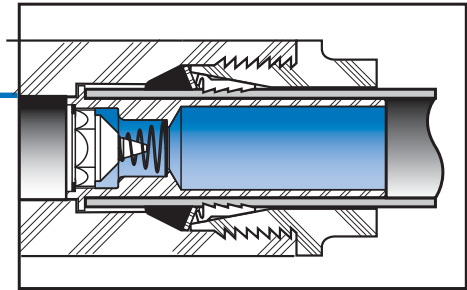
Seal to the Atmosphere: The O-ring construction is designed with an added compression loading to accommodate the movements that occur with temperature and plastic, providing a safety factor for sealing to the atmosphere.

Thruport Sealing: The port sealing action includes a spring loaded seat. At low pressures, the leaf-type springs exert pressure to force the elastomeric coated insert seals into a positive sealing position. At higher pressures, the valve is designed to employ gas pressure to impose a supplemental compressive loading against the seal.

Excess Flow Valve Integration

What is an Excess Flow Valve?

An **Excess Flow Valve (EFV)** is a device *that automatically limits the flow of gas when a condition of excess flow occurs*. It is generally used for residential natural gas service lines to minimize escaping gas in the event of third party damage and other types of line ruptures.



Style 488 EFV Insert... For use with SEAL-PLUS™ ...

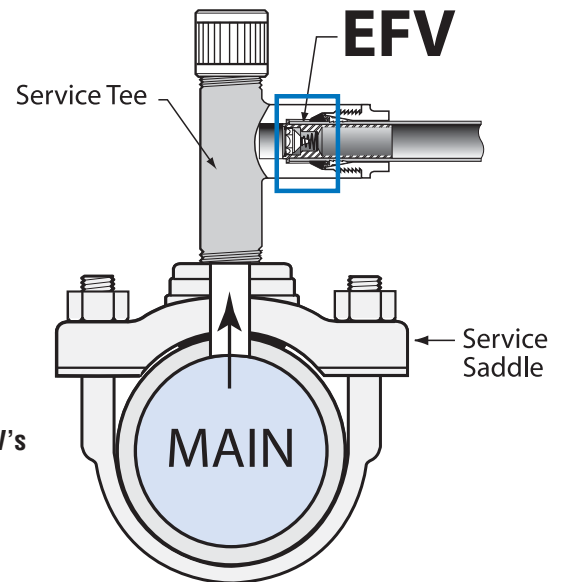
- Style 401 Plastic Couplings
- Style 475 Plastic Curb Valve
- Style 501 Steel Fittings

Dresser Excess Flow Valves Features:

- **Simplicity of Design...**Only two moving parts - the poppet and spring
- **Maintenance-free...**No lubrication or monitoring required
- **100% Production-tested...**per ASTM F1802 test method assuring trip and bypass flow rates per CFR Title 49 D.O.T. 192.381, MSS-SP-115 and ASTM F2138 governing standards
- **Valve Resets Automatically...**no need to excavate or manually repressurize line
- **Integrated Seal & Restraint Rib...**provides gas-tight seal and positive restraint
- **Low Pressure Loss...**maximizes gas flow
- **Self-cleaning Design...**resists particulate build-up

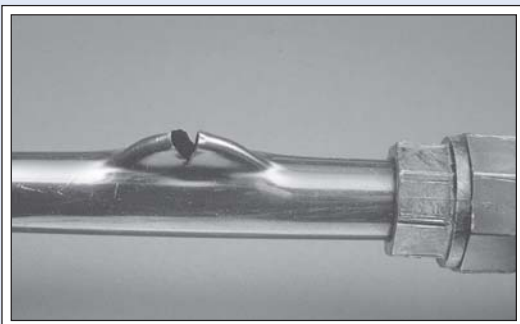
Illustration at right shows a Dresser Style 501 Tap-N-Valve Tee with a Dresser Style 488 Excess Flow Valve inserted in the PE outlet connection.

For correct sizing assistance and further information on EFV's call Dresser Customer Service: 1-800-458-2398



Dresser SEAL-PLUS™ Product Test Results

Shown below is the result of a "quick-burst" test on a Style 401 coupling; the pipe failed while the coupling continued to hold and seal.



The SEAL-PLUS™ Restraining Compression End product line has met the following test requirements:

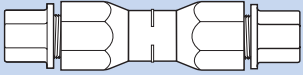
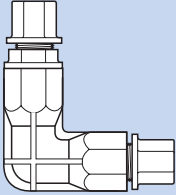
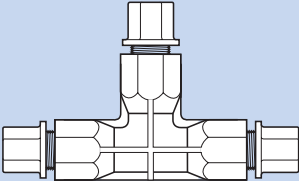

- ✓ Quick-burst
- ✓ Tensile
- ✓ Impact
- ✓ High and Low Temperature
- ✓ Sustained Pressure
- ✓ Dead Weight

NOTE: Always check insert stiffener to assure it is for wall thickness of tubing being used. (See color code chart at right).

COLOR CODE	
Tubing Wall (Any Dia.)	Color
.062	Red
.077	Blue
.090	Steel (plain)
.099/.101/.103	Gold
.121	Black

SEAL-PLUS™ Fittings - Product Application Charts

Style 401 PE x PE; PE x Copper Service Connections*

PRODUCT CONFIGURATION	SIZE (CTS)	PE x PE	PE x Copper	OUTSIDE DIAMETER (OD)	PE Tubing Wall (In.)
Style 401 Coupling** 	1/2	✓	✓	5/8 X 5/8	0.062 0.090
	1	✓	✓	1-1/8 X 1-1/8	0.090 0.099
	1-1/4	✓	✓	1-3/8 X 1-3/8	0.090
Style 401 90° Ell 	1/2	✓	✓	5/8 X 5/8	0.062 0.090
	1	✓	✓	1-1/8 X 1-1/8	0.090 0.099
	1-1/4	✓	✓	1-3/8 X 1-3/8	0.090
Style 401 Tee 	1/2	✓		5/8 X 5/8 X 5/8	0.062 0.090
	1	✓		1-1/8 X 1-1/8 X 1-1/8	0.090 0.099
Style 401 Line Caps 	1/2	✓	✓	5/8	0.062 0.090
	1	✓	✓	1-1/8	0.062 0.090 0.099
	1-1/4	✓	✓	1-3/8	0.090

*INCLUDES INSERT FOR PE PIPE

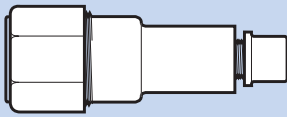
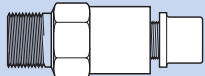
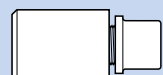
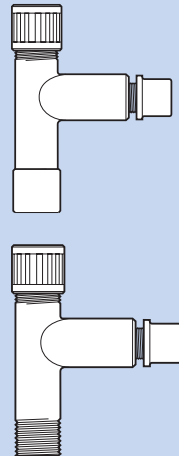
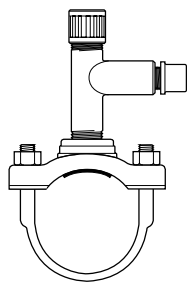
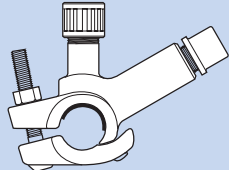
** Note: Can be used for sleeve-in repair.

Provides a permanent seal & restraining connection...
Available with Excess Flow Valve options!



SEAL-PLUS™ Metallic Fittings - Product Application Charts

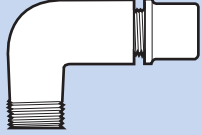
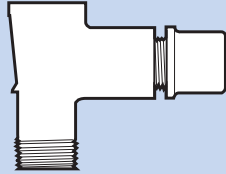
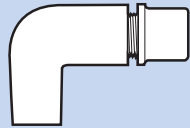
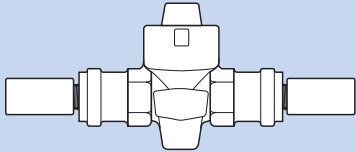
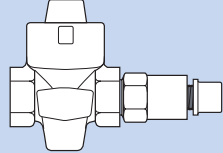
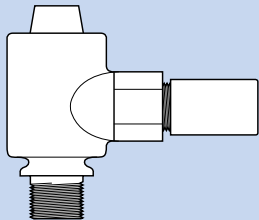
For Style 501 Steel x CTS PE Service Connections*

PRODUCT CONFIGURATION	SIZE Description	1/2" Nom. 5/8 OD	1" Nom. 1-1/8 OD	1-1/4" Nom. 1-3/8 OD	PE Tubing Wall (In.)
 <p>Reducing Coupling w/Style 90 Restraining End</p>	3/4" IPS Restraining	✓ ✓	✓ ✓		0.062 0.090 0.099
	1" IPS Restraining	✓ ✓	✓ ✓		0.062 0.090 0.099
	1-1/4" IPS Restraining	✓	✓ ✓	✓	0.090 0.099
	1-1/2" IPS Restraining		✓ ✓	✓ ✓	0.090 0.099
	2" IPS Restraining 2" IPS w/Anode Connector		✓		✓
 <p>Male Adapter</p>	3/4" MIPT	✓ ✓			0.062 0.090
	1" MIPT	✓	✓ ✓		0.090 0.099
 <p>Weld Adapter</p>	1" Weld	✓			0.090
 <p>Tap-N-Valve™ Tees</p>	3/4" Weld (Specify 1/4", 3/8" or 1/2" Tap Tool)	✓ ✓	✓ ✓		0.062 0.090 0.099
	1" MIPT (Specify 1/4", 3/8" or 1/2" Tap Tool)	✓ ✓ ✓	✓ ✓ ✓		0.062 0.090 0.099
	 <p>Style 91 Service Saddle (1 & 2 Strap)</p>				
 <p>Service Connector</p>	2" ID X 5/8" OD	1/4" Tool			0.062 0.090
		3/8" Tool			0.062 0.090
		1/2" Tool			0.062 0.090

*INCLUDES INSERT FOR PE PIPE

SEAL-PLUS™ Fittings & Valves

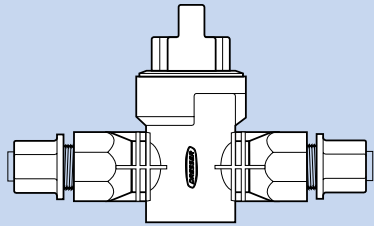
For Style 501 Steel x CTS PE Service Connections*

PRODUCT CONFIGURATION	SIZE Description	1" Nom. 1-1/8 OD	1-1/4" Nom. 1-3/8 OD	PE Tubing Wall (In.)
 <p>Threaded End 90° Street Ell</p>	1" MIPT 1" MIPT x 1-1/8 w/Shield Nut 1" MIPT x 1-1/8 Brass	✓ ✓ ✓		0.090 0.090 0.090
	1-1/4" MIPT x 1-1/8 Brass 1-1/4" MIPT x 1-1/8 w/Shield Nut 1-1/4" MIPT x 1-1/8 w/Shield Nut	✓ ✓ ✓		0.099 0.090 0.099
 <p>90° Street Tee**</p>	1" FIPT x 1" MIPT x 1-1/8 1" FIPT x 1" MIPT x 1-1/8 w/Shield Nut 1" FIPT x 1" MIPT x 1-1/8	✓ ✓ ✓		0.090 0.090 0.099
 <p>90° Plain End Street Ell</p>	1-1/4" MIP x 1-3/8" w/Shield Nut		✓	0.090
 <p>175 Valve x 501 w/Shield Nuts</p>	1-1/8" x 1-1/8" OD w/Shield Nuts (Specify 360° Turn or 90° OL) (Provided as Plastisol Coated Product)	✓ ✓		0.090 0.099
 <p>175 FIPS x 501 Male Adapter</p>	Style 175 FIPS End: 3/4", 1", 1-1/4" & 1-1/2" (Specify 360° Turn or 90° OL)	Male Adapter Sizes: 3/4" & 1" x 5/8"; 3/4", 1", 1-1/4" & 1-1/2" x 1-1/8"		0.090 0.099
 <p>575 Angle Ball Valve</p>	1" IPS Inlet x 1-1/8" OD 1-1/4" IPS Inlet x 1-1/8" OD 1-1/2" IPS Inlet x 1-1/8" OD (Provided as Plastisol Coated Product)	✓ ✓ ✓		0.090 0.090 0.090

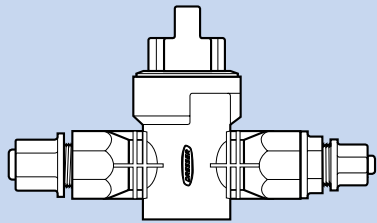
*INCLUDES INSERT FOR PE PIPE

** Note: Street Tees are also available with the SEAL-PLUS™ Restraining Compression End.

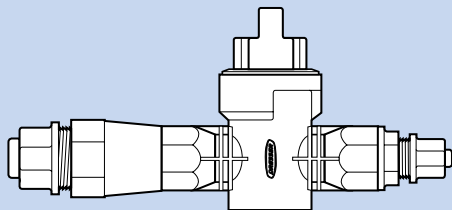
Style 475 Plastic Curb Valves with 501 Compression Ends For PE x PE Service Connections*



Style 475 w/Standard 1-1/8 Ends

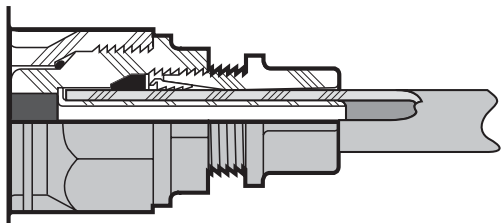


Style 475 with 5/8 Reducing End



Style 475 with 1-3/8 Adapter End

Size CTS (OD) (In.)	Valve OL Operation (90° or 360°)	P.E. Tubing Wall Thickness	Overall Length (A)	Overall Height (B)	Center to Top (C)
5/8	90° or 360°	.062 .090	8-5/8"	5-1/2"	3-15/16"
1-1/8	90° or 360°	.090 .099 .121	7-1/4"	5-1/2"	3-15/16"
1-3/8	90° or 360°	.090 .099 .121	12-3/4"	5-1/2"	3-15/16"
Style 475 Reducing Configurations					
1-1/8 x 5/8	90° or 360°	.090 x .062 .090 x .090 .099 x .062 .099 x .090 .121 x .062 .121 x .090			
1-3/8 x 1-1/8	90° or 360°	.090 x .090 .090 x .099 .090 x .121 .121 x .090 .121 x .099 .121 x .121			



Style 475 with 5/8" O.D. Adapter Compression End

EFV option available for all configurations

*INCLUDES INSERT FOR PE PIPE

WARNING

P.E. PIPE

CHECK SDR

Use proper insert in P.E. pipe end. Improper insert could result in escaping gas that could ignite and cause property damage, serious injury or death.

WARNING

STAB MARK

You MUST mark and stab the pipe into the fitting to the proper stab depth. Failure to do so could result in escaping line content that could cause property damage, serious injury or death.

Piping Specialties

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